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The Strange Case of Quackery and the FDA

Stephen Barrett, M.D.

Popular wisdom states that health products marketed with unproven claims should be reported to the FDA. Having personally reported hundreds of such products, I can assure you that doing so is rarely effective.

When the FDA learns that a misbranded food supplement is being marketed, it can issue a warning, seize the product, seek a civil injunction, press criminal charges, or do nothing. Each year the agency issues a few warning letters, seizes a few such products, and obtains a few injunctions. Most often, however, no enforcement action is taken.

Because civil actions are slow and almost never result in a net loss to the sellers, they have little or no deterrent value. *Criminal* prosecutions—which involve the possibility of imprisonment—have great deterrent value. Yet between 1963 and 1983, the agency launched only one criminal prosecution for food supplement misbranding.

In September 1983, as part of an extensive 4-year investigation of frauds against the elderly, Congressman Claude Pepper sent detailed questionnaires to federal agencies, asking what they are doing about quackery. The FDA indicated that 40 staff years and \$1.8 million (0.5%) of its \$362.7 million budget for 1983 were allocated to the control of quackery, but that these figures included educational activities and publications in addition to enforcement actions. Mr. Pepper was also informed that no specific office within the agency was designated to handle health frauds, and that the FDA actually had no organized program to deal with them—or even to detect them!

The health food industry is keenly aware of the FDA's apathy toward quackery. Hundreds of misbranded food supplement products are currently being sold with suggestions that are effective in preventing and/or treating a wide variety of diseases. Hardly a month goes by without some "miraculous" substance being re-discovered or newly marketed with unproven claims. Users of these products are engaged in what Dr. Victor Herbert calls "nutrition roulette."

This situation could easily be corrected by a systematic program of detection and *criminal* prosecution. But the FDA claims that it lacks the resources needed

for such a program because priority must be given to regulation of prescription drugs. That is simply untrue. Detecting violations is quite easy, and the resources being used for civil prosecution could simply be shifted to criminal prosecution.

About a year ago, I mailed a series of penetrating questions designed to explore this issue to Joseph P. Hile, Associate FDA Commissioner for Regulatory Affairs, the agency's top enforcement official. Among other things, I asked him to compare the cost in dollars and man-hours of warning letters, seizures, civil injunctive procedures and criminal prosecutions. I also asked how many complaints the agency had received about misbranded food supplements during the previous five years and how many of them had led to regulatory action. Mr. Hile did not reply.

In July 1984, an FDA official named Paul Sage filed a petition—as a private citizen—asking the agency to adopt a new enforcement policy. As a senior member of the FDA's litigation and recall staff, Mr. Sage has investigated quackery and observed the effects of enforcement actions for almost 20 years. His petition notes the following:

- Persons who violate the labeling provisions of the Food, Drug and Cosmetic Act by marketing products without FDA approval create a threat to the public health. For example, use of an unapproved vitamin E preparation may have been responsible for the recent deaths of more than 30 infants.
- Because the marketplace is flooded with unapproved drugs, civil action on a case-by-case basis is not practical. But if criminal sanctions were used routinely to deal with violations of this kind, future violations would be deterred.
- Criminal cases would require less of the agency's resources than civil cases because they are simpler to carry out.

Along similar lines, Congressman Pepper has recommended that the FDA should: 1) significantly increase its public educational efforts regarding quackery; 2) set up a systematic method of detecting labeling violations; 3) enforce its laws quickly and vigorously; and 4) unite with the FTC and Postal Service to develop a concerted effort against repeat offenders.

Mr. Pepper also wants Congress to increase the maximum penalties for crimes related to the promotion of unproven remedies to at least five years in jail and a \$5,000 fine, five times the current levels under the Food, Drug and Cosmetic Act.

Responding to Mr. Pepper, the FDA promised to develop new programs to deal with health quackery and has already set up a health fraud branch. It has also been reported that the agency is developing a regulatory policy for "medical foods." But Mr. Sage suggests that unless the FDA Commissioner watches closely and presses for effective action as requested in his petition, new programs may be blocked by the entrenched apathy of FDA bureaucrats responsible for the current mess.

The "starch blocker" situation illustrates further why criminal prosecution is essential. Beginning in 1981, these products were widely heralded as a new type of effortless weight-reduction remedy. As promotion mushroomed, reports of nausea, vomiting, diarrhea, cramps and bloating surfaced among users, but the number of manufacturers still rose dramatically to more than 300. When the FDA asked companies to voluntarily halt marketing of the products, many refused, and the agency took civil action against a few of them. By the time court orders prohibiting their sale were won, starch blockers had been profitably manufactured for over a year; and they remained available in many health food stores months after the court orders were issued.

Commenting further in his petition, Mr. Sage said, "The public can thank its lucky stars that the adverse effects of starch blockers were not disastrous. People should not have to depend upon such luck for

assurance that products . . . are safe and effective. That is why we have a Food, Drug and Cosmetic Act."

I certainly agree, but without criminal prosecution, the Act cannot be enforced effectively. If you would like the FDA to become more aggressive against quackery, there are three things you can do:

1. Send a brief letter to FDA Commissioner Frank E. Young, M.D., Ph.D., stating why you think quackery enforcement should be given higher priority.

2. Report misbranded or unapproved supplements to your congressional representatives, asking that they request the appropriate government agency to take action. This is potentially more potent than complaining directly to the FDA because communications from Congress are likely to receive more attention.

3. Send a statement supporting Mr. Sage's petition to the Documents Management Branch, U.S. Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857. Your statement should be identified with Docket #84P-0242CP and submitted in four copies.

Everyone knows that people who cheat on their income tax may wind up in jail. Unlike tax evasion, food supplement misbranding cannot be concealed. If the FDA makes it clear that cheating on a label can result in imprisonment, do you think it will remain a problem?

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author [with Dr. Victor Herbert] of Vitamins and "Health" Foods: The Great American Hustle. In June 1984, they both received FDA Commissioner's Special Citation Awards for Public Service in combatting nutrition quackery.

PERSPECTIVE ON ASPARTAME

Manfred Kroger, Ph.D.,
J. Lynne Brown, Ph.D.

Aspartame, also known by its trade name, NutraSweet, was approved by the FDA for use in soft drinks in July 1983. It had been approved in 1981 for use as a tabletop sweetener (Equal) and in dry beverage mixes, cold breakfast cereals, chewing gum, gelatins, puddings, fillings, and dry mixes for dessert toppings.

Aspartame was discovered in 1965 by scientists at G. D. Searle & Company and has been the subject of more than 100 studies to test its safety and potential uses in foods. As a result, scientists generally agree that aspartame is one of the most thoroughly tested food additives ever approved. It is being used in more than 30 countries. According to Searle, total sales of NutraSweet were \$336 million worldwide in 1983.

Aspartame is made from two commercially produced amino acids, phenylalanine (as the methyl ester) and aspartic acid, and can therefore be considered protein-like. It is about 180 times as sweet as sucrose (table

sugar). One gram of aspartame, which has the sweetening power of almost half a pound of sugar, supplies only 4 calories. Because of this intense sweetness, the amounts ingested are small enough for aspartame to be considered virtually noncaloric. While saccharin can have a bitter aftertaste, aspartame does not. But aspartame's higher price (\$90 vs \$4/pound), as well as formulation considerations, has led most soft drink manufacturers to combine the two.

Since aspartame is completely hydrolyzed within the intestine, it does not enter the blood stream as such. Therefore many of the safety studies have also explored whether aspartame's components or their metabolic by-products cause any difficulty. Concerns about aspartame's safety have revolved primarily around six issues:

1. *Methanol production.* Aspartame, whether digested, heated, or temperature-abused in improperly stored products, ultimately breaks down into its original

components: aspartic acid and phenylalanine, plus a small amount of methanol (methyl alcohol) from the methyl ester. Methyl alcohol, among other things, is used to denature ethyl alcohol for industrial use, making it unfit to drink. However, the amounts of methanol resulting from aspartame breakdown are harmless. Small amounts of methanol are normally found in foods such as tomato juice, bananas, cherries, wines, and other fermented products.

Woodrow Monte, Ph.D., R.D., Director of the Food Science and Nutrition Laboratories, Arizona State University, has voiced much concern about the level of methyl alcohol which he believes can result from aspartame use. Together with the Arizona Dietetic Association and the Central Arizona District Dietetic Association, he petitioned the Arizona Department of Health Services to ban aspartame use in carbonated beverages within the state; and he has expressed his views on nationwide television and elsewhere. The petition alleged that breakdown of aspartame to methyl alcohol, which would be accelerated by high storage temperatures, would create a health hazard.

In March 1984, the petition was denied by the Arizona health department, based on a 25-page, point-by-point analysis. The state agency concluded that the issues raised in the petition had all been adequately addressed by the FDA during the investigations leading to approval of aspartame as a food additive. Among other things, the agency correctly pointed out that methanol released during storage is metabolized the same way as methanol released from intact aspartame digested in the body—and that the amounts in either case are not large enough to be significant.

If all the aspartame in a carbonated soft drink were to break down into its components, the maximum amount of methanol produced would be about 56 milligrams (mg) per liter of beverage, about a third the amount normally derived from a similar quantity of fruit juice. The estimated threshold for toxicity is about 35,000 mg for a 150-lb individual. Clinical studies with aspartame have shown no adverse effects in people who ingested up to 20 mg of methanol per kilogram (kg) of body weight in a single dose. This is about 1,400 mg of methanol per individual, the amount that would be produced by drinking 25 liters of diet soft drinks at once with all of their aspartame degraded. Of course, people don't drink this much in a day.

The toxicity of methanol actually results from its metabolism to formic acid. But no increased formate has been detected in blood even after high ("abuse") levels of aspartame ingestion.

2. *Changes in brain neurotransmitter levels.* Phenylalanine is a precursor of dopamine (DA) and norepinephrine (NE), two of several neurotransmitters

known to be involved in brain function. There has been speculation that large amounts of aspartame consumed with carbohydrate (which releases insulin into the blood stream) may affect the levels of DA and NE in relation to other neurotransmitters and thereby alter behavior—even though no unusual behavior has been reported among aspartame consumers in countries where the sweetener has been used for years, or in clinical tests of aspartame where unusually high doses were consumed.

Amino acids cross the blood-brain barrier through an active transport mechanism for which they compete. Phenylalanine shares the same pathway as tryptophan (precursor of the neurotransmitter serotonin) and other large neutral amino acids. Since insulin accelerates the metabolism of amino acids as well as carbohydrates, it lowers blood levels of these competing amino acids and thus makes entry of phenylalanine easier.

Dr. Richard Wurtman of M.I.T. has shown that brain phenylalanine levels are increased and tryptophan levels decreased in rats given glucose plus aspartame. Other experiments, not involving aspartame, have led him to believe that these altered amino acid levels lead to higher ratios of DA and NE to serotonin in the brain, and to speculate that very large intakes of aspartame-containing beverages (well above consumption levels expected by the FDA) could lead to behavioral changes or convulsions.

However, Dr. John Fernstrom and others at the University of Pittsburgh have shown that aspartame doses large enough to significantly increase brain phenylalanine do not alter levels of DA, NE or serotonin. This led the FDA to state in its final rule (published in the July 8, 1983 *Federal Register*): "The data supplied . . . do not provide support for the hypothesis that the ingestion of aspartame and carbohydrates will alter brain levels of neurotransmitters and thereby produce behavioral modification."

3. *Diketopiperazine (DKP) production.* Concern has been expressed that DKP, another chemical produced when aspartame decomposes, can react with nitrite to produce nitrosamines, which are carcinogens. Storage tests at 30°C (86°F) for 8 weeks have shown that 38 percent of the aspartame in a cola beverage was degraded, with 12 percent remaining as DKP. At higher temperatures, aspartame stability drops off markedly, but the FDA believes that simple precautions during the handling and storage of soft drinks can prevent this. Although aspartame is not generally intended for use in baking or in heated foods because it breaks down and loses its sweetening power, it must be assumed that some individuals will use the tabletop product in cooking. Proper labeling of aspartame should minimize such

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misuse. The FDA believes that DKP has been adequately tested, and that the heating of aspartame would not create a health hazard but merely result in loss of sweetness. Further, tests on DKP have demonstrated that no formation of nitrosamines occurs with DKP or aspartame.

4. *Phenylketonuria (PKU)*. One in 15,000 babies is born with an inherited inability to metabolize phenylalanine to tyrosine due to lack of the enzyme, phenylalanine hydroxylase. This metabolic disorder is now routinely detected at birth so that PKU babies can be put on a phenylalanine-restricted diet. If this is not done, phenylalanine blood levels rise very high and cause brain damage with severe mental retardation. Products containing aspartame are labeled to indicate they contain phenylalanine so that they will not be given to children with PKU.

Problems with phenylalanine metabolism do not occur in normal individuals. Nevertheless, to test the hypothesis that aspartame could cause a dangerous rise in plasma phenylalanine, extensive studies have been conducted by giving normal adults 34, 50, 100, or 200 mg/kg of aspartame. Even with single doses of 200 mg/kg—six times the maximum of estimated use—blood phenylalanine levels stayed well below the concentration associated with neurotoxicity. It has also been determined that children metabolize aspartame at the same rate as adults. Thus, even with abuse, phenylalanine will not reach toxic blood levels; and in all cases, normal levels are reestablished within 24 hours after ingestion. It has also been determined that parents

and siblings of PKU children can safely consume aspartame.

5. *Tooth decay*. Studies at the National Institute of Dental Research indicate that aspartame does not promote tooth decay. It contains no fermentable carbohydrate and therefore does not support the bacteria which produce acids that attack tooth enamel.

6. *Diabetes*. The American Diabetes Association states that aspartame is an acceptable sugar substitute as a sweetener for products that may be included in diabetic meal plans. Recently reported research by Dr. D.L. Horwitz of the University of Illinois, reaffirmed that aspartame is safe for diabetics.

Thus aspartame, as currently known and used, appears to be a perfectly safe component in the human diet.

Perhaps the most aggressive adversaries of aspartame use are the Community Nutrition Institute (CNI) of Washington, D.C., and its attorney, James Turner. (Turner, principal author of *The Chemical Feast*, has been a relentless critic of the FDA, and served in the late 1970s as "Washington Representative" of the National Health Federation.) Though rebuffed twice since the FDA approvals in 1981 and 1983, CNI has continued to press through the federal courts for a temporary restraining order against aspartame use. But so far the courts have ruled that no evidence exists to justify such a request.

Dr. Kroger is Professor of Food Science and Dr. Brown is Assistant Professor of Food Science Extension at The Pennsylvania State University.

Inexpensive Publications

Single copies of 23 government publications on food and nutrition, most of them reprints of articles from *FDA Consumer*, are available at nominal cost from the Consumer Information Center, Department N (Attn: S. James), Pueblo, CO 81009:

- 151M Cholesterol and Your Health
- 155M Exercise and Weight Control
- 516M A Compendium of Fats
- 517M The Confusing World of Health Foods
- 518M Consumer's Guide to Food Labels
- 519M Food Additives
- 520M A Primer on Dietary Minerals
- 521M RDAs: Key to Nutrition
- 522M Roughage
- 523M Saccharin, Cyclamate, and Aspartame
- 524M Sodium
- 525M Some Facts and Myths About Vitamins
- 526M Sugar
- 527M That Lite Stuff
- 528M Vegetarian Diets
- 529M What About Nutrients in Fast Foods?
- 530M Can Your Kitchen Pass the Food Storage Test?
- 532M Microwave Oven Radiation
- 556M About Body Wraps, Pills, and Other Magic Wands
- 557M Cellulite
- 558M Weight Loss
- 597M Food Safety for the Family
- 599M Toxic Herbs

Articles should be requested by order number. Any single title is free, but a \$1 per order handling fee applies if more than one title is requested. (Up to 20 titles can be requested for the same dollar.) The check should be payable to Superintendent of Documents.

At Your Own Risk, an accurate and comprehensive book about chiropractic, was published in 1969 and is out of print. However, paperback copies are still available for \$2 each plus \$1 postage from LVCAHF, P.O. Box 1602, Allentown, PA 18105.

Booklets on the following topics are available for \$2 each from the American Council on Science and Health, 47 Maple St., Summit, NJ 07901. Bulk rates are available on request.

- Alcohol Use During Pregnancy: Its Effect on the Unborn Child (1981)
- "Vitamin B-15": Anatomy of a Health Fraud (1981)
- U.S. Food Safety Laws: Time for a Change? (1982)
- Food Additives and Hyperactivity (1982)
- Irradiated Foods (1982)
- The Health Effects of Caffeine (1983)
- Fast Food and the American Diet (1983)
- Breast or Bottle? (1983)
- Fluoridation (1983)
- Cancer in the U.S.: Is There an Epidemic? (1983)
- Antibiotics in Animal Feed: A Threat to Human Health? (1983)
- Pesticides in your Home and Garden (1984)
- Ethylene Dibromide (1984)

Health Food Store Sales Drop

Describing 1983 as "the year the bubble burst," *Health Foods Business* reported that its annual survey of health food stores indicated a 17.6% drop of total sales for the industry compared to 1982. Total sales of \$2 billion in 7,700 stores included \$747 million for vitamins and supplements (+1.8%), \$138.6 million for herbs (-22.2%), \$54.2 million for herbal teas (+11.1%), and \$46.2 million for books (-17.8%). However, the magazine cautioned that since fewer than 10% of questionnaires were returned, the survey should be considered indicative of trends rather than taken too literally.

Natural Foods Merchandiser's annual report noted that vitamin sales had risen 5.2%, the smallest increase in five years, but that overall retail sales had declined. "The runaway favorite for best growth category" was amino acids, whose popularity was attributed to media coverage of amino acids and the book, *Life Extension*, by Dirk Pearson and Sandy Shaw.

General Nutrition, Inc. (GNC) with about 1,200 health food stores—reported 1983 gross sales of \$374.9 million, up 5.5% from 1982, but profits remained virtually unchanged at \$24.9 million. GNC founder David Shakarian said that, "Every supermarket, every health and beauty aid chain, every department store is putting in a nutrition department, and this competitive pressure has caused a strain on our earnings."

Other industry officials blame part of the 1983 decline on criticism. In *Health Foods Business*, one company president said that "there appears to be a carefully orchestrated, multimedia, nationwide campaign intended to impair, impede, if not to destroy the health food industry." Another official, referring to Drs. Victor Herbert, Fredrick Stare and Elizabeth Whelan, stated, "When these people do a radio show or get on television in our area, it hurts! A local newspaper article featuring one of these attacks can cause us no end of problems."

Shaklee Corporation bucking the trend, had record U.S. sales of \$398.1 million to its distributors in the year ending September 30, 1983, up 11% from the previous year.

QUESTION BOX

Q. Is there a reliable magazine that covers general health topics for laypersons?

A. *Rx Being Well*, published bimonthly by the Biomedical Information Corporation, 800 Second Ave., New York, NY 10017, offers authoritative health and medical information in clear, easy-to-read language. It is unique among health magazines because its staff is headed by two medical school professors who are highly respected medical editors. Every article is either written or carefully reviewed by at least one additional health authority. The magazine is distributed free to 100,000 doctors for placement in their waiting rooms, but it can also be obtained by subscription for \$9/year.

Briefs

Health promotion. Representatives of more than 60 government, professional, public health and business organizations gathered recently in Washington, D.C., for a 2-day conference sponsored by the Department of Health and Human Services on Prospects for A Healthy America: Achieving the National Health Promotion Objective. Anita Owen, R.D., who represented the nutrition community, reported general agreement that: 1) prevention through healthier lifestyles must be the key objective; 2) national organizations should issue formal policy statements, set and implement long-range goals, and help their members increase communication and behavioral change skills.

Antiquackery group goes national. Reflecting the fact that hundreds of its 1000+ members live in other states, the California Council Against Health Fraud was recently renamed the National Council Against Health Fraud. Chapters have already been organized in several states. Membership information can be obtained from NCAHF, P.O. Box 1276, Loma Linda, CA 92354.

Megavitamin classic updated. John Fried's 1975 classic, *The Vitamin Conspiracy*, has been updated in paperback as *Vitamin Politics*. Thoroughly researched, the book includes interviews with leading megavitamin proponents and the author's profound analysis of their lack of credibility. Copies can be ordered for \$9.95 each plus \$2.00 postage from Prometheus Books, 700 E. Amherst St., Buffalo, NY 14215.

The Stokes Report, a monthly newsletter for food service managers, is now in its fourth year of publication. Its topics include computers, cost management, labor/productivity, energy conservation, equipment selection, and government regulations. Its publisher, Judy Ford Stokes, R.D., also conducts seminars and is a consultant to schools, health care facilities and correctional institutions. Subscription information can be obtained c/o P.O. Box 27595, Atlanta, GA 30327.

Librarians Beware! *Trace Elements, Hair Analysis and Nutrition*, by Richard Passwater, Ph.D., and Elmer M. Cranton, M.D., has been selected by *Library Journal* as one of the top six health books of 1983 despite its espousal of unproven methods. Dr. Cranton is a former president of the American Holistic Medical Association, a group that promotes unscientific practices. Passwater is research director for a food supplement company. His "Ph.D." is from Bernadean University, an unaccredited correspondence school which was not legally authorized to grant degrees.

Charges filed in herb tea case. Five individuals are being prosecuted by the District Attorney of Los Angeles County for promoting ADS, an herbal tea imported from Japan. The five are charged with violating California's cancer quackery laws and with conspiracy and grand theft by false pretenses. ADS, also known as RD-7, Excel and Forte, was touted by defendants as a cure for everything from cancer to arthritis, according to DA investigators. Defendants allegedly used video tapes showing patient testimony and claiming a 98% cancer cure rate. Laboratory investigation revealed the substance to be water and nondescript vegetable matter with no medicinal properties. [*California v. Middleton, Yamagishi, Dix, Sanford, Halstead*, No. A399111, Municipal Court of Los Angeles, 1984.]

Possible lecithin toxicity. Studies conducted by Joanne Bell, Ph.D., pharmacology research associate at Duke University, suggest that pregnant women who use a diet aid containing lecithin may expose their unborn children to neurological damage. Dr. Bell found that pregnant rats given 5% lecithin in their regular diet produced offspring with abnormally slow reflexes and abnormalities in brain enzymes important to early development.

Zap a diploma mill? The Federal Trade Commission is investigating schools that issue nutrition degrees by mail. Information should be sent to Attorney Walter Gross, Federal Trade Commission, Sixth St. and Pennsylvania Ave., N.W., Washington, DC 20580.

Zap a quack? Legislators considering nutritionist licensure often ask for examples of individuals harmed by advice from diploma mill "graduates" or other nonprofessional "nutrition counselors." *Nutrition Forum* is interested in receiving reports of such cases.

Dubious claims. Ads by General Nutrition Centers (GNC) claim that its "Life Expander G.H. Releaser" provides "weight control and reduction without dieting." Composed of "precisely measured amounts" of the amino acids, 1-ornithine, 1-arginine and 1-tryptophan, it is claimed to "stimulate the release of growth hormone that directs your body to burn fat for needed energy." If the product actually did this, it would be an unapproved and misbranded new drug that would be illegal to sell. Moreover, above-normal production of growth hormone in adults causes acromegaly, a disease characterized by abnormal growth and deformity of many parts of the body!

Fat profits. The American Dietetic Association estimates that weight loss centers have grown into a \$500 million-a-year national market. Using demographic studies and high-powered advertising, they have taken aim at some 75 million Americans regarded as overweight. *Physicians Financial News* reports that Weight Watchers, with about 10,000 centers, is no longer selling franchises. Diet Center, with 1,850 units and still growing rapidly, had 1983 sales of \$30.2 million. Nutri-System which had 690 units by year's end, is also expanding rapidly. According to Nutri-System's director of investor relations, its typical franchise recovers the initial investment in 6 to 18 months and is likely to gross \$350,000 annually after a year.

Media setback. The National News Council, an independent body formed 11 years ago to hear complaints about the press, voted recently to cease operations. The organization was formed with the belief that a channel through which complaints about unfair reporting could be investigated would contribute to higher journalistic standards. But, as noted by former NNC vice-chairman, Elie Abel, "Remarkably few captains of the news industry saw it that way. They knew the council had no power to punish or compel. Its only sanction was exposure. And as we have sadly learned, even that hypothetical power comes to naught when major newspapers, magazines, and networks treat the council's existence and its findings as a dirty little secret." Although the number of cases involved was not large, the council was effective in countering nutrition misinformation. Thus its closing is a serious setback for the scientific nutrition community.

"Health freedom." The National Health Federation, the militant lobbying arm of the health food industry, has announced that its top priority for 1984 is passage of federal legislation to permit "holistic doctors" to use drugs or other therapy not approved by the FDA. Dr. William Jarvis, President of the National Council Against Health Fraud, calls this type of law "a hunting license for quacks." Although no bill was identified, NHF recently asked members to mail form letters to Congress supporting this type of legislation.

Heavy penalty. A London school district has been ordered to pay \$13,000 in damages to a 16-year-old girl whose weight rose from 140 to 210 during a 2-month hospital stay after she broke her leg in school. The gain was attributed to inactivity plus access to large amounts of candy.

"Organic" legislation advances. The Agricultural Productivity Act (H.R. 2714), which would earmark \$2 million annually for research into "organic farming," was passed by the U.S. House of Representatives in January 1984 and is now under consideration (as S.B. 1128) in the Senate. The bill calls for study of 12 farms to see the effects of "transition from (A) farm practices which rely on synthetically compounded fertilizers, pesticides, growth regulators, livestock feed additives, and tillage practices which control erosion; to (B) farm systems which rely on legume and other sod-based crop rotations, the efficient use of crop residues, green manures, animal manures, off-farm organic wastes and mineral-bearing rocks . . . efficient conservation practices . . . and nonchemical or biological methods of weed and pest control." The bill is being heavily promoted by health food stores under the leadership of Friends of the Earth.

Mushroom warning. A report on four cases of mushroom poisoning in the February 24, 1984 *Journal of the American Association* notes that 1 to 2 percent of an estimated 5,000 species of wild mushrooms are toxic. "Despite popular myths," the authors conclude, "there is no simple and reliable way to determine whether mushrooms are safe or dangerous. Poisonings often occur in persons supposedly experienced in foraging for and identifying wild mushrooms . . . Consumption of wild mushrooms carries an inherent danger that is sometimes life-threatening."

Top book award. *Vitamins and Minerals: Help or Harm?* [George F. Stickley Co., \$14.95] has been selected as the best trade book of 1983 by the American Medical Writers Association. Biochemist Charles W. Marshall, Ph.D., the book's author, invested more than five years in full-time study of the scientific literature and correspondence with leading nutrition authorities.

A company to watch. An article in *Forbes* magazine notes that Bernard Cornfeld, who built a worldwide \$3 billion mutual fund empire whose investors lost hundreds of millions of dollars when it collapsed in the early 1970s, has become chairman of Orthomolecular Nutrition Institute, Inc. The company's products will include "health foods," food supplements, metabolic tests, hair analysis, diet programs, cooking courses, exercise classes, and even a health spa that offers cosmetic surgery. According to the article, the sales force will be composed mostly of housewives managed by some of those involved in the mutual fund venture.

Free fluoridation newsletter. Professionals involved in promoting fluoridation can request placement on the mailing list for *Dear Colleague*, published quarterly by the U.S. Centers for Disease Control (CDC). Its purpose is to enable fluoridation promoters to exchange information about their activities and educational materials. Requests (specifying your involvement) should be sent to William B. Bock, D.D.S., Chief, Dental Disease Prevention Activity, Center for Prevention Services, Centers for Disease Control, Atlanta, GA 30333.

New threat to fluoridation. Antifluoridation crusader John Yiamouyiannis, Ph.D., has organized the Center for Health Action to coordinate antifluoridation activity worldwide. This organization appears to involve merging of the assets of two other groups founded in 1980 by Yiamouyiannis—the Safe Water Foundation and the National Health Action Committee—neither of which appears to be solidly funded. Headquartered in Delaware, Ohio, the new group describes itself as “a union of virtually every effective antifluoridation group in the country.” Its brochure, which claims that more than 100 million Americans suffer from fluorosis, projects an annual budget rising from \$750,000 its first year to \$5,625,000 by 1987.

More vitamin statistics. A telephone survey recently reported by the FDA found that 43% of those questioned take daily vitamin or mineral supplements. There were 2,991 respondents, aged 16-95. Based on this study, the FDA estimates that 39.9 percent of the U.S. population aged 16 or over takes supplements. Eleven percent of those surveyed were taking five or more different ones, and about 4 percent were taking 25,000 I.U. or more vitamin A. According to a report in the *Chicago Tribune*, during 1983 the regional poison control center at Rush-Presbyterian-St. Luke's Medical Center received more than 800 calls from parents of children who took overdoses of flavored vitamins. About 90 percent of the children were less than three years old.

Dangerous enemas. “High colonic” enemas given by chiropractors, naturopaths, “nutritional counselors” and misguided physicians often involve the use of 20 or more gallons of water which may contain herbs, coffee, enzymes and other additives. Advocates claim erroneously that this procedure can heal a wide variety of ailments by washing out accumulated “toxins” from the large intestine. Reported complications include severe infections (resulting from inadequately sterilized equipment), perforation of the bowel (mainly in elderly individuals), fluid overload, and electrolyte imbalance.

Selenium overdose. The U.S. Centers for Disease Control (CDC) recently reported a case of selenium intoxication in a 57-year-old woman who suffered fingernail abnormalities and hair loss. The case is considered unusual because it appears to involve a product that contained 182 times the amount of selenium indicated on its label. The mislabeled product—only 250 bottles of which are believed to have been distributed—has been recalled by its manufacturer.

Botulism from honey. CDC has also issued a warning that honey should not be fed to infants under one year of age because of the possibility of infant botulism. In this condition, which is rare, *C. botulinum* toxin is produced in and absorbed from the infant's gastrointestinal tract. This differs from food-borne botulism, a more dangerous problem resulting from ingestion of toxins present in improperly prepared foods.

Restaurants and smoking. Complaints by restaurant patrons about smoking have been increasing. A recent nationwide survey by the trade publication *Restaurants and Institutions* found that over one-third of respondents said smoking was a source of irritation. The National Restaurant Association, whose own study found that over one-third of respondents considered a no-smoking section important, has issued a guide on this subject for restaurateurs. Yet only 10 out of 81 New York restaurants and chains surveyed by the New York Heart Association provided no-smoking areas. And a poll of 70 Chicago restaurant managers reported by Ann Landers found that 87% of them would permit smoking, but only 34% would permit breast-feeding!

Naturopath's conviction upheld. A Kentucky court recently upheld the conviction of naturopath Kenneth May for practicing medicine without a license. May failed to diagnose a 3-year-old boy's leukemia and treated him instead with natural diets and vitamins during the three months prior to his death. According to expert testimony, had the leukemia been diagnosed and treated in time, the child's chances of recovery would have been 80%. [*May v. Commonwealth of Kentucky*, Fayette Circuit Court, No. 83-X-034, Feb. 14, 1984.]

Guinea pig doctors. Some 27,000 physician volunteers are still enrolled in a 5-year double-blind study to determine whether taking beta-carotene capsules every other day lessens the incidence of cancer. According to the project's director, Charles H. Hennekens, M.D., of Harvard University, fewer than 2 percent of the original participants dropped out during the first six months.

What's behind the name? The National Institute of Health [not a government agency], P.O. Box 536, Staten Island, NY 10310, sells Shaklee products by mail. Although its brochure says, “We won't promise you the moon,” it also suggests that supplements can provide “energy, vitality, body and figure, mental capacity, zing and zest, youthfulness, physical fitness, stamina, well being and longer life . . . There's no better way of keeping your optimum health than with SHAKLEE nutritional supplements.”

Profile bread. The Federal Trade Commission has denied a petition from ITT Continental Baking Co. to modify a 1971 consent order regarding Profile bread. The order had settled charges that ads for the bread had falsely claimed that it had special value in helping people lose weight. In denying the request, the Commission said that ITT may truthfully advertise the bread's caloric content, but that the information submitted by the company in support of its petition “does not provide a reasonable basis for any weight reduction or control claims.”

Lower telephone bills. Most people who spend \$10/month or more for long distance calls can save money with a discount service. SPRINT is ideal because it has no monthly service fee. Calls may be made from any pushbutton phone in hundreds of calling areas (even when you are traveling) to any number in the United States. Per call discounts range up to 50% of Bell rates with additional discounts if total calls exceed \$75/month. For complete information, call 1-800-521-4949.

1984 IOWA TITLE BOUT ENDS WITH TECHNICAL KNOCKOUT

Judith D. Klopfenstein, M.S., R.D.

Just when it appeared that Iowa would become the first state to require licensure of dietitians and nutritionists, a series of unforeseen events delayed the legislation another year. The preliminary rounds of the licensure battle were fought in December 1983 before the Commission of Professional and Occupational Regulation (COPOR), a regulatory body that rules on the merits of all proposed licensure statutes before they can be considered by the Iowa Legislature. Following subcommittee and public hearings on the issue, COPOR voted 6-4 to recommend that the scope of practice in the fields of dietetics and nutrition be defined, and that individuals practicing as dietitians or nutritionists be required to obtain a state license. The minority opposition was led by House Representative Darrell Hanson, COPOR chairman, who remained a formidable adversary.

Following COPOR approval, the proposed act was drafted into an official legislative bill and assigned to both House and Senate subcommittees. Many bills die at this point, but skillful action by the lobbyist for the Iowa Dietetic Association (IDA) helped ours gain approval by the house subcommittee and subsequently the House State Government Committee.

So far, the only opposition voiced had been that of individual Representatives opposed to any additional professional licensing. However, immediately prior to debate by the full House of Representatives, several Diet Center establishments became aware of the bill and hired two lobbyists and an attorney to oppose it on grounds that it would require them to hire dietitians to do weight control counseling. Because of the support this group was able to generate, the bill was amended to allow commercial weight control centers to provide counseling if their program had been approved by the Iowa State Department of Health. The Iowa Dietetic Association readily accepted this provision.

During debate in the House, Representative Hanson persuaded most of his colleagues that a title act defining "dietitian" and "nutritionist" but not limiting who could practice in these fields would offer sufficient public protection. A title bill was then passed 94-6 and sent to the Senate for consideration.

After a Senate subcommittee and full committee approved the title bill for full Senate debate, national representatives from Shaklee Corporation and the National Nutritional Foods Association (NNFA) voiced opposition. Shaklee's representatives wanted the bill to specify that the sale of food supplements would not be restricted, and that individuals marketing such products could continue to advise customers regarding their use. NNFA's attorney claimed in a letter to the Senate leadership that first amendment rights were being restricted by the bill.

IDA representatives struggled to retain the essence of the bill while seeking to accommodate these objections. An amendment finally evolved that did not restrict the sale of food and nutritional products but did limit the claims that could be made by individuals marketing such products. The limitation read, "Individuals who do not hold themselves out to be dietitians or nutritionists and who market or distribute food products as defined by the federal Food and Drug Administration may engage in explanation and education of customers regarding the use of such products for normal nutritional needs."

During the full Senate debate, the bill was amended to return it to a full licensure act rather than a title act, and this bill was sent to the House of Representatives for final consideration. However, time ran out. Anxious to adjourn before the Easter holiday and weary of debating into the small hours of the night, the House set a time limit. This enabled Representative Hanson to prevent further consideration of our bill by announcing that he would filibuster it to death.

IDA members who had worked so arduously for passage of a licensure act were very disappointed, but our mood is not one of despair. The opponents are now clearly identified, so it should be easier to develop strategies to contain them. Most important, perhaps, we gained visibility and recognition in the eyes of the legislators and "learned the ropes" of the legislative process.

Ms. Klopfenstein is Assistant Director of Food and Nutrition Services at Iowa Lutheran Hospital, Des Moines, Iowa.

COMING SOON!

Vitamin Victims Sue Harold Manner...

New Perspectives on Herbal Medicine

Hair Analysis Scheme Halted By FTC

"Chelation therapy" suits...

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Vitamin Victims Sue Harold Manner

Stephen Barrett, M.D.

In 1977, Harold W. Manner, Ph.D., achieved considerable notoriety by claiming to have cured cancer in mice with injections of laetrile, enzymes and vitamin A. What he actually did was *digest* the tumors by injecting digestive enzymes (the equivalent of sticking a red-hot poker into them), but this does not cure cancer. Since that time he has developed and promoted "metabolic" approaches which he claims can help cancer, arthritis, multiple sclerosis and genital herpes.

Manner became chairman of the biology department at Loyola University of Chicago in 1972. During a speech last year, he stated that his controversial beliefs led the school's administration to ask him to give up "metabolic research" or to resign. He resigned and is now president of the Metabolic Research Foundation of Glenview, Illinois.

Manner's methods are taught at "metabolic health seminars," held four times a year at various locations in the United States. He estimates that "200 physicians" are trained to use his methods, but about half are apparently chiropractors. In 1982, a reporter from WBBM-TV, Chicago, became "Metabolic Doctor #219" by attending a seminar in Los Angeles and donating \$200 to the Metabolic Research Foundation. (To indicate his professional background, the reporter used the initials "D.N.," which, he later explained, stood for "Doctor of Nothing.") Manner promised to refer 10 patients a year to him. Foundation doctors are supposed to report their treatment results to Dr. Manner after 21 days, 3 months, 1 year, 3 years and 5 years, but as far as I know, no summary has been published so far.

In 1983, Manner opened the Emerald Isle Clinic in Montserrat, West Indies, where treatment costing several thousand dollars is administered by a local medical doctor under Manner's supervision. The clinic has 40 beds, but Manner hopes it will eventually expand to 400.

During a recent telecast, Manner said that cancer is basically a disease of the immune system. He theorizes that every day "embryonic cells" become cancerous when they encounter carcinogens from such

sources as polluted air or "junk foods." If the body's immune system is working properly, these cancer cells are quickly destroyed; but if it is not, clinical cancer results. He also said that the immune system is the only thing that is going to eliminate the cancer, and that radiation and chemotherapy are bad because they destroy the immune system. His treatment is designed "to build up the immune system so it can restore the body's health."

Asked about his results, he stated that 85% of the cancer patients coming to the Emerald Isle Clinic have been told by their medical doctors that no more could be done for them. Of these "70% leave the clinic without cancer or with cancer no longer life-threatening—on its way down." He said that 85% of arthritis patients and over 90% of those with multiple sclerosis were similarly helped. However, he contradicted himself during the interview by saying, "We are not eliminating a cancer in 21 days, but are putting people on the right path." Patients are then referred to a local metabolic physician for follow-up care.

Manner, still based in Chicago, visits the Emerald Isle Clinic every three weeks and personally greets and helps plan treatment for each patient. During the 21-day stay, cancer patients receive enemas, herbal diets to produce twice daily bowel movements, and enzymes to supposedly make sure the stomach has the correct degree of acidity and the intestines the right degree of alkalinity. Patients also receive "massive doses of vitamin A and thymosine" plus daily "Manner cocktails" of dextrose, laetrile, vitamin C and DMSO given intravenously over 2-3-hour periods. Manner claims that even patients with rampaging cancer usually "feel like a new person within 1, 2, or 3 days." He also states that insurance companies pay for this treatment.

In 1982, *The New England Journal of Medicine* published the results of a clinical test of laetrile and metabolic therapy done at the Mayo Clinic and three other major cancer centers under the direction of the National Cancer Institute. Not one of the 156 patients studied was cured or improved in any way. However, a rebuttal statement issued by Manner claimed that the

treatment regimen was incomplete and that the dosages used were too low. His method, he said, involved daily dosages of vitamin C up to 85 grams and of emulsified vitamin A close to 1 million International Units.

Manner claims that such massive doses of vitamin A have no significant side effects. But Paulette Peters of Midlothian, Illinois, knows otherwise. According to suit papers filed in November 1983, her son Chuckie almost died as a result of intoxication from vitamin A administered with encouragement and reassurance from Dr. Manner.

In 1978, at the age of 7, Chuckie was diagnosed as having leukemia and began chemotherapy. In the hope of finding a nutritional method to counter side effects of the chemotherapy, the Peters' contacted "nutritional consultants" Gerry and Betty Phillips. After taking several "tests" and consulting with Robert Baldwin, M.D., of Carlsbad, Texas, the Phillips' recommended that daily dosages of laetrile plus 120,000 International Units of a vitamin A emulsion (said to bypass the liver) be administered to Chuckie. Encouraged by the Phillips' to consult Dr. Manner, Chuckie's mother heard him speak at a health convention, spoke to him afterwards, and was told that the vitamin A treatment was both effective and safe. At the meeting, she also purchased his book, *The Death of Cancer*, which contains similar claims. Manner advised her to discontinue Chuckie's chemotherapy. She didn't do this or use laetrile, but she did administer the recommended amounts of vitamin A.

About a year later, Chuckie developed headaches, extreme sensitivity to light, severe bone pain, mental confusion, and a 10-pound weight loss. According to the suit papers, he became unable to walk and touching his arms caused him to scream in pain. After thorough examination, doctors at the University of Chicago diagnosed vitamin A poisoning, and the vitamin A was stopped. Chuckie stayed in the hospital for about 15 days so his bone pain could be relieved with narcotics. Although he eventually recovered completely from the effects of vitamin A, it took two more months before he was strong enough to return to school.

Today, at age 12, Chuckie appears to have been cured of his leukemia and is determined to do his part "to stop other kids from being hurt as I was." He and his parents are suing Dr. Manner, the Metabolic Foundation, the Phillips' and Dr. Baldwin, and recently presented their story at the quackery hearings held by Representative Claude Pepper's House Subcommittee on Aging. The Peters' attorney is Steven Handler of Chicago. Dr. Manner and his Foundation are represented by Dilling, Dilling and Groneck, a law firm frequently involved in the defense of unorthodox practitioners.

Stephen Barrett, M.D., a practicing psychiatrist and consumer advocate, is author/editor of 12 books, including *The Health Robbers* (a comprehensive exposé of quackery), *Vitamins and "Health" Foods—The Great American Hustle*, *The Tooth Robbers: A Pro-Fluoridation Handbook*, *Shopping for Health Care*, and the college textbook *Consumer Health—A Guide to Intelligent Decisions*. An expert in medical communications, he is medical consultant to WFMZ-TV, Allentown, Pa., and Consumer Health Editor of *Nautilus Magazine* and of *Our Age*. He is also a scientific advisor to the American Council on Science and Health.

"CHELATION THERAPY" SUITS

Mrs. Joyce B. Haller of Allentown, Pa., has filed suit against an osteopathic physician who treated her with chelation therapy. According to Mrs. Haller, Conrad Mulfair, D.O., of Mertztown, Pa., failed to properly diagnose and treat her for arteriosclerosis (hardening of the arteries) of the legs. The suit papers state that Dr. Mulfair administered intravenous injections of ethylene diamine tetra-acetic acid (EDTA) every 3 or 4 days for 3 months. Before treatment started, Mrs. Haller was able to walk normally, but as time went on, her feet became discolored, her legs became cold, walking became so painful that she needed crutches. She decided to consult a vascular surgeon but fell on the way to his office, fracturing both legs. The suit also charges that bone repair could not be accomplished because "the EDTA had washed away the calcium of the bones of the lower legs and feet," that the bones had broken with little provocation, and that circulation of blood to the legs had become so inadequate that amputation of both legs was required. Chelation therapy is not approved by the FDA for the treatment of arteriosclerosis. Mrs. Haller states that she was not warned of the risks, consequences and possible complications of chelation therapy. Her attorney is James F. McBride of Philadelphia.

Suits are pending against two other doctors who use chelation therapy. In Kansas City, Missouri, a man whose right leg was amputated following chelation therapy has charged an osteopath with negligence and malpractice. And in Detroit, another osteopath is accused of contributing to a heart attack of a chelation patient.

QUESTION BOX

Q. What is the Food Institute?

A. The American Institute of Food Distribution, Inc.—more commonly referred to as the Food Institute—is a nonprofit group formed in 1928 to gather and report information on food marketing. Its 2,775 current members include growers, processors, brokers, wholesalers, retailers, food industry suppliers, food service buyers, advertising and banking executives, schools, publications, government agencies, and others concerned with the distribution of food products. Membership, which costs \$275/year, includes the weekly 24-page *Food Institute Report*, special reports, and access to the Institute's extensive library. The Institute's address is 28-12 Broadway, Fair Lawn, NJ 07410.

Q. Will Nutrition Forum focus primarily on food faddism, quackery and their promoters?

A. Many of our editors have a special interest in these topics; but we do plan to cover a wide variety of other subjects.

PERSPECTIVE ON HERBAL MEDICINE

Varro E. Tyler, Ph.D.

It seems surprising that in this era of high technology and wonder drugs, interest in herbal medicine is reawakening. This phenomenon is usually attributed to 1) disillusionment with the medical establishment—related to inaccessibility, high cost, and the failure to cure everything; and 2) the “back-to-nature” philosophy which is enormously popular throughout the world.

Unfortunately, science has not kept pace with public interest. Because of economic considerations, relatively little pharmacologic and practically no therapeutic research with herbs is presently being done in the United States.

Chain Drug Review has reported that in 1981, herbs accounted for \$360 million in sales, an amazing 10 percent of total sales of various natural products (or 20 percent if vitamins are eliminated from consideration). Literature, much of it devoted to the use of herbs, accounted for another \$145 million in sales (4% of the market). Since that time, herbs have increased in popularity, so these figures are quite conservative. It is a rare “health food” outlet which does not stock at least 20 single herbs, 20 combination formulas, and several creams, ointments, extracts, and the like. In some of the larger outlets, 100 to 200 different herbs are commonly available. The profit margin on herbal products in these outlets is 44 percent, a figure exceeded only by that for vitamins and supplements (48 percent). Thus there is considerable incentive to promote and sell herbs.

Americans are not alone in their interest in herbs. Recent surveys in Germany revealed that nearly 76 percent of the women interviewed drank herbal teas for supposed medicinal and health-producing effects. An amazing 52 percent of German adults turned first to self-treatment with a natural product (herbs, extracts, or derivatives) for their illnesses.

When sold as foods or food additives, herbs cannot bear any indication on the label that they are “good” for any disease or condition. Doing so would place them in the category of drugs under the control of the Food and Drug Administration and therefore illegal to market unless approved by the agency as safe and effective. Consequently, to inform people about their uses, their promoters have made available a wide variety of litera-

ture ranging from one-page flyers and paperbacks to large, well illustrated, expensively bound books. Much of this is a rehash of the writings of 16th and 17th century authorities such as Nicholas Culpeper and John Gerard.

These old claims are not only extremely unreliable; they also fail to take into account the extensive chemical and toxicological data about plant drugs which have accumulated in the intervening centuries. Such studies have shown that plant materials contain a wide variety of toxic constituents, including carcinogens, cocarcinogens, teratogens, photosensitizers, allergens, cellular respiratory inhibitors, abortifacients, irritants, and the like, some of which are quite insidious in their actions. Uninformed use of herbs and herbal products is therefore best avoided.

That is not to say, however, that all herbs are harmful or even nonhelpful; many are quite useful when properly employed. Three categories of utility are generally recognized:

1. *Safe and effective for self-treatment under appropriate circumstances.* Examples include chamomile as an anti-inflammatory agent, fresh aloe gel for minor abrasions and burns, and valerian for its tranquilizing properties.

2. *Potentially harmful.* These include comfrey and coltsfoot with their content of carcinogenic pyrrolizidine alkaloids, sassafras containing safrole, also a carcinogen, and pokeroor with its toxic saponins and other constituents.

3. *Neither specifically helpful nor harmful.* These include such plants as alfalfa for arthritis, burdock for skin disorders, and chaparral as an anticancer agent. However, the use of herbs in the last category may prevent an ill person from seeking competent medical treatment and thereby cause even more serious illness. In addition, they are always harmful to the pocketbook.

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs.

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HAIR ANALYSIS SCHEME HALTED BY FTC

A & A Laboratory, the largest advertiser of hair analysis to the American public, is being prosecuted by the Federal Trade Commission for making false claims about the procedure. Based in Ft. Washington, Maryland, the company has operated for more than three years as Holistic Hair Analysis, Micro Trace Minerals, New Age Nutritional Supplement Co., and Unique Concepts Advertising. On August 8, 1984, a federal judge for the Eastern District of Virginia issued a temporary restraining order against the company, its subdivisions, and its principals, Arthur F. Furman, his wife Ethel Furman, and their son Alan Furman. The judge also froze the assets of the parties involved to provide for possible consumer redress.

Since 1981, defendants have been offering hair analysis for \$36.95 through ads in various magazines and at "holistic" health fairs around the country. The ads promise information to help "balance body chemistry" and to "clearly recommend which supplements to take and when to take them." Those who submitted specimens would receive a 3-page computer printout purporting to indicate hair levels of 18 minerals as well as deficiencies and excesses for which supplementation is needed. The reports also contain "mineral ratios" which, if "high" or "low," are supposedly associated with disorders such as diabetes, arteriosclerosis, hypothyroidism, infertility and mental problems. The reports and recommendations were ascribed to "Dr. Arthur F. Furman, Director of Medical Services."

The lab's services were also advertised to health food retailers and chiropractors who could collect specimens and obtain the tests for \$25. A company letter to retailers called hair analysis "an ideal way to aid your customers and increase your profits."

In support of its complaint, the FTC filed affidavits from experts stating that: 1) hair analysis tests do not provide a basis for determining the mineral levels in consumers' bodies; 2) even if multi-elemental spectroscopic analysis of hair is conducted accurately, it does not provide a reliable basis for identifying an individual's mineral deficiencies or excesses; 3) hair analysis does not provide a reliable basis for recommending dietary supplements; and 4) reports of multi-elemental hair analysis can mislead people into getting treatment that is unnecessary, inappropriate and unsafe. Documents collected by the FTC during its lengthy investigation also note:

- Arthur Furman is not a medical doctor but a former dentist who permanently surrendered his license to practice dentistry in Maryland following a 1982 conviction for mail fraud. In that case, Dr. Furman was charged

with scheming with several patients to obtain money from insurance companies by submitting false reports of dental repairs following nonexistent accidents. After pleading guilty to one count of mail fraud, Furman was fined \$1,000, placed on 5 years' probation, and ordered to perform 1,000 hours of community service.

- A & A Laboratory was never licensed by the State of Maryland to operate a clinical laboratory and thus could not legally perform hair analyses or any other type of clinical laboratory tests.

- A survey of defendants' testing services was conducted by the FTC with the help of Dr. Richard M. Jacobs, Chief of the Nutrient Toxicity Section, Division of Nutrition, of the FDA Center for Food Safety and Applied Nutrition. For this study, six identical 1-gram samples were prepared from a large hair specimen and submitted under different names to Trace Mineral Systems for analysis. The results were widely inconsistent. "From report to report," said Dr. Jacobs, "test values for the same elements varied by an average of 830%, and from a minimum of 39% to as much as 5,860% for individual elements . . . Moreover, eight of the elements tested should not have been reported at all because they were not found by the FDA in quantities that are accurately and reliably reportable." Dr. Jacobs also called Trace Mineral Systems' practice of relating mineral ratios to serious disease "totally devoid of scientific merit."

- The recommendations for supplementation were also quite varied. Each of the six reports recommended a supplement of either molybdenum, zinc or chromium. Three reports recommended silicon, two recommended iron and two recommended potassium. Three suggested a supplement regimen "for removal of toxic metals," and all six recommended that a variety of vitamin and non-vitamin substances be consumed to "enhance optimal health." Order forms were sent separately to enable customers to purchase the recommended supplements from the New Age Nutritional Supplement Company. Repeat analyses were suggested to measure progress in four months.

According to an FTC staff attorney, the defendants ceased operations following issuance of the temporary court order. The agency still intends to pursue a permanent injunction. However, it is not clear whether action will be taken against the many commercial laboratories which do not advertise directly to the public but perform hair analyses at the request of licensed health practitioners.

REDRESS FOR FOOD SUPPLEMENT CUSTOMERS

The Direct Selling Association (DSA), represents some 150 firms whose goods and services are marketed by independent salespeople through person-to-person contacts. At least ten of the companies sell nutritional supplements: Amway Corporation, Better Living Products, Inc., Care Free International Inc., Chambre' Cosmetic Corporation, Fortunate Corporation, Heritage Corporation of America, Multiway Associates, Neo-Life Corporation of America, and Shaklee Corporation. DSA's Code of Ethics forbids deceptive or unlawful practices and states that any offer of products for sale shall be truthful as to value.

Distributor agreements for food supplement companies typically state that the company is not responsi-

ble for any claims made by a distributor which are not authorized by the company. (This clause is intended to protect the company if a distributor makes illegal therapeutic claims.) But DSA's Code requires its member companies to take responsibility for their independent salespeople for purposes of Code complaints. According to a recent DSA news release, dissatisfied customers can receive prompt attention by complaining to the DSA Code Administrator, Direct Selling Association, 1730 M St., N.W., Washington, DC 20036. [Nutrition Forum would appreciate a copy.] Pending final resolution of the complaint, the Administrator can even reimburse the complainant out of a special fund.

WEIDER FIRM CHARGED BY FTC

The Federal Trade Commission has filed an administrative complaint against Weider Health and Fitness Inc., and its president, Joseph Weider, of Woodland Hills, California. Ads for Weider products have claimed that its *Anabolic Mega-Pak* is "scientifically created," produces "faster-than-ever-before muscle growth" and is a "Natural Steroid Replacement Kit You Can Live With." Ads for its *Dynamic Life Essence* have claimed that it is superior to "conventional protein sources to muscle up," is "unlike any other amino acid source in the world," and that "Life Essence Builds Bigger Muscles—Faster!"

The *Anabolic Mega-Pak* contains five pills or capsules containing various amino acids, minerals, vitamins and herbs. A 30-day supply costs \$24.95. *Dynamic Life Essence* consists of capsules or powders of amino acids, which can cost up to \$60 for a 30-day supply.

Weider has been advertising these products primarily to bodybuilders and weight trainers, many of whom believe anabolic steroids increase muscularity and strength. These drugs have been banned by the international sports community because they give users an unfair competitive advantage and have many dangerous side effects. Weider claims its products produce results similar to those of anabolic steroids without their dangerous side effects. The company advertises in two major bodybuilding magazines it publishes through subsidiaries, *Muscle and Fitness* and *Flex*.

According to the FTC complaint, Weider misrepresented that:

- a typical user would achieve greater muscular development over the course of a few months of a weight training program than a non-user of these products;
- a typical user would achieve at least the muscular

development of a non-user, but in a shorter period of time;

- a typical user would achieve results equivalent to those bodybuilders generally believe are achievable through use of anabolic steroids—rapid and substantial muscular development;
- the products would stimulate greater than normal production or release of human growth hormones, resulting in faster or greater muscular development;
- *Dynamic Life Essence* is unlike any other amino acid source in the world;
- the *Anabolic Mega-Pak* was developed by a team of the world's most renowned nutritional biochemists, exercise physiologists and trainers.

The Federal Trade Commission issues a complaint when it has reason to believe that the law has been or is being violated. Such action marks the beginning of a proceeding in which the allegations will be ruled upon by an administrative law judge after a formal hearing. The Commission noted that it might seek a court order for consumer redress or refunds in this case.

Years ago, Mr. Weider had several brushes with the Postal Service as a result of false representation of weight reduction plans sold by mail. His current food supplement line includes other questionable products: *Dynamic Super Stress-End*, *Dynamic Power Source*, *Dynamic Driving Force*, *Dynamic Fat Burners*, *Dynamic Liver Concentrate Energizer*, *Dynamic Sustained Endurance*, *Dynamic Recupe*, *Dynamic Body Shaper* and *Dynamic Muscle Builder*. None of these seems capable of doing what their names suggest, and none contains any nutrients not readily obtainable from a balanced diet.

Book Reviews

Title: *Your Personal Vitamin Profile* (1982)

Author: Dr. Michael Colgan

Publisher: Quill, New York

Price: \$7.95, softcover

Reviewed by: Stephen Barrett, M.D.

The book's jacket claims that the author's work "has been recognized throughout the world," but it doesn't say by whom. The book's foreword indicates that the author has had training in engineering, psychology and physiology, but it doesn't tell what field his doctoral degree is in. The table of contents suggests that vitamin supplements can inhibit aging and prevent heart disease, cancer, diabetes—and even herpes.

The warning on the copyright page is even more curious: "Any application of the advice herein is at the reader's sole discretion and risk. Readers are urged to consult the medical references given to decide for themselves the adequacy of the conclusions reached in the book." Actually it would be easier to ask any sane doctor or registered dietitian. They'll tell you that the conclusions are bunk. The author cites hundreds of reputable reports, but the scientists who wrote them would certainly disagree with his advice!

To determine your "individual biochemical equation," the author suggests starting with a basic 28-nutrient formula and adding various amounts of these and other nutrients for each positive answer to more than 50 questions. For example, a 125-lb. woman who lives in a big city, takes the Pill, and gets colds is advised to take 1500+1000+500+1000 mg of vitamin C and 300+0+100+100 mg of vitamin E daily. The author seems unaware that 4000 mg daily of vitamin C can cause diarrhea or that 500 mg daily of vitamin E can cause fatigue. Most readers who follow the prescribed schedule exactly for each nutrient would waste hundreds of dollars per year.

Title: *Recalled by Life* (1982)

Author: Anthony J. Sattilaro, M.D.

Publisher: Avon Books, New York

Price: \$3.50, paperback

Reviewed by: William T. Jarvis, Ph.D.

This very readable book details the fortunate recovery from cancer of 47-year-old physician Anthony Sattilaro. It is controversial because of the degree of credit given to "macrobiotic" eating. Sattilaro underwent extensive orthodox treatment but concluded that his dietary practices were more effective.

Sattilaro states that his story "is not meant to serve the interests of any single group or so-called movement," but he strongly endorses both the diet and the philosophy of Michio Kushi, America's leading macrobiotic proponent.

Only an insensitive reader would fail to empathize with Dr. Sattilaro as he simultaneously faces his father's death from prostatic cancer and his own poor prognosis

from the same disease. However, anyone familiar with quackery will also be concerned about the story's potential for abuse. Although Sattilaro is explicit that "anecdotal evidence such as my own story is not regarded as scientific proof of anything," it is well known that patients facing life-threatening illnesses tend to listen selectively and grasp for anything offering even a remote chance for recovery. Moreover, the book's jacket says flatly that the diet worked after surgery and chemotherapy failed.

Macrobiotic zealots are bound to make the most of Sattilaro's experience in their promotions. Sattilaro himself reports that after his story appeared in the August 1980 *Saturday Evening Post*, Kushi's East West Foundation received over 35,000 letters. Additional thousands have flocked to hear him lecture, and television publicity for his book has reached millions more.

Recalled by Life provides a fascinating account of the conversion process at work. Those desiring deeper insight into how people come to believe in incredible things should read William Sargant's *Battle for the Mind: The Physiology of Conversion and Brainwashing* [Harper & Row, 1959] and see how well Sattilaro's story fits the mold. His psychologically shattering experience combines with feelings of guilt and low self-esteem to set him up for macrobiotics with its metaphysics, its simplistic explanations, its social support system, and the symbolism of its dietary regimen. Bad-tasting food provides an opportunity both for penance and a sacrament. Ritual chanting and meditation do their part to touch deep emotional chords. Sattilaro finally accepts a system poles apart from his medical beliefs—the reaction Sargant describes whereby vulnerable converts come to love what they would previously have rejected. Sattilaro reveals much inner conflict between his emotional and rational selves as he analyzes his feelings as a patient spared a terrible fate and as a physician familiar with the uncertainties of clinical medicine. It is clear that his experience was as much religious as medical.

Sattilaro's stated purpose for publicizing his story is to stimulate research into macrobiotic eating as a cancer treatment. But no responsible researcher would permit patients with a chance of recovery through conventional therapy to be treated with diet alone or to serve as a no-treatment control group, as Sattilaro proposes. Moreover, he exhibits only superficial knowledge of the epidemiological literature on diet and cancer.

What will the future bring? Will Sattilaro eschew conventional therapy altogether? Will he eventually rebuke the irresponsible use of his story? Will his enthusiasm stimulate a scientific test of macrobiotics? And if such a test fails, will he accept its results? At least one thing seems certain: Dr. Sattilaro's remarkable case will reverberate through the media for years to come.

Dr. Jarvis is Professor of Health Education at Loma Linda University and President of the National Council Against Health Fraud, Inc.

Briefs

Dangerous new strategy! James R. Johnson, Ph.D., head of the National Nutritional Foods Association's "Certified Nutritionist" program, has suggested a new strategy to undercut the drive for laws to protect the public against unqualified "nutritionists." Writing in the October 1984 *Health Store News*, he has advised members of the natural foods industry to "go to the county seat, the same place where you got your retail occupational license and tell them you want to take out a license as a Nutritionist. They won't know anything about it and there are usually no prerequisites. It amounts to filling out some forms, and paying some money. Make sure the license states 'Nutritionist' or 'Nutritional Counselor.' If it happens, you will be 'grandfathered' in under the law, or if it doesn't happen, you will have built a little more prestige." He also advises retailers to teach courses in their stores or through adult education programs at local school systems.

Possible FTC reversal. The Federal Trade Commission is reconsidering its 1971 regulation that retail food stores have adequate amounts of advertised items in stock or readily available. The rule was adopted to prevent unfair "come-ons," but an FTC staff report has speculated that in the long run, compliance with the rule may cost consumers more than it saves. Public comments should be addressed to the Secretary, Federal Trade Commission, Washington, DC 20580.

Sugar-hyperactivity link unsupported. Twenty-one boys considered by their parents to have adverse behavioral reactions to dietary sugar were challenged with glucose, sucrose and a placebo (saccharin) in a series of double-blind tests. Neither sugar appeared to produce behavioral excitation. Trained observers found no consistent or significant changes in behavior, attention span or memory. For the group as a whole, sugar ingestion actually produced a slight but significant decrease in motor activity as measured with a belt-worn device during the first three hours after ingestion. The researchers believe that these data cast doubt on the significance of sugar intake in causing behavioral disturbance. Reprints of the study can be obtained by writing to Dr. Judith L. Rapoport at the National Institute of Mental Health, Building 10, Room 3N204, 9000 Rockville Pike, Bethesda, MD 20205.

Textbook series changes publishers. *Contemporary Issues in Clinical Nutrition* is a series of textbooks for clinical nutrition professionals, produced under the supervision of Richard S. Rivlin, M.D., Chief of the Nutrition Service at Memorial Sloan-Kettering Cancer Center. The first 7 volumes were published over the past four years by Churchill Livingstone Inc., 1560 Broadway, New York, NY 10036. Beginning this year with Volume 8, *Nutrition and Diabetes*, the publisher will be Alan R. Liss, Inc., 150 Fifth Ave., New York, NY 10011.

Milk for missing kids. More than 100 dairies have agreed to display photographs of abducted children on millions of milk cartons. A major manufacturer will display a total of 24 pictures of these children on millions of cartons distributed to dairies around the country. The program is an offshoot of local efforts by dairies in Iowa, Illinois and California. In California, a 13-year-old girl returned home after seeing publicity about her photo on cartons of milk from the Alta-Dena dairy [NF 2:1-4].

Fluoridation law upheld. The Illinois Supreme Court has upheld a state law mandating fluoridation of public water supplies, apparently ending a challenge begun 16 years ago by the Illinois Pure Water Committee. Two years ago a circuit court judge ruled the law unconstitutional on the theory that the state had not studied fluoridation's long-range effects adequately. However, the law remained in force while state officials appealed this decision. The state supreme court said that plaintiffs had failed to prove the law so unreasonable that it exceeded the government's power to establish public health regulations. No court of last resort has ever ruled against fluoridation regardless of the issues involved.

Shaklee income drops. Reversing a long record of uninterrupted growth, Shaklee Corporation reported sales of \$459.1 million for the year ending September 30, 1984, a 15% drop from fiscal year 1983. Gross sales of nutritional products were \$343.9 million. Net income was \$13.2 million, but \$10 million of this came from international sales. The company attributed the drop to increased competition and reduced public interest in doing part-time sales work. To remedy the situation, the company has been trying to increase its visibility by: 1) establishing a scientific advisory board; 2) advertising to medical doctors; and 3) supporting the U.S. Ski Team. According to the company's annual report, "These activities are helping the public to more closely associate Shaklee with nutrition, fitness and well-being." Distributor incentives have also been increased.

Free publication. *Contemporary Nutrition*, which provides an excellent referenced analysis of one topic each month, is available free-of-charge to food and nutrition professionals. Back issues cost \$4.00/set. Requests should be sent to Gloria T. Florey, Production Manager, General Mills, P.O. Box 1113, Dept. 65, Minneapolis, MN 55440.

New board. The American Society for Parenteral and Enteral Nutrition has established an independent National Board of Nutrition Support Certification to certify health professionals in the field of intravenous and tube feeding of patients. The first examination will be offered to nurses in January, 1986.

Cancer quack convicted. A 77-year-old, self-styled "healer" who administered colored light therapy, vigorous abdominal massage, and a diet restricted to lemonade, salt water and herb tea to a 24-year-old leukemia victim has been convicted of felony practicing medicine without a license. Evidence at the trial suggested that the patient had died as a result of abdominal bleeding caused by the massage. Upholding the verdict, the California Supreme Court noted that conviction for involuntary manslaughter could properly have been considered, but the trial judge had not suggested it in his instructions to the jury. The defendant had been convicted in 1960 of practicing medicine without a license. [People v. Burroughs, Crim. 23141 (Super. Ct. No. 58541), Supreme Court, Calif., April 19, 1984.]

Alcohol's effect on the fetus. A study of 31,604 pregnancies published in the October 12, 1984 *Journal of the American Medical Association* has found that the number of drinks a pregnant woman takes daily is inversely related to her infant's birth weight. After adjustment for other risks (such as cigarette smoking), the data showed that "consuming at least one to two drinks per day had a substantially increased risk of producing a growth-retarded infant." Offspring of women who had 3 to 5 drinks daily averaged about 6 ounces lighter than those of complete abstainers, while offspring of mothers who had less than one drink daily were about half an ounce lighter. While speculating that "an occasional drink has only a trivial effect on intrauterine growth," the authors caution that a "safe" level has not actually been established. An editorial in the same issue suggested that, "Women who are pregnant and wish to have healthy babies should not drink alcohol at all."

Measures to reduce drunk driving. The Allentown *Call-Chronicle* reports that public pressure and lawsuits holding tavern owners responsible for injuries and deaths caused by intoxicated patrons are changing tavern policies throughout Pennsylvania. Fewer visibly intoxicated persons are being served. At many establishments, free food has replaced free drinks and "two-for-one" specials at "happy hours." One bar is serving high-protein and high-fat foods (which slow down alcohol absorption into the body). Another offers free soft drinks to "designated drivers" to encourage one person in each group to remain sober. Liquor liability insurance premiums have been rising rapidly and many companies have stopped writing them.

"Pill" prevents anemia. Oral contraceptives improve menstrual regularity and lighten blood flow for many users. The National Institute of Child Health and Human Development estimates that use of the pill prevents 27,000 cases of iron deficiency each year. [Source: *Facts About Oral Contraceptives*, 1984.]

Spotting the excessive drinker. A 4-question test appears to offer a simple way to detect alcoholism. The questions are: 1) Have you ever felt you ought to cut down on your drinking? 2) Have people annoyed you by criticizing your drinking? 3) Have you ever felt bad or guilty about your drinking? 4) Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover? A controlled study of acknowledged alcoholics and heavy drinkers found that almost all answered two or more questions affirmatively. [JAMA 252:1905-1907, Oct. 12, 1984]

Poisoned Easter eggs. Hard-boiled eggs cooled in water and not kept refrigerated were the source of staphylococcal food poisoning in more than 300 children who participated in an Easter egg hunt. A report in the August 24/31, 1984 *Journal of the American Medical Association* indicates that disease-causing bacteria were transmitted to water used to cool the eggs by a cook, and the eggs were then stored at room temperature for 3 to 5 days. Researchers who conducted laboratory studies following the outbreak concluded that although unbroken and uncooked eggs are quite resistant to bacterial invasion, cooked eggs provide an ideal growth medium. Therefore cooked eggs should be handled as cleanly as possible and kept refrigerated until they are consumed.

Aspartame update. After interviewing more than 500 aspartame users who had complained to the FDA, the U.S. Centers for Disease Control (CDC) has concluded that no specific pattern of symptoms was clearly related to aspartame use. Of the many different symptoms reported, CDC found that "the great majority were mild and are common in the general populace." Symptoms occurring after aspartame consumption could be coincidences, the results of suggestibility, or some as yet unidentified individual sensitivity. Aspartame's manufacturer, G.D. Searle and Co., is designing protocols for clinical studies to make further checks between the reported symptoms and use of its product.

Swimming and weight control. According to Grant W. Gwinup, M.D., professor of medicine at the University of California (Irvine) College of Medicine, swimming will not help obese patients lose weight, but at least 30 minutes of "huffing and puffing" from aerobic exercise will. He said this recently at the annual meeting of the California Academy of Family Physicians after studying obese patients randomly assigned to daily swimming, cycling or walking without any consideration of dietary intake. Only the swimmers did not lose weight. Dr. Gwinup also noted that weight loss is difficult to maintain, possibly because the hypothalamus monitors body fat and tries to keep the amount constant. "Inside every thin man is a fat man wanting to come back," he said.

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THE SCIENCE AND POLITICS OF RAW MILK Odom Fanning

Slogans vied with science at an informal FDA hearing on raw vs. pasteurized milk held in Washington, D.C., on October 11th and 12th. The hearing's purpose was to help the Secretary of Health and Human Services (HHS) decide whether new rule-making is needed.

Pasteurization is accomplished by heating milk for specified time/temperature combinations, most commonly 161°F (71.6°C) for 15 seconds. This kills microorganisms that can transmit disease to humans through milk, and also kills almost all spoilage bacteria. The process does not sterilize milk, but does make it safe to drink and extends shelf life.

Unpasteurized (raw) milk may be certified or uncertified. Certified raw milk (CRM) is the trademark designation of milk produced according to standards set by the American Association of Medical Milk Commissions, an industry organization. CRM is produced by three large dairies and can be sold through retail food stores in 24 states. In 6 other states, sale is limited to direct farm sales, while in 20 it is prohibited. Uncertified raw milk is typically produced in small quantities by individual dairy farmers and sold on the farm or by home delivery.

Even though a final regulation mandating pasteurization was proposed by the FDA 11 years ago, it was never issued. Last April, Public Citizen's Health Research Group (HRG), an organization founded by Ralph Nader, petitioned HHS to ban all raw milk sales in the United States. Then in September, joined by the American Public Health Association, HRG filed suit in U.S. District Court for the District of Columbia to force the agency to respond.

The hearing was held before FDA Commissioner Frank E. Young, M.D., Ph.D., Walton B. Read, M.D., of the FDA Bureau of Foods, and HHS attorney Fred Degman. Witnesses were not allowed to question the panel or one another—but were interrogated by the panel after giving testimony of two pre-announced questions:

- Is the consumption of raw milk, including certified raw milk (CRM) and raw milk products, of public health concern?

- Would requiring pasteurization of raw milk, including CRM and such products, be the most reasonable regulatory option?

The Commissioner also asked witnesses whether labeling CRM as to its risks would provide adequate protection for the public. Should he make a finding of fact that consumption of raw milk is of public health concern, he would then make a recommendation to the HHS Secretary—presumably for either compulsory pasteurization or mandatory labeling of milk in interstate commerce. Before a proposed regulation could be published, it would have to be approved by the Office of Management and Budget—and presumably the President. A final regulation is unlikely to be developed and take effect within the next year.

The political strength of raw milk advocates can be judged by the string of witnesses produced for the FDA hearing by Alta-Dena Certified Dairy, of City of Industry, California. According to a press kit distributed by the company, it is the largest producer-dairy in the world. It spans 600 acres and has 8,000 milking cows, 7,000 stock cows, 800 employees, and annual sales of \$100 million. Twenty percent of its production is sold as raw milk or raw milk products. About 90% of all raw milk sold in California comes from Alta-Dena, which also funds the Los Angeles County Milk Commission, a certifying body.

Press reports assign to Alta-Dena a high political profile in California, where between 100,000 and 200,000 residents are said to drink certified raw milk or feed it to their children daily. The dairy and its supporters once marshalled 17,000 letters to the governor, against only a handful opposing its position.

One witness at the hearing was Harold Stueve, Alta-Dena's founder and co-owner. More than 60 members of the Stueve family are said to work for the company. Another witness was Rep. William E. Dannemeyer (R-Calif.), who was an attorney for Alta-Dena from the early 1960s until he entered Congress in 1978. Last Spring Dannemeyer got 36 of the other 44 Congressional representatives from California to join him in signing a

letter to HHS urging FDA to back off from regulating certified raw milk. (Some have since withdrawn their support.)

"This ostensibly is a battle over public health," he testified at the hearing. "Disabuse yourself. It's a battle over the politics of public health. We are in this controversy because the medical profession for decades has produced doctors who are taught that all milk should be pasteurized. They don't get into the whys. It is only natural that people who achieve positions of responsibility then base their actions on what they were taught. These are dedicated people who believe that milk should be pasteurized."

Dannemeyer traced the history of opposition to Alta-Dena and CRM from 1966 and said that the public has lost respect for public health authorities in California in regard to this issue. He claimed that health department records show that 3.6 million human cases of salmonellosis were reported between 1971 and 1982 in California, and that almost half of them were attributed to food service establishments, most of the remainder to meat and poultry, and only 103 to certified raw milk. He asked, "If it is the intention of public health authorities to eliminate *Salmonellas* from humans in the United States, how is it they ignore all except CRM?"

Another witness for Alta-Dena was Joseph L. Fleiss, Ph.D., head of the Division of Biostatistics at Columbia University's School of Public Health. He described an "odds ratio" scheme for controlled retrospective studies, with relative risks from 1 to 15. A value of 1 means "no associated risk." A value of 5 means "important public health risks," while 6 to 15 mean "probable cause and effect." Asked to rate certified raw milk on that scale, Dr. Fleiss responded: "My experience is that, if all things were known, it would not come down to 1, it would come down to 5."

Another Alta-Dena witness was John M. Douglass, M.D., an internist from Los Angeles. "Isn't it better to maintain control in the marketing of certified raw milk than to lose control?" he asked. "We might want to label it with some of the pros and some of the cons. That gives people freedom of choice. The label should be informative. Some people tolerate raw milk better than others. It may contain deleterious antigens."

Also testifying was William Campbell Douglass, M.D. (no relation to John Douglass), president of the Douglass Center for Nutrition and Preventive Medicine and author of *The Milk of Human Kindness—Is Not Pasteurized*. "For rapid, healthy growth in young children, there is no substitute for raw, certified milk," he asserted. "Pasteurized milk is dead milk, which will rot on standing. One of nature's most perfect foods has been murdered. At the turn of the century, 5,000 babies died annually from drinking raw milk, but instead of requiring dairymen to clean up their act they required pasteurization. Today, milk producers are clinging to outdated methods such as heat treatment to cover up sloppy production methods." [Editor's note: Pasteurization is not the only public health measure opposed by

Dr. Douglass. A recent article by him in the National Health Federation's monthly magazine states that chlorinated-fluoridated water causes cancer, chronic fatigue, atherosclerosis, allergy, heart attacks and strokes. Clinton Ray Miller, NHF's Washington lobbyist, also testified.]

Paul M. Fleiss, M.D. (a cousin of Joseph L. Fleiss), a pediatrician from Hollywood, California, admitted that he had been "repelled" to discover that in Hollywood there was a large group of consumers of raw milk. For a number of years, he said, he tried to dissuade mothers from feeding their infants and children a product with such a bad reputation. Finally, he investigated for himself, read the literature, visited dairies, "became a convert," and now heads the Los Angeles County Milk Commission.

"I have a very busy pediatrics practice, and many mothers tell me that their children do better on raw milk," he said. "Some dairies are heating milk far beyond the heating required for pasteurization—they're sterilizing it. This destroys some important nutrients. And you can taste the difference."

He also claimed that immunoglobulins and enzymes such as lactases and lipases are destroyed by sterilization. "Raw milk contains lipase, free fatty acids, which when absorbed help the body utilize fat better," he explained. "This is why some allergies might be due to pasteurized milk."

Another witness at the hearing was Mrs. Sandy Gooch, author of the book *If You Love Me, Don't Feed Me Junk*. She identified herself as the proprietor of a California health food store which in June sold 5,319 gallons of raw milk, and as vice president of the Natural Foods Network [NF 1:16], which she said has three million customers nationwide. She asserted that she knew of no report of illness ever attributed to raw milk consumption.

Other supporters of raw milk marketing said repeatedly that mandatory pasteurization would threaten consumers' "freedom of choice." One contended that everybody knows that cigarettes cause cancer, but government has not banned them, and everybody knows that passive restraints in automobiles save lives, but government has not mandated them. Another said, "We tried prohibition (of liquor) once, and it didn't work. Is raw milk next?"

The witnesses against raw milk were equally outspoken. One was public health veterinarian Morris E. Potter who, with three others from the U.S. Centers for Disease Control (CDC), published a state-of-the-art report on the hazards of unpasteurized milk in the October 19th *Journal of the American Medical Association*. The report lists seven supposed benefits claimed by raw milk advocates, including higher nutritive value, reduced incidence of tooth decay, enhanced resistance to disease, and enhanced fertility. Citing 65 references, however, Potter et al. conclude that no significant nutritional difference has been found between raw and pasteurized milk in numerous studies in both animals and humans.

The report explains that pasteurization affects six milk constituents with known nutritional benefits. Three vitamins for which milk is a minor source (thiamine, B₁₂, and C) are reduced about 10%. About 6% of the calcium in milk is rendered insoluble, about 1% of milk protein is coagulated, and some fat globules are dispersed; but these changes have no effect on the bio-availability of these three nutrients.

On the public health issues, the CDC group states that, "Abundant evidence has shown that raw milk serves as the source of bacteria that cause outbreaks of disease in humans: in recent years, most frequently salmonellosis and campylobacteriosis. In the investigations of such outbreaks, the epidemiologic evidence, combined with knowledge about the occurrence of specific pathogens in cattle and the isolation of some of these pathogens from raw milk, leaves no doubt that raw milk is a vehicle for disease in humans."

The main symptoms of these infections are cramps, diarrhea and fever, but *Salmonella dublin* presents a special problem. This relatively rare organism is known to be host-adapted to cattle and is more likely to be identified as being derived from raw milk than are the more commonly isolated types of *Salmonellae*. The authors note that, "Numerous studies in multiple locations have confirmed the role of raw milk in the transmission of *S. dublin* to humans . . . *S. Dublin* infections are of particular concern because the associated illness tends to be severe"—and is not limited to the digestive tract.

At the FDA hearings, Dr. Potter added that, "From 1980 to 1983, 53% of the foodborne outbreaks of *Campylobacter* reported to CDC were associated with drinking unpasteurized milk. The reported rate of isolates identified is 20 times greater in states that permit the sale of unpasteurized milk."

According to CDC, outbreaks of campylobacteriosis associated with raw milk consumption have been reported recently in Arizona, California, Colorado, Georgia, Kansas, Maine, Oregon and Pennsylvania.

Michael Osterholm, M.D., Minnesota Department of Health epidemiologist, described the investigation of a current mysterious disease outbreak in that state. After months of investigation, in which 94 families have been contacted, the investigators know only this: The causative agent has not been identified, but the method of transmission is undisputed. Unpasteurized milk produced by one dairy had been drunk by all 122 victims during the three weeks before onset. Some have been sick for months. For those under age 18, the median is 76 days' duration. Children have recovered more

quickly than adults, but only 11 (9%) have fully recovered. The producing dairy has voluntarily stopped selling raw milk products.

"All cases of which we are aware are associated with raw milk consumption, and there have been no new cases since the implicated milk product was withdrawn," said Dr. Osterholm. "This is no *S. campylobacter*. It is not a virus or a fungus. It stumps the best experts."

Raw milk's growing popularity as a "supposed health food" is of concern to the American Academy of Pediatrics, said another witness, John Bolton, M.D., a San Francisco pediatrician.

The Academy "has reviewed both the nutritional properties and the safety records of raw milk and has found that the risks outweigh the benefits," he declared. "There are no benefits of raw milk that would outweigh the extreme risk of infection that sometimes follows feeding raw milk products to infants, children with malignancies, and children with problems involving the immune system."

He said that, since 1977, 192 isolates of *Salmonella* have been made in certified raw milk in California. This milk is also transported across state lines by distributors. According to Dr. Bolton, "The most recent finding on September 28, 1984, involved 4,000 gallons of certified raw milk distributed to consumers and retail outlets." Press reports prior to the hearing indicate that California health officials had recalled Alta-Dena's raw milk products 17 times since 1977 because state tests found *S. dublin* in samples. The incident referred to by Dr. Bolton occurred just hours before Gov. George Deukmejian vetoed a controversial bill that would have freed the dairy from control by state regulatory agencies. The bill would have allowed the sale of CRM shown by state labs to harbor salmonellae. Another recall involving Alta-Dena and two other California dairies has occurred since the FDA hearing.

Dr. Bolton exhibited a chart which analyzed the 123 cases of *S. dublin* reported in California in 1983. It showed 51 patients who used raw milk including 44 who used it from Alta-Dena. Only 10 of the 51 had been exposed to such other possible sources of *S. dublin* infection as raw eggs or raw or rare meat. The list of pre-existing diseases in these patients "reads like the index to a pathology textbook: cancer, leukemia, lymphoma, cirrhosis, lupus, AIDS, etc.," he said. "This points out one of the most tragic aspects of this problem. Seriously ill patients purchase a so-called 'health food' only to be exposed to *S. dublin*. Raw milk is even advertised as a basic food for invalids."

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In response to certified raw milk producers' claim that the product is made safe by the practice of spraying the udders of the cattle with an antiseptic solution and then using two clean towels to wipe off, Dr. Bolton stated categorically that, "Potentially harmful bacteria still reside on the udders and inside some of the cattle as well."

Advocates of raw milk consumption point to other foods such as poultry which are frequently contaminated with *Salmonellae*. "What they fail to point out," said Dr. Bolton, "is that these foods are intended to be cooked before consumption. Heat destroys *Salmonellae*. Pasteurization, heat treatment of milk, is the only way to assure safe milk supplies."

Referring to the statistical analysis of *Salmonella* illnesses cited by Congressman Dannemeyer, Dr. Bolton called it "creative." Literature distributed by Alta-Dena shows that the figure of "3.6 million cases between 1971 and 1982" was derived by multiplying the number of all types of *Salmonella* infections reported annually (3,000) by 12 years and again by 100, "since some say that only 1 out of 100 *Salmonella* cases are ever detected/reported." However, the number of *S. dublin* cases connected with raw milk consumption was given as the actual number reported (103), not the 10,300 which would result from multiplying this figure by 100.

According to state health officials, the fact that the number of *S. dublin* cases in California is not larger "relates to the fact that the population that drinks CRM is very small and that contamination of CRM appears to

be intermittent." In its March 30, 1984 morbidity report, the Infectious Disease Section of the California Department of Health Services estimates that *S. dublin* infections are 158 times more likely in CRM users than in non-CRM users.

Others testifying in favor of a federal rule regarding raw milk included representatives of the Association of Food and Drug Officials; International Association of Milk, Food, and Environmental Sanitarians; Interstate Milk Shippers; and National Milk Producers Federation.

The FDA hearing was but a skirmish in what *The Los Angeles Times* [Aug. 31] called "a holy war over milk" in California. "Each time the state laboratories have found salmonella in Alta-Dena's milk," the writer noted, "another recall notice has been issued, warnings have appeared in newspaper articles and the raw milk has been pulled off supermarket shelves. In this war of attrition, the state seems to be slowly winning." Although Alta-Dena's total sales have increased steadily in recent years, raw milk sales have declined from almost 20,000 gallons a day in 1977 to about half of that amount today. Yet, the article points out, "after all the recalls and all the press releases, an estimated 200,000 people a day still drink raw milk in California."

Mr. Fanning, formerly a science writer for *The Atlanta Journal* and director of information for the Centers for Disease Control, is editor and publisher of *Consumer Newsweekly*.

Briefs

Low-calorie liquor? Responding to a petition from the Heublein Spirits Group, the Bureau of Alcohol, Tobacco and Firearms (BATF) has requested public comment on whether to set up a new class of distilled spirits bottled at lower proof than currently permitted. It also wants ideas on what such products should be called ("mild" or "light," for example). A standard does exist for less-than-full-proof distilled spirits, but Heublein feels that the required term ("diluted") has a negative connotation to consumers. In its petition, the company noted that "consumers are seeking foods and beverages with less sugar, salt and fewer calories [including] low calorie wines and beer." Comments, due by January 31, 1985, should be sent to: Chief, FAA, Wine and Beer Branch, BATF, P.O. Box 85, Washington, DC 20044. Attn: Notice No. 491. For additional information, see page 44921 of the November 13th *Federal Register*, or contact Charles N. Bacon at the above address (telephone 202-566-7626).

Chelation doctors challenged. Concluding that no scientific documentation shows that chelation therapy is effective against cardiovascular disease, atherosclerosis, rheumatoid arthritis or cancer, the AMA House of Delegates recently voted to call upon proponents of this method to conduct properly controlled studies to test their claims.

More vitamin C. The Swiss-based Roche Pharmaceuticals Group has opened its largest single production facility in Scotland. According to *Health Foods Business*, the plant took five years to build, cost \$210 million, and can produce up to 20 metric tons of vitamin C daily.

Experts available. The National Council Against Health Fraud operates a speakers bureau and can also help injured plaintiffs and government agencies secure expert witnesses to testify in court cases involving quack methods. Its telephone number is 714-796-3067.

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Health food industry priorities. Pat Heydlauff, newly appointed executive director of the National Nutritional Foods Association (NNFA) has announced four priorities facing the Association: 1) meeting the threat of dietitian's licensure to take away store owners' rights to give nutritional advice; 2) countering negative media attacks by individuals like Drs. Victor Herbert and Elizabeth Whelan; 3) enhancement of NNFA's program for product standards; and 4) increased public relations to create a positive image for the natural foods industry. The organization has revived its Health Freedom Victory Fund with a goal of raising \$250,000 to fight dietitian licensing. Health Resources Group (a Kurt Donsbach enterprise) donated \$2,000 to the fund. General Nutrition has donated \$5,000, and Shaklee Corporation and Diet Centers have also contributed.

Push for veggie burgers. American Vegetarians, a Maryland-based group, is campaigning to pressure McDonald's into offering a meatless version of its burgers. According to the *East/West Journal* (a publication of macrobiotic proponent Michio Kushi), the organization has been picketing selected restaurants in 25 cities and claims to have assembled 300 citizens' groups to help with a boycott endorsed by Dick Gregory and United Farm Workers president Cesar Chavez. McDonald's has responded that it tested a soy burger several years ago but found it lacked mass appeal. The chain recently celebrated the sale of its 50 billionth burger.

New "holistic" coalition. The Coalition of Holistic Health Organizations (CHHO) was founded in March 1984 by 26 organizations including the American Holistic Medical Association, the East/West Institute (a promoter of macrobiotic eating), the National Center for Homeopathy, the National Colon Hygiene Association, the National Health Federation, and the People's Medical Society (a Rodale Press offshoot). CHHO's planned activities include: 1) a database on research into holistic practice; 2) a database on holistic practitioners and their services; 3) keeping current on legislative and regulatory information; 4) a national "bulletin board" of meetings and other events of interest; 5) coordination of a national speakers bureau which could respond to holistic health issues in the media. Voting membership, which costs \$250/year, is open to professional associations or membership organizations with at least three years of experience or 100 members, and also to suitable educational institutions. It is expected that communication between members will be done largely through a computer network.

Pepsi, Coke and corn syrup. PepsiCo., Inc. and The Coca-Cola Company have raised to 100% the amount of corn syrup their bottlers may use for sweetening their cola drinks—a change that will affect per capita sucrose consumption figures.

Historical tidbit. In 1958 the American Medical Association gave a special citation to the General Electric Company for sponsoring a television show on the dangers of cancer quacks. The award, for "one of the best examples of the value of television in public information," was accepted on behalf of the company by the show's director: Ronald Reagan.

Boon for gourmets? Predicting that the number of Americans between 15 and 29 years old will decline 7 million by 1991, a Food Institute report suggests that full menu restaurants may benefit at the expense of the fast food industry. According to the report, there "will be an increase of almost 16 million in the ranks of adults aged 30-49, an affluent group, usually associated with more sophisticated tastes." The likely result: more menu diversification at fast food outlets.

Chiropractors and nutrition. In 1982, the Iowa Supreme Court ruled that chiropractors could not provide nutrition advice to their clients because this service was not specified in the chiropractic licensing law. In 1983, the Iowa Chiropractic Society sponsored a bill to change this. The Iowa Dietetic Association (IDA) objected on grounds that chiropractors had insufficient training to provide nutrition counseling. When it became clear that the bill would pass, IDA succeeded in amending it to require that chiropractors pass a competency exam before engaging in the practice of nutrition. An additional amendment prohibits chiropractors from selling supplements at a profit in their offices. The amended bill passed and took effect July 1, 1983. Subsequently, a spokesperson for the Iowa Board of Chiropractic Examiners said that since chiropractic licensing exams already include a section on nutrition, no procedural changes are needed. [Source: Judith D. Klopfenstein, M.S., R.D.]

QUESTION BOX

Q. I have been reading about "dead" (cooked) versus "live" (uncooked) foods. Is it true that cooking destroys the enzymes in food, therefore making it less nutritious?

A. It is true that cooking can destroy enzymes in foods, but this has no significant effect on nutritional value. Enzymes are present in the tissues of plants and animals to serve their own biochemical needs. Claims that these enzymes are important to humans are based on the mistaken belief that they enter the body intact and function usefully as enzymes to aid metabolic processes. This is untrue. Enzymes are proteins, and like other proteins, are digested and enter the body as their component amino acids. The enzymes the body needs for digestion are produced by the gastrointestinal tract and other organs such as the pancreas and liver. The digestive enzymes are not the same as those found in food.

SOME FACTORS AFFECTING THE NUTRIENT CONTENT OF FOODS

Eleanor N. Whitney, Ph.D., R.D.

Linda K. DeBruyne, M.S., R.D.

The food industry has increased its attention to the nutritional quality of products—a desirable trend, considering that almost two-thirds of the food we consume has been commercially processed. Processing often involves a trade-off: it makes foods widely available at reasonable prices, makes them safer, and extends their usable lifetime, but it does cause some vitamin and mineral losses. Overall, however, the benefits outweigh the losses.

In some instances processed food has the edge over its unprocessed counterpart, even in terms of nutritional quality. For example, foods frozen and stored under proper conditions will often contain more nutrients when served than fresh fruits and vegetables that have stayed in the grocery store even for a day.

How do store-bought vegetables and garden-fresh vegetables compare nutritionally? Chemical analysis would find slight nutrient differences. The nutrient content of fresh foods varies with how the food is grown (for example, iodine content of plants depends on the mineral content of the soil), when the food is harvested (ripe or unripe), and how the food is treated after harvest. As a rule, the sooner after harvest the food is eaten, the better.

Vine-ripening maximizes vitamin content, but many fruits and vegetables stay attractive for only a day or so after picking and then begin to spoil. Vegetables such as tomatoes have to be harvested while still unripe, to facilitate shipping. Then they are ripened just before going to market. In this case, a fraction of the vitamin content is sacrificed in exchange for increased availability.

The ideal nutrient-conserving process for produce was suggested by Colonel Potter of the TV series *M.A.S.H.* He would take a hot plate out to his corn field and boil a pot of water. Then he'd bend cornstalks over the pot and dip the ears of corn in the water while they were still attached to the stalks. When they were barely cooked, he'd eat them right there in the field. This "recipe" would provide both maximum flavor and minimum nutrient loss due to storage.

Which is better—canned or frozen food? Canning is a good method for preserving food against microbes (bacteria, fungi, and yeasts) that might otherwise spoil it, but canning does diminish nutrient retention. The canning process is based on time and temperature. Each small increase in temperature has a major effect on the killing of microbes but only a minor effect on nutrients. In contrast, long treatment times cause greater nutrient

losses. Therefore high-temperature, short-time (HTST) treatment is used. This greatly reduces the content of several vitamins, notably thiamin and folacin. But HTST treatment actually helps preserve vitamin C by destroying its special enemy, ascorbic acid oxidase, an enzyme present in fruits and vegetables.

Freezing is an excellent way to preserve food. Some losses may occur during the steps preparatory to freezing, such as blanching, washing, trimming or grinding, but the freezing itself does not destroy nutrients. Because oxygen destroys vitamin C, some is lost whenever tissues are broken and exposed to air.

How should frozen foods be stored? Generally the lower the temperature, the longer the storage life and the greater the nutrient retention. To maximize the nutritive value of foods at home, use a thermometer to monitor the temperature of the freezer. Frozen food should be kept at a temperature colder than 32°F (0°C). Although food may seem frozen at 2°C, much of it is not—and enzyme-mediated changes can cause total loss of vitamin C in as little as two months.

What about mineral losses in processed foods? Unlike vitamins, minerals are unaffected by heat processing. However, they can be lost when they leach into water that is thrown away. A bit of Southern folk wisdom related to the cooking of "greens" (dark green vegetables) is to pour off the liquid ("pot liquor") and drink it. And the "liquor" from canned vegetables can be used to make soups, cook rice, or moisten casseroles. Nutrient losses are closely related to the extent to which food tissues have been broken, cut or chopped, and to the length of time the food is in the water.

How can I tell whether a food has lost nutritional value? The feeling that a food "doesn't look quite right" can be a valuable clue. As nutrient content deteriorates, there is often a corresponding deterioration in food quality (appearance, taste, and texture). For example, when a food smells bad, oxidative or enzymatic changes have occurred—the same kinds of changes that adversely affect nutrients. Thus, unprocessed "natural" foods sold in health food stores may be a poor choice since no measures have been taken to prevent vitamin loss from oxidative and enzymatic changes.

Does it matter which type of bread is eaten? The wheat kernel loses valuable nutrients during the milling process. Improvements in milling machinery made in the early 1900s resulted in a white, smooth-textured flour that people considered more desirable than the crunchy, dark brown, "old fashioned" flour. But while

"old fashioned" whole wheat flour includes the entire wheat kernel with its germ and bran (rich in vitamin E, niacin, thiamin, other nutrients and fiber), refined white flour contains only the starchy part of the kernel (starch and protein).

After refining became standard procedure for bread, people in the United States began to suffer from deficiencies of the nutrients iron, thiamin, riboflavin and niacin, which they had formerly received from whole-grain bread. To correct this situation, the Enrichment Act of 1942 requires that iron, thiamin, niacin and riboflavin be returned to refined products. This doesn't make a single slice of bread "rich" in these nutrients, but several slices of enriched bread provide significantly more of them than comparable amounts of bread made from unenriched refined flour.

Enrichment of grain products restores only four of the lost nutrients, however. Today, there is increasing evidence that whole-grain products should be used in order to restore trace minerals and fiber to our diet. Whole-grain items contribute significantly more magnesium, zinc, folacin and vitamin B₆ than enriched bread and cereals—and these are all necessary nutrients.

How can foods be stored and prepared at home to minimize vitamin losses? Vitamin loss in home cooking at home can be 100 percent, and it is not unusual for losses to be in the 60 to 75 percent range. In contrast, vitamin losses seldom exceed 25 percent in modern commercial processing. Thus, while the kinds of foods we buy certainly make a difference, what is done to them in the kitchen is also important.

Many enzymes work best at the temperatures at which the plants grow, normally about 70°F (25°C), which is also the room temperature in most homes.

After a fruit or vegetable has been picked, vitamin production largely stops, but degradation continues. Chilling a fruit or vegetable slows down degradation. To maximize and protect vitamin content, fruits and vegetables ideally should be vine-ripened, chilled immediately after picking, and kept cold until eaten.

Because vitamin C is an acid and an antioxidant, it is most stable in an acid solution, away from air. As long as the skin of citrus fruits or tomatoes is uncut, or the can of fruit juice is unopened, this vitamin is protected. Cut vegetables or fruits and open containers of juice should be covered tightly and refrigerated.

How should vegetables be prepared to minimize nutrient losses? Water-soluble vitamins and minerals readily dissolve into the water in which vegetables are washed or boiled. If this water is discarded, the nutrients go down the drain with it. Three things can be done to minimize losses: 1) wash the vegetables before cutting them; 2) steam or boil them in a small amount of water; and 3) avoid high temperatures and long cooking times.

How important is it to minimize nutrient losses during home preparation of foods? Vitamin losses under reasonable conditions are not catastrophic. It certainly isn't necessary to fret or worry over every little episode that might cause small nutrient losses. Eating a wide variety of foods daily, including some uncooked fruits and vegetables, ensures an adequate supply of nutrients.

Dr. Whitney is president of The Nutrition Company, Tallahassee, Florida, a professional group which develops educational materials and presents workshops on nutrition and health topics. She is also co-author of *Understanding Nutrition*, the leading college textbook of basic nutrition. Ms. DeBruyne is an associate of The Nutrition Company.

MORE TROUBLE FOR GENERAL NUTRITION

In September 1984, the United States Postal Service filed 13 civil complaints charging General Nutrition Corporation (GNC) with conducting schemes for obtaining money through the mail by means of false representations in advertisements.

The products involved were: *Risk Modifier*, a nutrient mixture claimed to decrease cancer risk; *Life Expander Choline Chloride*, claimed to improve memory power; *Mental Acuity Formula*, a nutrient mixture supposedly capable of preventing or retarding memory loss due to aging; *Life Expander Fat Fighter*, containing DHEA, claimed to cause weight loss without dietary modification; *Challenge Maximum Body Builder*, a nutrient mixture claimed to have special muscle-building properties; *L-Glutamine* tablets, claimed to "keep you mentally and emotionally in balance"; *Lipotropic Fat Fighter Tablets*, a nutrient mixture which supposedly can reduce body fat; *Spirulina*, which supposedly will "turn off your brain's appetite control center"; the *24-Hour Diet Plan* and the *Practical Diet Plan*, both "guar-

anteed" to produce weight loss of "up to 10 pounds in two weeks"; *Life Expander Growth Hormone Releaser*, claimed to cause weight loss without dieting; *Herbal Diet Formula*, supposedly capable, by itself, of causing weight loss; and *Inches Be Gone*, a body-wrapping cream claimed to reduce any area where you want to lose inches.

After the complaints were filed, a U.S. Attorney asked the U.S. District Court in Pittsburgh to temporarily restrict sales of these products. In December, GNC signed a consent agreement promising not to advertise or sell them by mail until the case has been resolved through administrative proceedings which judge whether the products can live up to the advertised claims. But sales through the company's 1,200 stores are still permitted. This case is separate from the criminal case involving evening primrose oil, filed in November in the U.S. District Court at Buffalo, New York. [NF 1:20]. In 1983, GNC also lost a civil court case involving sales of "starch blocker" tablets.

PAU D'ARCO

Varro E. Tyler, Ph.D.

Perhaps the most popular herbal cancer "cure" that has appeared in recent times is pau d'arco tea—also known as ipe roxo or taheebo tea. This beverage is prepared from the bark of various species of *Tabebuia*, a genus of about 100 broad-leaved, mostly evergreen trees of the family Bignoniaceae, native to the West Indies and Central and South America. Referred to in Brazil as ipe or pau d'arco, these plants have an extremely hard wood that is most attractive and practically indestructible. Its resistance to decay probably attracted the attention of the natives to the medicinal potential of the species.

Popular reports state that Indian tribal doctors in Brazil brew a tea from the inner bark of *Tabebuia avellanedae* or *Tabebuia altissima*, known respectively as lapacho colorado and lapacho morado, which is used to treat cancer as well as ulcers, diabetes and rheumatism. Proponents also claim that pau d'arco is "a powerful tonic and blood builder" and is effective against rheumatism, cystitis, prostatitis, bronchitis, gastritis, ulcers, liver ailments, asthma, gonorrhea, ringworm, and even hernias. The drug is claimed to have been popular in the old Inca Empire, long before the Spanish invaded the New World. *T. avellanedae* is native to the warmer parts of South America, but *T. altissima* supposedly grows high in the Andes Mountains where "not even the worst winter storms can blow it down."

Such popular reporting leaves much to be desired. There is no plant with the scientific name *Tabebuia altissima*; further, no species of *Tabebuia* grows high in the Andes. This remote habitat was apparently the creation of some advertising copywriter to make the drug sound more exotic. While *Tabebuia avellanedae* is a name found in the literature, the correct botanical designation of the species is *Tabebuia impetiginosa* (Mart.) Standl.

Complicating the matter of origin even further is the fact that some of the pau d'arco herbal teas marketed in this country do not derive from the *Tabebuia* species at all, even though they are labeled as lapacho

colorado or lapacho morado. Instead, they are stated to represent the bark of *Tecoma curialis* Solhanha da Gama, another closely related member of the same plant family. This probably makes little difference because the useful constituents and therapeutic activities, if any, are undoubtedly similar. It nevertheless leaves the botanical source of pau d'arco products unclear. The outstanding American botanical authority on this group of plants, Dr. A. H. Gentry, speculates that probably all of the bark in question is being obtained from some lowland *Tabebuia* species.

Because of their commercial significance in the construction industry, *Tabebuia* woods have been examined in detail. In addition to such therapeutically uninteresting constituents as volatile oils, resins, bitter principles, and the like, they contain from 2 to 7 percent of a naphthoquinone derivative known as lapachol. Although few detailed studies of the chemical constituents of *Tabebuia* barks have been conducted, it is reasonable to assume that most of these barks contain lapachol as their principal active ingredient.

Lapachol does possess some anticancer properties. In 1968 it was shown to have significant activity against Walker 256 carcinosarcoma, particularly when administered orally to animals in which this tumor had been implanted. In later studies, lapachol was found to be active against other kinds of animal cancers, including Yoshida sarcoma and Murphy-Sturm lymphosarcoma. In trials with human cancer patients, however, as soon as effective plasma levels were attained, undesirable side effects were severe enough to require that the drug be stopped. These included moderate to severe nausea, vomiting, anemia and a tendency to bleed. Animal and other laboratory studies have demonstrated that lapachol also possesses antibiotic, antimalarial and antischistosomal properties, but scientific studies have not been done in humans because of the problem of toxicity.

Pau d'arco is marketed in the United States as a tea or "dietary supplement" with no therapeutic claims made on product labels. Its lack of proven effectiveness, its potential toxicity, and its relatively high cost (about \$12 to \$50 per package) all render its use both unwise and extravagant.

COMING SOON

Diet and Behavior

Blue-green Manna Aveloz

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs.

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GOVERNMENT ANTIQUACKERY ACTIVITIES MORE VISIBLE

Stephen Barrett, M.D.

In November 1983, Congress passed the Mail Order Consumer Protection Amendments of 1983 (Public Law 98-186) to give postal authorities greater power to stop mail-order schemes. The new law enables postal inspectors to investigate faster by going to an advertiser's place of business to purchase the product instead of having to gather evidence through the mails. Cease-and-desist orders to stop false representations can be obtained through administrative procedures. If such orders are violated, civil penalties can be sought in federal court for up to \$10,000 per day.

In December 1983, the FDA announced a 1-year pilot project directed against selected medical devices and other health care products for which deceptive or fraudulent claims are made. Call "Tipped Off or Ripped Off," its goal is to warn consumers not to waste money on such products. The program is restricted to products that pose no direct health risk; those which are inherently dangerous will be handled through traditional FDA mechanisms. When a questionable product is detected, promoters will be told that if steps are not taken within 30 days to comply with the law, the FDA will initiate a nationwide information campaign to inform consumers of false and misleading labeling, unsubstantiated claims, or other law violations. The agency's first action under the program was taken in December 1984 against three companies which had ignored FDA requests to stop misrepresenting that waist wraps, vibrating belts or sauna suits are effective for weight reduction or spot reduction.

In May 1984, the FDA and the Council of Better Business Bureaus sent information packets to the advertising managers of 9,500 newspapers and magazines, asking them to check ad copy more carefully before accepting it for publication. Citing common characteristics of misleading health ads, the agencies offered to evaluate questionable claims. In November, a similar mailing was sent to the sales managers of 10,000 television and radio stations.

On May 4th, an FDA Field Management Directive was issued "to create a mechanism that will identify and

generate a limited number of legal actions against health fraud not associated with direct health hazard." Health fraud products are defined as "either generally harmless and ineffective products to which people with serious disease conditions may turn instead of seeking or continuing proper medical treatment, or harmless or worthless articles promoted to improve general health, well-being, or appearance." The memo directs each region/district office "to nominate as candidate(s) for enforcement action the firm and/or products they believe represent the most significant health frauds for agency action." If the cases are not approved for action by the FDA center to which they are submitted, the agency's Compliance Policy Council is to review them and make a final decision.

On September 21st, Commissioner Frank E. Young, M.D., Ph.D., approved the creation of a 6-person Drug Health Fraud Compliance Branch (DHFCB). This unit, headed by Richard Chastonay, will be responsible for coordinating the review of actions recommended by the FDA field offices. It is setting up a new surveillance system and may also initiate and coordinate investigations.

At his first major conference on October 9th, Commissioner Young promised that antiquackery activities would receive high agency priority. The conference was called to announce "a massive public education campaign . . . spearheaded by the FDA and the Pharmaceutical Advertising Council." However, the campaign has not yet been designed. Some 4,500 advertising agencies and 1,000 health care companies are being invited to enter a competition to design actual messages. The campaign is to be financed through a \$55,000 grant from the FDA plus \$105,000 from pharmaceutical and health care companies. Consultants who reviewed the grant proposal have warned that some of the major contributors (Hoffmann-La Roche, Inc., Lederle Laboratories, and A.H. Robins) have engaged in misleading advertising of vitamin products. But agency officials have promised to retain tight control over what is released to the public.

Three Congressional subcommittees have shown considerable interest in the issue of government action against quackery. In May 1984, the House Select Committee on Aging's Subcommittee on Health and Long-Term Care (Claude Pepper, D-FL, chairman) issued a lengthy report containing sharp criticism of the FDA for not enforcing the criminal laws against unapproved new drugs [NF 1:1-2, 1:21]. In July, Congressman Pepper introduced three bills designed to increase public protection against health frauds. One would increase criminal penalties against "those who willfully sell or offer for sale drugs, devices, or medical treatment knowing that it is unsafe or ineffective or unproven for safety or efficacy." Another would establish a Strike Force on Health Quackery to coordinate the efforts of the Department of Justice, the FDA, the FTC and the U.S. Postal Service to curb the sale and promotion of fraudulent health products. The third bill would create within the National Library of Medicine a clearinghouse "to serve as an information center to provide a data base for consumers on the efficacy, comparative cost and possible side effects of drugs, medical devices, and medical treatment procedures, including [those] which have not been proven safe and effective."

In October, the Senate Commerce Committee's Consumer Subcommittee (Robert Packwood, R-OR, chairman), which has oversight jurisdiction over the Federal Trade Commission, held a public hearing as part of an investigation to determine whether that agency is doing enough to combat health frauds.

In November, the House Government Operations Subcommittee on Intergovernmental Relations (Ted Weiss, D-NY, chairman) announced that more than 5,000 prescription drugs are being unlawfully marketed without FDA approval in addition to thousands of unapproved nonprescription products (food supplements).

In November, criminal prosecution was begun against General Nutrition, Inc., for marketing evening primrose oil with claims that it is effective against arthritis, high blood pressure, multiple sclerosis and other ailments [see NF 1:20]. This action is unusual because only one criminal prosecution for food supplement misbranding was initiated by the agency between 1963 and 1983. *Health Foods Business* quotes an FDA spokesman as saying that the reason for criminal rather than civil action against General Nutrition was to raise the stakes, since in the past, GNC had established a pattern of behavior that indicated they would not change their way of doing business. "With starch blockers," said the unnamed FDA official, "we went after the product. Here we are trying to send a message to the entire health foods community that the promotion of health foods for therapeutic purposes by off-label claims is illegal and must stop. We believe that by winning this case we will change the way the entire industry does business."

This, of course, is exactly the policy advocated in the petition of FDA official Paul Sage and by the editors of *Nutrition Forum* [see NF 1:1-2]. Whether FDA policy is actually changing remains to be seen. The decision to

prosecute General Nutrition was actually made more than a year ago; and so far as we know, FDA headquarters has made no policy decision to permit additional criminal prosecutions. Moreover, the Commissioner has not responded to Mr. Sage's petition within the 180-day period required by FDA regulations.

On January 11, 1985, the FDA sent a mailing to radio talk show producers suggesting how to identify quacks so they have less chance of being selected as guests.

On January 15th, the agency proposed to remove from the market all lotions, creams and other topical nonprescription products claiming to grow hair or prevent baldness. This action was based on review of an expert advisory panel's recommendation that no such nonprescription product is effective. Public comments on this proposal, which will be accepted until May 15th, should be sent to the Dockets Management Branch, FDA, 5600 Fishers Lane, Rockville, MD 20857. *Nutrition Forum* has suggested that the ban be extended to food supplement products claimed to provide special nourishment to the hair.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 20 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984, he received an FDA Commissioner's Special Citation Award for Public Service in combatting nutrition quackery.

QUESTION BOX

Q. Several vitamin manufacturers advertise that strenuous physical activity increases the need for vitamins and minerals, and therefore that people who engage in vigorous exercise or athletics should take supplements. Is there any truth to these claims?

A. Strenuous exercise increases the need for calories, water and a few nutrients. However, such increased nutrient needs are unlikely to rise above RDA amounts consumed by persons eating a balanced diet. Even if more than RDA amounts were needed, they would be supplied by the increases in food intake normally associated with exercising. The belief that extra vitamins are useful to athletes is also tied to the misconception that extra vitamins provide extra energy.

Q. Is palm oil a polyunsaturated fat?

A. No. Palm oil, a common oil in processed foods, is high in saturated fats. About 52% of its fatty acids are saturated, 39% are monounsaturated, and 9% are polyunsaturated. These proportions are similar to those of coconut oil, another oil used extensively by the food industry. Most other vegetable oils are highest either in monounsaturated fatty acids (e.g., olive oil) or polyunsaturated fatty acids (e.g., soybean, corn, and sunflower oils).

DIET AND BEHAVIOR: A STATE-OF-THE-ART REPORT

Kathleen A. Meister, M.S.

Many food faddists and members of the general public espouse the idea that food affects behavior. However, this concept has not been popular with the scientific community—and for good reason. Although anecdotal links between diet and behavior have been reported for thousands of years, the first scientific evidence for such a connection was not developed until 15 years ago.

The extent to which this field has grown since that time was clearly indicated by the symposium on "Diet and Behavior: A Multidisciplinary Evaluation," held November 27-29, 1984, in Arlington, Virginia. Those who follow this subject closely may have been disappointed because little new information was presented. The event was significant, however, because of its size, its distinguished sponsorship, and the tone of the presentations.

Few scientists would have imagined 15 years ago that the subject of diet and behavior would ever warrant a symposium with 37 speakers and 300 attendees, held under the joint auspices of the American Medical Association, the International Life Sciences Institute, and The Nutrition Foundation, Inc. But despite the substantial progress that a conference of this magnitude indicates, the overall theme was one of caution. Throughout the meeting, speaker after speaker warned against overgeneralization of experimental results, emphasized the distinction between anecdotal information and rigorous scientific studies, called for improvements in methodology, and urged that public policy not be based on unsubstantiated hypotheses or preliminary data.

Richard J. Wurtman, M.D., Professor of Neuroendocrine Regulation at the Massachusetts Institute of Technology and one of the pioneers in the study of diet and behavior, noted that, "It is now an established fact that diet can influence brain function. But this does not legitimize all of the anecdotes about how diet affects behavior."

Robert L. Sprague, Ph.D., Director of the Institute for Child Behavior and Development at the University of Illinois said that, "Testimonials may be the best way of influencing people, but they are the worst way to get information."

G. Harvey Anderson, Ph.D., Professor and Chairman of the Department of Nutrition Sciences at the University of Toronto, warned that, "It is important to be critical of scientific claims regarding the dietary component of behavior. If you find, for example, that dietary intake is associated with a certain behavior, it may well be that the behavior—or the circumstances that evoked the behavior—is actually the cause of the dietary intake. . . Reporters—and scientists—should be cautious about disturbing the public with messages about diet and behavior before the data are reasonably evaluated."

Alfred E. Harper, Ph.D., Professor of Nutritional Sciences and Biochemistry, University of Wisconsin said that, "Despite observations that certain nutrients can alter the concentrations of neurotransmitters in the brain, evidence supporting claims of associations between diet and behavior is weak. . . The ability to measure behavioral changes accurately and quantitatively is limited; also, it is extremely difficult to insure that the many factors that can influence behavior are effectively controlled. Nutritional control can be accomplished reasonably well in animal experiments, but comparable control is rarely possible in human experiments."

Robin B. Kanarek, Ph.D., Associate Professor of Psychology and Adjunct Associate Professor of Nutrition, Tufts University, said that, "Caution must be exercised in interpreting the results of experimental studies examining the relationship between diet and behavior. . . Proper experimental design, which includes such factors as double-blinding, placebo controls, matching of subjects and controls, and appropriate use of statistics, is crucial."

The data presented at the symposium amply justified these calls for caution. Much of the research in this field does not attempt to link dietary factors directly with human behavior. Rather, it is concerned with the impact of dietary factors on neurotransmitters—chemicals involved in brain function which are known to affect behavior. Much research has been done on the effects of psychopharmacologic drugs on these chemicals. But even with these studies where the tremendous difficulties involved in measuring behavior are avoided, few results can be generalized from the laboratory to

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real-life situations. Information presented at the symposium showed that the impact of dietary factors on neurotransmitters and behavior can vary in different species, in acute vs. chronic situations, at different times of day, in people of different ages, and for slightly different dietary components (e.g. proteins from different sources).

Even the well-known model linking the consumption of carbohydrates vs. protein with a chain of biochemical events that leads to an increase or decrease in the level of the neurotransmitter serotonin in the brain (a model so well-established that a slide outlining it was shown by five different symposium speakers) was questioned. John D. Fernstrom, Ph.D., Associate Professor of Psychiatry and Pharmacology at the University of Pittsburgh, who originated the model in collaboration with Dr. Wurtman more than ten years ago, presented data indicating that the model does not hold up under all circumstances. In his experiments, the biochemical changes known to occur when a single dose of carbohydrate or protein is fed to an experimental animal after an overnight fast did not take place in more life-like circumstances in which diets varying in protein and carbohydrate content were fed to test animals over a longer period of time.

The difference between popular belief and scientific fact was illustrated most dramatically by the several speakers who commented on the impact of sugar on hyperactive behavior in children. Although many parents claim that sugar consumption has drastic negative effects on their children's behavior, no evidence for this Jekyll/Hyde syndrome has been found in double-blind studies involving more than 100 children. The Wurtman/Fernstrom model, incidentally, predicts that sugar or any other carbohydrate would decrease rather than increase activity.

Many studies of hyperactive children have used aspartame-sweetened foods or beverages as placebo controls and have included assessments of behavior in baseline periods in which no sweetener was consumed. No evidence presented at the symposium supported the contention that aspartame or sucrose (table sugar) has adverse effects on the behavior of children.

The conception that dietary factors have profound impact on aggressive and criminal behavior also came under severe attack. Both Craig T. Love, Ph.D., Chief of Research, Federal Correctional Institute, Butner, North Carolina and Gregory E. Gray, M.D., Ph.D., Postdoctoral Associate, Department of Psychiatry and the Behavioral Sciences, University of Southern California Medical Center, severely criticized most of the studies of diet and behavior in criminal populations that have been conducted to date.

Dr. Love noted that the research in this field was so bad that after reviewing and assessing the scientific literature, his institution gave up the idea of participating in a project. Many of the methodological and interpretation problems in these studies "arise from the naivete of the researcher about corrections, nutrition,

social science research methodology, or a combination thereof," Love said. However, both Love and Hardy Rauch, Project Director, American Correctional Association, indicated that correctional facilities would be likely to cooperate in well-designed studies of diet and behavior.

Dr. Gray noted that advocates of a link between diet and crime do not agree upon a single mechanism by which diet influences behavior—reactive hypoglycemia, food allergies, vitamin and mineral deficiencies and toxicities, and other adverse reactions to food additives, sugar and milk have all been blamed. He then listed the following flaws in the existing studies of diet and criminal behavior: use of unreliable diagnostic techniques, failure to study comparable control groups, failure to use double blind methodology, failure to present quantitative dietary data, improper statistical analysis, and selective presentation of experimental results.

"Because dietary intervention programs are being implemented in correctional facilities despite . . . lack of scientific evidence of their effectiveness," warned Dr. Gray, "there is increasing concern that food faddism is becoming the official policy of correctional facilities. Of particular concern are the social implications of theories of diet and crime . . . such theories imply that diet, rather than the individual, is responsible for aberrant behavior, a concept that has already made its way into the courtroom. In addition, dietary intervention programs may at times divert resources away from more effective treatment programs. Finally, poorly designed dietary changes may lead to nutritional deficiencies, and overzealous vitamin and mineral supplementation may lead to toxicity."

Some members of the audience objected to the fact that researchers who conducted the heavily criticized studies of diet and crime were not included among the speakers at the symposium. It is easy to understand, however, why they were not invited. The tightly scheduled program was already crowded with speakers who had done valid research, and the organizers of the symposium were undoubtedly concerned about the possibility of conferring credibility on truly appalling research by allowing the people who had conducted it to speak at such a prestigious conference. In any event, the symposium attendees were not deprived of information about these studies. The researcher who has conducted most of them, Stephen J. Schoenthaler, Ph.D., Coordinator, Criminal Justice at California State University at Stanislaus, participated

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actively in the question-and-answer period, and copies of an issue of the *International Journal of Biosocial Research* which featured five of his studies were made available at the meeting.

Although criticism of poor research and calls for scientific rigor were prominent features of the diet and behavior conference, several questionable studies were presented there, too. Perhaps the most seriously flawed were those of Matti Virkkunen, M.D., Senior Lecturer, Psychiatric Clinic, Helsinki University Central Hospital in Finland. Dr. Virkkunen presented data indicating that glucose metabolism and insulin secretion in two groups of habitually violent offenders with different patterns of violence differed from that of normal controls, and to a lesser extent, from each other. He reported that the offenders had committed their crimes under the influence of alcohol and that most of them had had lengthy drinking binges during which they did not eat. But he did not take the subjects' alcoholism into account in interpreting his data or compare them to a control group of nonviolent alcoholics.

Simon N. Young, Ph.D., Associate Professor in the Department of Psychiatry at McGill University, also appeared to ignore an important factor in interpreting the data he presented. He reported that the amino acid tryptophan, a precursor of the neurotransmitter serotonin, did not affect aggression in a group of normal men. In a study of pathologically aggressive schizophrenics, however, large doses of this amino acid appeared to decrease aggressive behavior. Young concluded that "the dietary component tryptophan may be useful in modulating aggressive behavior when other factors are present in the brain to make a patient pathologically aggressive." Unfortunately, until a member of the audience raised the issue, he did not mention an important confounding variable—11 of the 12 schizophrenic subjects were taking antipsychotic medication.

Two symposium speakers reported studies in which measurable changes in human mood and behavior appeared to result from dietary manipulations. But they neglected to point out that neither of these studies could be carried out in a double-blind fashion. Angus Craig, Ph.D., M.R.C., of the University of Sussex, England, reported on several experiments in which people's performance on tests of sustained attention varied with whether they ate lunch or were deprived of food, and with the size of the lunch consumed. Bonnie Spring, Ph.D., Professor of Psychology at Texas Tech University, reported that subjects in two studies showed subtle differences in tests of performance after eating a carbohydrate meal (sherbet or pita bread) as opposed to a protein meal (turkey breast).

Not all results in the field of diet and behavior are tentative, however. David E. Barrett, Ph.D., Assistant Professor of Pediatrics, Children's Hospital Medical Center, Boston, noted that chronic undernutrition in early childhood can lead to reduced social involvement, poor attention and persistence, and decreased affect. And Ernest L. Hartmann, M.D., Professor of Psychiatry at

Tufts University, reported that it has been solidly established in placebo-controlled studies that administration of the amino acid tryptophan in pure form decreases the amount of time between going to bed and falling asleep for individuals who customarily have difficulty falling asleep.

Several other speakers reported other effects of tryptophan on mood and behavior. There was some controversy, however, about the use of this amino acid in the treatment of human insomnia and other problems. Questioners from the audience suggested that tryptophan, when administered in amounts greater than normally found in the diet, should be regarded as a drug, and that its safety should be proven. Studies to establish that tryptophan is safe as a drug have never been performed. (My own belief is that pure amino acids should be regarded as drugs no matter what the dose, and that their safety should be proven rather than assumed, since pure amino acids do not occur in nature. But this point was not raised at the symposium.)

A psychiatrist in the audience said that he had observed side effects when using tryptophan in his clinical practice. Other people noted that placebos also elicit side effects. Dr. Wurtman observed, however, that physicians (or laypersons) who recommend the use of tryptophan are on shaky legal ground since this substance is not a legal drug in the United States. Other scientists participating in the symposium appeared to be less concerned about the unproven safety of isolated amino acids. For instance, Michael W. Yogman, M.D., Assistant Professor of Pediatrics at Harvard Medical School, reported on studies in which various amounts of tryptophan and valine were administered to newborn infants.

Perhaps these criticisms are excessively severe. The field of diet and behavior is very young, and study of this subject is unusually difficult because it requires expertise in both nutrition and psychometrics and in many cases, in neurochemistry as well. Good research in this field involves cooperation by scientists from several disciplines. One purpose of the symposium was to improve communication among the relevant disciplines. The symposium's participants deserve commendation for this and for the effort most of them made to avoid overgeneralizing their findings.

Mrs. Meister is a research associate with the American Council on Science and Health.

COMING SOON
Writer Sued for "Malpractice"
Food Safety:
What are the Real Issues?

QUESTIONABLE ADVERTISING DISCONTINUED

Since 1971, the National Advertising Division (NAD) of the National Council of Better Business Bureaus has maintained an active program to investigate and adjudicate claims that advertising is misleading. Most cases involving nutrition are resolved with a promise that the advertising being questioned has been discontinued or will be modified. For example:

- Magazine ads headed "Improve stamina and endurance with Viobin Wheat Germ Oil" have included the claims: "More than 18 years of university research show positive evidence that Viobin Wheat Germ Oil can help athletes increase stamina and endurance plus help them overcome fatigue more quickly"; and, "One teaspoon of Viobin Wheat Germ Oil contains all the raw, unrefined wheat germ oil from 5 pounds of whole wheat . . . one of the world's richest natural sources of vitamin E and octacosanol. Studies indicate that octacosanol has a beneficial effect on oxygen intake, net oxygen debt and total body reaction time." According to the NAD, these claims were recently discontinued following a request by NAD for substantiation. The December 17, 1984 NAD Case Report states that "the advertiser . . . felt the advertising in question could be scientifically supported but in a spirit of cooperation had terminated the claims." [Viobin Corporation has been a subsidiary of the A.H. Robins Company since 1973. A few days before the acquisition, the Pennsylvania Department of Health embargoed a quantity of Viobin Wheat Germ Oil until the manufacturer promised to stop advertising that the product could "relieve heart stress."]

- The Purdue-Frederick Company has discontinued magazine advertising which stated that ". . . 4 out of 5 gastroenterologists surveyed recommend Fibermed. And nearly half of these doctors were taking it them-

selves" and that, "Two tasty Fibermed supplements provide more natural dietary fiber than even a serving of the so-called high fiber cereal . . . and with less salt, too." According to the company, the statistical claims were based on the first 364 respondents of 439 completed questionnaires received from a mailing to 3,300 office-based gastroenterologists. NAD had questioned: 1) whether the returns were representative of the total population surveyed; 2) the assumption that doctors who requested complimentary samples for "personal use" were actually taking Fibermed themselves; and 3) whether the doctors' recommendations had been influenced by the recent marketing efforts. Based on the labels of two cereals, NAD agreed that Fibermed provided somewhat more fiber than either one, but questioned whether it contained less salt. The advertiser responded that future advertising incorporating similar claims would be modified to meet NAD's concerns.

- In response to an NAD inquiry, Gold Medal Hair Products admitted that recent advertising of its Head Strong Vitamins had overstated the link between the use of dietary supplements and the health of hair. The company's ads had claimed that, "Your hair may be starving for proper vitamins it needs to grow . . . stronger, get thicker and shining" and said that its supplements would: "Stimulate hair growth. Diminish hair loss. Make your hair stronger. Add to your own nourishment."

NAD is well equipped to handle nutrition issues. Its director, Ronald H. Smithies, Ph.D., J.D., is an attorney with a doctoral degree in biochemistry. The investigative staff also includes a registered dietitian. The agency's address is 845 Third Avenue, New York, NY 10022.

STUDY FINDS HYPERACTIVITY UNRELATED TO FOOD ALLERGY

Using exclusion diets and double-blind provocative tests, British investigators were unable to find any evidence that food hypersensitivity played a role in the mood disturbances or other psychological symptoms of 23 consecutive patients seeking treatment at the allergy clinic of the University Hospital of South Manchester. Nineteen of these patients, who believed that their mental symptoms were related to food hypersensitivity, turned out to have no allergies at all—and their symptoms closely resembled a comparison group of 20 consecutive patients referred to the hospital's psychiatric clinic. The other 4 patients had genuine food allergies as well as psychological symptoms but had not considered them related to each other. In these patients,

tests showed that ingestion of the offending foods did not trigger the psychological symptoms.

The outcome of treatment appeared to depend on the degree of belief that symptoms had an allergic basis. The majority of patients in whom food allergy was excluded accepted the physician's findings and improved with supportive counseling. However, some patients insisted that they must have hidden food allergies and engaged in dangerous dietary restriction which they hoped would enable them to identify foods they needed to evade. The researchers believe that this study casts serious doubt on many of the claims of those attempting to link food allergy and mental symptoms. [*British Journal of Psychiatry* 145:121-126, Aug. 1984]

Briefs

Nutrition councils. More than 40 professionals met recently in Hershey, Pennsylvania to reactivate the Pennsylvania Nutrition Council, dormant since the early 1970s. The meeting was organized by Helen Guthrie, Ph.D., Professor of Nutrition at Pennsylvania State University. One speaker noted that nutrition councils exist in 42 states.

Food bill. The Food Institute reports that total food sales in the United States during the first six months of 1984 were \$133.8 billion.

Public entitled to price information. Smitty's Super Markets Inc., of Springfield, Mo., which had been charged with conspiring with other grocers to interfere with price surveys, has signed a proposed consent order from the FTC. Under the agreement, Smitty's may not: 1) take or threaten action to force price checkers to purchase surveyed products; 2) deny checkers the same access as is given to customers; or 3) coerce any checker, publisher or broadcaster into refraining from price reporting. A similar agreement was signed in October 1983 by Dillon Companies Inc. A third case has not yet been adjudicated.

Laetrile ineffective against pain. In July 1980, in response to political pressure, a clinical test of laetrile and "metabolic therapy" was begun at the Mayo Clinic and three other major cancer centers. The patients involved had cancers for which no standard treatment was known, but the great majority were in good general condition. The study found that no patient was cured or stabilized by laetrile treatment. By the end of the first year, almost all of the core group of 156 patients had died, a result expected with no treatment at all. A recently completed review of the records found that 16 (19%) of 83 patients with pretreatment pain reported some degree of pain relief. However, since other studies have shown that 17-23% of patients with advanced cancer experience pain relief in response to placebos, it is clear that laetrile exerts no pharmacological effect against pain.

Vitamin C complication. Intravenous administration of 2.5 grams of vitamin C is reported to have caused complete kidney failure in a 70-year-old man with impaired kidney function [*Journal of the American Medical Association* 252:1684, Oct. 5, 1984]. Biopsy in the case showed numerous calcium oxalate crystals clogging the kidney tubules. (Oxalate is a metabolite of vitamin C.) The patient, who was being prepared for "chelation therapy," must now use an artificial kidney for the rest of his life. A lawsuit was filed, but the chelation doctor—who carried no malpractice insurance—closed his office in Clearwater, Florida, and may have fled the state.

Just desserts! Newspapers which accept advertising for "miraculous" health products sold by mail sometimes become the victims of their own greed. Apparently it is not unusual for the U.S. Postal Service to receive complaints from newspapers which extended credit for the ads but did not receive payment.

Back door to laetrile reopened. Despite an adverse ruling by the U.S. Supreme Court five years ago, 81-year-old federal judge Luther Bohanon is still permitting individuals to import "personal supplies" of laetrile provided they obtain a physician's affidavit that they have had cancer and understand that the FDA disapproves of the drug's use. Bohanon's policy is a response to a class action suit brought against the FDA in 1975 by Glenn Rutherford, a Kansas seed salesman who claims that laetrile cured him of cancer and is keeping him alive. In March 1984, Bohanon finally acceded to a higher court order to dissolve the injunction supporting the affidavit system. But in May he restored the injunction in response to a motion by Rutherford's attorney to file an apparently groundless amended complaint. Bohanon, who sympathizes completely with the plaintiffs, will probably use any excuse he can to defy the higher courts until the case is reassigned to another judge. An estimated 25,000 patients have used the affidavit system.

Latest antifluoridation ploy. "Keeping up with the times," antifluoridation propagandists have been suggesting that fluoridation is a causative factor in AIDS. In September 1984, apparently inspired by a visit from the antifluoridation guru, Dr. John Yiamouyiannis [See *Nutrition Forum* 1:7], San Francisco Board of Supervisors' President Wendy Nelder called for an investigation to see whether fluoridation is responsible for the high incidence of AIDS among homosexuals in her city. Supervisor Harry Britt replied that the city's gays do not take Ms. Nelder's views seriously. Mayor Dianne Feinstein denounced these views as "off the wall." The *San Francisco Chronicle* called Nelder's request "an exercise in needless and unfounded fearmongering." And an astute *Chronicle* reader pointed out that if fluoridation (begun in SF in 1952) were a causative factor in AIDS, it would be rampant among middle-aged native San Franciscans and rare among gay immigrants to the city—not vice versa.

Sears "health food" concessions to close. Vitality Unlimited, which operated "health food" concessions in more than 100 Sears stores, has announced that it lost \$2.7 million during the first six months of 1984 and is closing all its Sears units.

Twin studies. The International Twin Study, USC School of Medicine, Los Angeles, CA 90033, is interested in learning about cases of cancer that have occurred in (one or both) twins. Participants will merely be asked certain questions. Further information can be obtained by writing to Dr. Thomas Mack at the above address or by calling 1-800-421-9631 toll-free (or 213-224-7420 collect from California).

Pills for everyone? Catalogs collected by the Lehigh Valley Committee Against Health Fraud list more than 3,000 vitamin, vitamin/mineral and other "food supplement" preparations marketed by some 100 companies aligned with the health food industry.

Risks of zinc supplementation. Adverse findings were demonstrated in healthy male volunteers who ingested 150 mg of elemental zinc as zinc sulfate twice daily for 6 weeks. This amount is 10 times the Recommended Dietary Allowance (RDA). Although the men experienced no symptoms, blood tests revealed decreased immune system responses as well as unfavorable changes in lipoprotein ratios associated with an increased risk of heart disease. [*Journal of the American Medical Association* 252:1443-1446, Sept. 21, 1984.]

Free reprints. Single copies of "Food Preservatives: A Fresh Report" and "Bee Pollen As A Health Food" may be obtained from the Food and Drug Administration, HFE-88, 5600 Fishers Lane, Rockville, MD 20857. Multiple copies are available from the FDA, HFW-40, at the same address, and from the agency's consumer affairs offices in 30 cities.

Starch blocker update. On September 11th, the U.S. Court of Appeals affirmed a U.S. District Court decision that starch blockers are illegal new drugs within the meaning of the federal Food, Drug and Cosmetic Act. The court also upheld the District Court's permanent injunction against the manufacture, sale and distribution of these products. The appeal had been filed by General Nutrition Corporation and two other companies. According to the FDA, starch blockers still available in some health food stores [see NF 1:2] are leftover stock or are not under federal jurisdiction because they were manufactured within the states in which they are being sold.

Diet, Nutrition and Cancer. The controversial 496-page report of the National Academy of Sciences can be ordered for \$19.95 from the National Academy Press, 2101 Constitution Avenue, N.W., Washington, DC 20418.

Diarrhea caused by sorbitol. Excessive intake of sorbitol from dietetic candy is believed responsible for an outbreak of diarrhea in a small group of children in New Hampshire. Those most severely affected had consumed 16 pieces of hard candy which each contained about 3 grams of this sweetener (a sugar-alcohol). Large amounts evidently act as an osmotic laxative, causing retention of water in the intestines.

Low-calorie sweeteners. An excellent 48-page booklet on the current status of aspartame, saccharin, cyclamate and several other low-calorie sweeteners is available for \$2 from the American Council on Science and Health, 1995 Broadway, New York, NY 10023.

Fake weight-loss gadget seized. Newspaper ads for 2-toned eyeglasses called the "Vision Dieter" claimed users could control their appetites and lose weight just by wearing them two hours a day. The inventor—optometrist John A. Miller of Little Rock, Arkansas—said the glasses were developed after he observed how food companies use colors to attract shoppers to their products. He reasoned that if color could control consumers, it could also decontrol them. The glasses, which sold for \$19.95, were to be worn in the morning and afternoon—but not during meals. The FDA said that the Vision Dieters did not work as claimed and were unapproved medical devices. U.S. marshals subsequently seized 652 pairs, and a U.S. District Court ordered destruction of all but 75 which the FDA will use for education on quackery.

"Natural food" retailers form new group. In June 1984 the Natural Foods Network was launched by representatives of 12 of the nation's largest natural food retail stores. Voting membership will be limited to retailers, but others will be invited to join as associate members. The group's aims include: 1) informing members of relevant scientific, economic, legal and political developments; 2) developing testing programs to promote accurate labeling of natural foods; 3) development of computerized consumer, professional and business data bases; and 4) conducting seminars and other presentations to educate members and the general public.

"Health food" clearinghouse. Another new health food industry organization is the National Foundation for Nutritional Research. Its purposes include: 1) exploring new concepts relating to the links between diet and disease and between adequate nutrition and optimum health; 2) stimulating and funding new research; and 3) developing computerized access to "literature supporting nutritional approaches to the prevention and treatment of disease." The Foundation's directors and advisors include Jeffrey Bland, Linus Pauling, Lendon Smith, Carlton Fredericks, Beatrice Trum Hunter, Rosemary West (past-president of the National Nutritional Foods Association), and several "orthomolecular" physicians. The information service is being marketed to retailers for \$200/year, but manufacturers will undoubtedly provide additional support.

Mushroom poisoning registry. The North American Mycological Association, Department of Epidemiology, School of Public Health, University of Michigan, Ann Arbor, MI 48109, is interested in receiving reports of mushroom poisoning, whether slight or severe.

COMING SOON

Cytotoxic Testing
"Growth Hormone Releasers"
Tooth Decay: A Delicate Balance
Pau D'Arco

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CYTOTOXIC TESTING

Stephen Barrett, M.D.
Grace P. Monaco, J.D.

Franchised storefront clinics, laboratories, "nutrition consultants," chiropractors and a few medical doctors are promoting cytotoxic testing. Derived from cyto- (Latin for cell) and toxic (poisoning), the procedure is also called cytotoxicity testing, leukocyte antigen sensitivity testing, Bryan's test, the Metabolic Intolerance Test, or just food sensitivity testing. The conditions supposedly related to food intake and diagnosable by the test include acne, anxiety, arthritis, asthma, back pain, baldness, bedwetting, conjunctivitis, constipation, depression, diarrhea, eczema, excessive sweating, fatigue, headaches, hearing loss, hoarseness, hypertension, hyperactivity, insomnia, learning disorders, nosebleeds, obesity, rashes, sinus trouble, stomach disorders, and susceptibility to cancer.

To perform the test, about 10 cubic centimeters of a patient's blood are placed in a test tube and centrifuged to separate the white cells (leukocytes). These are mixed with plasma and sterile water and applied to a large number of microscope slides, each of which has been coated with a dried food extract like that used by allergists for skin testing. The cells are then examined under a microscope at various intervals over a 2-hour period to see whether they have changed their shape or disintegrated—supposedly signs of allergy to the particular food. A slide with the patient's cells, serum and water is used as a control. Typically, the test results are used to explain the patient's symptoms and to design a "personalized diet program" that includes vitamins and minerals—sold by those administering the test.

Literature from Bio-Metabolic Laboratories, of Los Angeles, California, says that the cytotoxic test "is rapidly becoming the common method of detection for hidden food allergies." The company charges \$255.00 to do a cytotoxic analysis of 150 foods—or \$215.00 without the initial cassette tape consultation and personalized 4-day rotation diet.

American Biologics, of San Francisco, advertises that, "Millions of Americans have unsuspected or undiagnosed sensitivities to what they eat . . . which may express themselves in many subtle ways or may contrib-

ute to or be a major cause of more serious pathological conditions." Its version of cytotoxic testing is called the Metabolic Intolerance Test (M.I.T.) Ads for the M.I.T. program state that professionals who buy it are "in effect handed a functioning business" whose entire investment can be recovered by performing as few as two tests a month. The complete system for testing responses to 200 foods sells for \$9,750, while supplies for each test under this system cost \$70.

The Ecology Laboratory, Inc., of Pasadena, California, run by chiropractor Gerard Stavish, thinks that "the testing time to examine 150-250 foods is ridiculous." This lab charges doctors \$125 for a 25-food test and warns that positive findings must be confirmed by a food challenge test before a diagnosis of allergy can properly be made. However, each test report is accompanied by an "impressive package" containing a cassette tape and rotation diet for the patient to implement. Public lectures offered by the Ecology Health Center include such topics as "How Allergies Poison Your Body" and "Basics of Food Allergy: How it makes you sick and upsets your metabolism." Literature from the Center states that "studies reveal that 62% of all patients seen in private practice have allergic-related diseases or manifestations." (In contrast, the Asthma and Allergy Foundation of America estimates that about 35 million Americans are allergic, but only 5-10% of this number show food sensitivity.)

The Beverly Hills Health Center offers testing for "over 400 foods, chemicals and additives" for \$195.

Bio-Health Centers of Huntington Beach, California, charges \$350 to test for 186 common foods and additives. One of its recent ads—headlined "DISASTER LINKED TO THE FOOD YOU EAT!"—claims that "if you currently suffer from any health difficulties, this test is worth taking." A brochure from the company suggests that cytotoxic testing can be useful in solving the problems of overweight, headaches, stomach and intestinal problems, depression, stress, confusion, sinus problems, asthma, arthritis and hypoglycemia. Bio-Health Center teams composed of a "nutritionist" and a nurse travel

around the country, holding evening meetings during which they can test about 30 people per night—for a gross intake of about \$10,000. Clients are told that after their test results arrive, they can call the lab's toll-free number as often as needed for further dietary advice. Testing can also be obtained by mailing a blood specimen to the lab.

The National Allergy Clinics, of Beverly Hills, California, has advertised in *The Wall Street Journal* that a \$30,000 investment will enable prospects to "GET RICH! Be the first in your area to open up a lucrative allergy testing center—an ALL-CASH-UP-FRONT money-maker which uses a scientific breakthrough—a blood test that charts 245 food allergies simply and efficiently."

How reliable is cytotoxic testing? The official position statement of the American Academy of Allergy and Immunology (AAAI), the nation's largest group of allergists, was published in 1981 in the *Journal of Allergy and Clinical Immunology* [67:333-338] and reaffirmed this year. It notes the following:

- One study found that white cells from allergic patients reacted no differently when exposed to substances known to produce symptoms than when exposed to substances to which the patients were not sensitive [*Journal of Allergy* 29:93, 1958].
- Another study [*JAMA* 231:728, 1974] found that cytotoxic test results did not correlate with allergic and other untoward reactions to foods and that the results were inconsistent when repeated in the same patient.
- In a double-blind controlled study, positive cytotoxic tests were frequently obtained to foods that produced no clinical symptoms and negative reactions were obtained to foods that did produce symptoms [*Journal of Allergy and Clinical Immunology* 58:471, 1976].
- Another double-blind study found the test ineffective for diagnosis of food allergy [*Annals of Allergy* 45:150, 1980].

Based on these and other data, AAAI concluded that: 1) cytotoxic testing has never been proved effective by controlled studies; 2) that controlled studies have indicated that the test is ineffective for diagnosing food or inhalant allergy; and 3) that the test should be reserved for experimental use only in well-designed trials. These conclusions have been endorsed by the American Academy of Otolaryngology-Head and Neck Surgery, the American Academy of Otolaryngic Allergy and several other prominent professional societies. Although some well-credentialed allergists use cytotoxic testing, the vast majority do not.

A few months ago, a Bio-Health Centers program was attended by Raymond G. Slavin, M.D., AAAI's immediate past-president, and his wife, Alberta, who is a consumer editor with CBS television in St. Louis. After slides were shown, a lecture was given by a young man who said he had undergone two years of special nutrition training. Among other things, he advised the assembled group that inhalant sensitivities are not important—so that someone allergic to cats would no

longer have this problem if offending foods are no longer eaten. Mrs. Slavin actually has no allergies. But her test report, which arrived three weeks later, said that she is allergic to 25 foods—including wheat, cane sugar, corn, potato, beef and milk—and should avoid all of them for an 8-week period.

The Health Care Financing Administration (HCFA), which administers Medicare, proposed in 1983 that cytotoxic testing be excluded from Medicare coverage because it "lacks an acceptable rationale based on current knowledge of allergy and immunology. While the procedure may yield reproducible results, the validity of these results has not been supported in controlled, double-blind studies and there is a lack of correlation with clinical evidence of food allergy. The test is plagued with a number of false negative and false positive results indicating that it lacks specificity and sensitivity. The test is time consuming, requires well-trained and supervised technicians, and is dependent on subjective interpretation." [48 Fed. Register 37718]

In response to HCFA's proposal, one clinic wrote to its patients to tell HCFA how they have been helped by this procedure. "Dear patient," the letter urged. "You should explain (if it is true) that your chronic illness was of months (or of years) duration for which you have sought help from doctors who did not use these techniques with repeated laboratory tests, examinations of x-rays that failed to solve your problem. The total cost of the cytotoxic food test and the provocative neutralization tests done in our office finally solving your problem was less than all the previous tests, examinations and x-rays put together. In view of your personal experience you urge that these useful techniques (cytotoxic and provocative neutralization testing for food and chemical allergies) be paid for the same as for the other diagnostic laboratory tests . . . You might conclude your letter with your belief that medical progress by reputable physicians, which actually reduces the cost of medical care for an illness, should never be opposed."

At least one recipient of the above letter thought otherwise: "Of all the medical testing that has been done to me in the last five years CYTOTOXIC blood tests were probably the worst waste of time, money and health . . . After my first series of cytotoxic tests, the technician upon my questioning actually admitted that the results were practically useless. But did that keep the doctor from ordering another series of these tests? You bet not. The second test results turned out differently than the first, making the whole regime ambiguous, and again I was told that the tests were 'not really THAT reliable.'"

Providers of cytotoxic testing often suggest that it is covered by health insurance. However, patients are required to pay in advance and may have trouble collecting from insurance companies who question the procedure. The FDA advises consumers who believe that they may have a food allergy to see a properly trained medical doctor specializing in allergy for a complete physical exam, medical history, diagnosis and proven therapy.

Many cytotoxic tests are being done illegally. About 300 food extracts prepared by licensed suppliers are approved by the FDA for allergy skin tests and allergy shots. Use of such extracts in cytotoxic testing violates federal law.

If cytotoxic testing is directed by a licensed health professional, it is under the control of state licensing authorities. If no doctor is involved, the testing is illegal but subject to control by local and state authorities as practicing medicine without a license. Clinics compounding their own allergenic extracts or obtaining them from sources within their own state are not readily subject to federal regulation.

The FDA has been investigating cytotoxic testing under the direction of its Office of Regulatory Affairs—which usually moves quite slowly. Meanwhile the agency has been trying to protect the public through press releases and an article in the October *FDA Consumer*.

But Mrs. Slavin's investigation makes it clear that advice through the media will not overcome the appeal of this simple test in our nutrition-conscious society. After broadcasting a 3-part series exposing cytotoxic testing as a fraud, she received several calls from people asking where they could get the test!

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author of *Vitamins and "Health" Foods: The Great American Hustle*.

Mrs. Monaco, a partner of White, Fine and Verville, of Washington, D.C., specializes in health law as it applies to unproven methods of medical management. She is also a founder and current president of Candlelighters Foundation for Childhood Cancer, an international peer support group for parents of children with cancer.

MORE MAIL-ORDER BUNKUM

Full-page ads in newspapers and magazines called Metabolite 2050 "the ultimate cure for fat." "Eat as much as you want and still lose weight," the ads promised, "Metabolite 2050 literally pulls & destroys excess fat from hard to reach storage sites—waist, hips, thighs and buttocks . . . and prevents the further conversion and storage of excess fat all over your body." The ads also claimed that, "Demand for this new product has been so overwhelming that this revolutionary new weight loss compound will not be available at your local pharmacy until February 15, 1985."

Metabolite 2050 is one of many products marketed by mail during the past two years by the Robertson-Taylor Company, 1110 West Sunrise Blvd., Fort Lauderdale, Florida. Others include Actavin-917 (for mental alertness), Anabolin-ATF (for weight loss), Arthrex (for arthritis), Calor-Bloc 30 (starch blocker), Cellulase-EFX ("cellulite" dissolver), Derma-Tec (wrinkle remover), Intercal-SX (for weight loss), L-2000 (aphrodisiac), Libutol 1500 (sexual stimulant), Lipogene GHX (diet aid), Medi-Tec 90 (for baldness), Mamralin-BX (bust augmentation cream), Orafirm-ACS (body shaping compound), Revitalin SL 90 (multivitamin), Synertrim No. 9 (spot reducer), Testorex-35 (for sexual dysfunction and impotence), and Tranquinol (nerve relaxer).

According to FDA and Better Business Bureau reports, Robertson-Taylor is a division of Intra-Medic

Formulations, Inc. (same address), which was incorporated in July 1981. Robertson-Taylor began operations in south Florida in November 1981, became incorporated in July 1982, and has operated mail drops under the names of W.G. Charles, Co., of Chicago, and J.F. Pharmaceuticals, of Westport, Connecticut. In November 1982, at the request of the FDA, a supply of Calor-Bloc was seized and destroyed under court order. During 1984, postal authorities secured mail-stop orders enabling them to return to the sender orders for six of the other products. The Federal Trade Commission has also been investigating the company's activities.

Most advertisers of bogus mail-order solutions to health or beauty problems are fly-by-night operators. Possibly concerned about this image, Robertson-Taylor offered the following reassurance in some of its ads:

"When ordering by mail, know who you are dealing with. The Robertson-Taylor Co. is a solid *established retail and mail-order firm you can count on*. We are members of the Fort Lauderdale Chamber of Commerce and the Prestigious Direct-Mail Marketing Association. The address you mail your check to is our *real* address—not some post office box or rented mailing address. It is the address of our order processing center, corporate offices and central retail outlet . . . The Robertson-Taylor Co. delivers exactly what we promise and we stand 100% behind our guarantee. We won't let you down."

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CRIMINAL CHARGES FILED AGAINST GENERAL NUTRITION!

On November 14, 1984, a U.S. Grand Jury returned a 7-count indictment against General Nutrition, Inc., plus three of its officers and two of its retail store managers. Headquartered in Pittsburgh, the company operates more than 1200 retail stores throughout the United States and Canada, doing business under the names General Nutrition Center and GNC. The defendants are charged with conspiring to defraud the FDA and violating provisions of the Food, Drug and Cosmetic Act which require that drug products be approved by the FDA as safe and effective prior to marketing. Court papers in the case allege:

- Between 1980 and 1981, the company, its president (Gary Daum), and two vice-presidents conspired to purchase evening primrose oil from Efamol Limited in London, England and to promote and sell it under the name Gammaprim for the prevention and treatment of high blood pressure, arthritis, multiple sclerosis and other ailments.

- In 1980, one of the defendants received a letter from David Horrobin, M.D., Ph.D., suggesting that Efamol be marketed without FDA approval. Referring to its supposed beneficial effects, the letter stated, "Obviously you could not advertise Efamol for these purposes but equally obviously there are ways of getting the information across." [Health food industry publications identify Dr. Horrobin as a former professor of medicine at the University of Montreal who is now affiliated with Efamol Research Inc., of Kentville, Nova Scotia. A recent article in *Whole Foods* states that he is the person responsible for initiating and encouraging much of the research on the effects of evening primrose oil.]

- Subsequent company memos describe an elaborate promotional scheme that included newspaper articles, radio talk shows, and publications for use in General Nutrition's retail stores.

- In addition, oral claims were made by retail employees to prospective customers. FDA investigators posing as customers at various stores in western New York State were told that Gammaprim would be better for treatment of high blood pressure than the prescription drugs Nitrostat or Diuril, and that it was good for arthritis as well.

- By virtue of these various claims, Gammaprim became a drug within the meaning of the law. However, rather than submitting the product to the FDA for premarket evaluation, defendants sought to disguise it as a food supplement, thereby attempting to defraud the FDA.

General Nutrition, Inc., operates the largest chain of health food stores in the United States and sells supplements by mail through its subsidiary, Natural Sales Company. According to a recent article in *Health Foods Business*, General Nutrition, Inc., netted \$4.25 million on sales of \$95.2 million during the first three months of 1984. The company was founded by David Shakarian who opened a store named Lackzoom in Pittsburgh in 1935 and added five more stores by 1941. In 1959, the name Lackzoom was changed to General Nutrition Centers. The first 12 stores outside the Pittsburgh area were opened during 1963. Gary A. Daum began working for the company that year and became its president in 1979.

NHF SPINS OFF FOUNDATION

The National Health Federation (NHF) has set up the Foundation for Health Research (FHR) to enable its supporters to make tax-deductible contributions. FHR's purpose is to fund "research in the areas of nutrition, preventive medicine and life extension—all fields neglected by the orthodox medical-industrial, governmental axis."

NHF a membership organization, was founded in 1955 by Fred J. Hart soon after a U.S. District Court ordered him to stop distributing 13 electrical devices with false claims that they could diagnose and treat hundreds of diseases and conditions. Many other NHF leaders have been in legal difficulty for questionable health activities. Over the years, the organization has supported a broad spectrum of unorthodox and unproven treatment methods in the name of "freedom of choice." Since its primary purpose and thrust have been political, direct contributions to it have never been tax-deductible.

However, according to NHF president Maureen Salaman, "The function of the FHR is exclusively scientific and educational. It will scrupulously avoid any political activity that would void its tax deductible status. Henceforth, our two separate organizations . . . while operating independently . . . will share overhead and staff, where legally possible . . ."

This is the third time NHF has announced that tax-deductible contributions can be made toward its work. During the early 1970s, NHF simply announced that dues and contributions were tax-deductible—until the Internal Revenue Service ordered this practice stopped. During late 1970s, NHF set up its Memorial Library as a separate corporation to which donations would be tax-deductible. However, this status was revoked by the IRS following a fundraising appeal which stated that the library's #1 priority was legalization of laetrile.

Grapefruit Diet Pills

Head Start Vitamin Products, of Fort Lauderdale, Florida, has notified retailers that "massive direct response television promotion . . . which will continue through next Spring, is building a tremendous consumer demand" for the company's Grapefruit 60/"Fat Burner" Diet Plan. The pills are said to act as a "fat-burning catalyst" and to contain "pure grapefruit extract in a base of tri-calcium phosphate with citrus bio-flavonoid complex . . . all the nutritive value of half of a fresh grapefruit, yet without the expense and inconvenience of eating grapefruit three times a day." The accompanying diet is claimed to combine food groups for "synergistic metabolism within your own system, to speed weight loss." Other items marketed by this company include: Head Start (a multivitamin formula claimed to improve hair condition as well as "virtually all body cellular development"); The Cellulite Program (Cellulite Eliminator Tablets and Creme); and VitaMan—The Man's Vitamin (claimed to help restore energy and eliminate any "marginal nutrient deficiency" which may be affecting work, sports or sex performance).

Head Start products were originally marketed by Braswell, Inc., of Atlanta, Georgia, whose various subsidiaries were subjected to more than 30 enforcement actions by the Postal Service during the early 1980s. In 1983, the Federal Trade Commission secured a consent judgment ordering Braswell, Inc. and its director, A. Glenn Braswell, to pay a civil penalty of \$610,000 and to stop false advertising of their products. A few months later, Mr. Braswell was sentenced in U.S. District Court to concurrent 3-year prison terms for perjury and income tax evasion and to 5 years' probation for mail fraud. [He was released from prison after serving a few months.] In 1981, an NBC television report estimated that Braswell, Inc., was grossing \$20 million per year.

Literature from Head Start Vitamin Products indicates that the Head Start name and product line were sold in 1983 to Sales/Services, Inc., an Atlanta-based company whose owners, Bob Wirt and Bettye Frye Keaton, had been involved in marketing the products to pharmacies and health food stores since 1976.

Briefs

Be a talk show guest? Nutrition professionals interested in telephone interviews can be listed free in a directory that will be sent in the Spring of 1985 to over 500 radio talk show station directors. To apply, send curriculum vitae and information about areas of special interest to *Nutrition Forum*, P.O. Box 1602, Allentown, PA 18105.

Caffeine/PPA drug combinations banned. The FDA has banned the marketing of all nonprescription drug products containing combinations of caffeine and phenylpropanolamine (PPA) as their sole active ingredients. Prior to October 29, 1984, such products were legally marketed if labeled as appetite suppressants, diet aids or diet aids/stimulants.

Chiropractic and nutrition. A recently reported mail survey of California chiropractors conducted in 1980 found that 84% of 2,715 respondents prescribed food supplements to their patients. To the question, "Do you believe that a chiropractor must examine each patient and arrive at a diagnosis?" 13% of respondents said "no" because they believed that "a chiropractor's only role in determining the condition of a patient is to analyze sub-luxations [spinal misalignments]."

GNC founder dies. David Shakarian, founder of General Nutrition, Inc., the nation's largest chain of health food stores, died of cancer on September 11th. He was 70 years old.

Quackery report available. *Quackery: A \$10 Billion Scandal*, the excellent 250-page report on Representative Claude Pepper's 4-year investigation into this subject, is available for \$6 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The order number is S/N052-071-00679-6.

Health food industry award. The National Nutritional Foods Administration (NNFA) has given its 1984 Rachel Carson Memorial Award to Michael F. Jacobson, Ph.D., Executive Director of the Center for Science in the Public Interest. NNFA is a trade association representing some 2,500 health food retailers, distributors and producers. Although Jacobson does not endorse most of the unorthodox practices promoted by the health food industry, his widely publicized criticisms of our food supply lend credibility to faddists who say government and the food industry shouldn't be trusted. Past Carson award winners include Emanuel Cheraskin, Linus Pauling, Gloria Swanson, Lendon Smith and Carlton Fredericks.

Price reduction. The price of *FDA Consumer* has been reduced from \$19 to \$17 for 10 yearly issues. Most articles in this excellent magazine are about food, nutrition or food safety. Orders should be sent to the Superintendent of Documents, Government Printing Office, Washington, DC 20402.

TOOTH DECAY: A DELICATE BALANCE

Sheldon Rovin, D.D.S., M.S.

Dental caries (tooth decay) affects over 95 percent of the United States population. Mainly because of water fluoridation, there has been a marked reduction in caries over the past quarter century which has been estimated to be as much as 30 percent. Nonetheless, dental caries is still one of the three most prevalent diseases in the U.S.—the others being periodontal disease and the common cold.

The tooth decay process has three basic participants: 1) *tooth enamel*, which is susceptible to the action of acid; 2) *dental plaque*, the not-readily-visible thin film of *bacteria* that accumulate on the tooth surfaces; and 3) *foods* (fermentable carbohydrates) which the bacteria act upon to form acid. Dental caries occurs because bacteria break down carbohydrates to form acids within the plaque which then demineralize (dissolve) the adjacent tooth enamel.

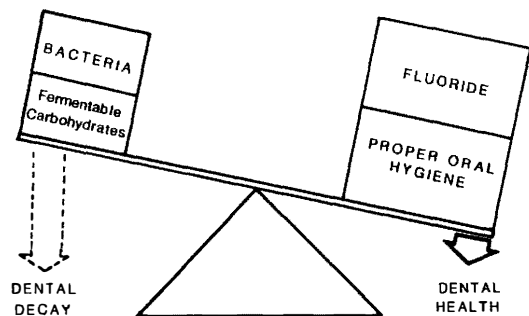
Tooth enamel becomes more resistant to acid penetration when adequate amounts of fluoride are available during the years that the teeth are forming (before they erupt). This is accomplished most efficiently through water fluoridation, but topical applications of fluoride to erupted teeth are also helpful. Individuals exposed to fluoridated water from birth onward develop about a third as many cavities as those in nonfluoridated communities.

Dental caries is reversible in its early stages; that is, the demineralized tooth surface can remineralize. This is facilitated by the natural properties of saliva which can neutralize the acid and cause calcium and phosphate to precipitate directly into demineralized enamel, causing it to remineralize and harden. Fluoride is also important to remineralization because it accelerates the deposit of calcium and phosphate and inhibits the production of acid.

Episodes of demineralization and remineralization alternate with each other. It is the balance between the two that determines how much decay takes place. Demineralization does not always lead to cavity formation. If the carbohydrates used by the bacteria to form acid are depleted, acid production stops and the pH of the plaque returns to its normal slightly alkaline state. At this pH, calcium and phosphate are deposited from the saliva through the plaque into the demineralized enamel, thereby repairing the affected area. Complete remineralization (healing) of the enamel can occur in this way.

Cavitation is the progression of dental caries to the point where a tooth's structure is sufficiently damaged to cause irreversible defects. It results when

the factors promoting dental decay consistently exceed the opposing factors. As indicated above, the promoting factors are bacteria and carbohydrates. The opposing factors are fluoride and proper oral hygiene. The balance between these factors is illustrated below.



The extent to which caries occurs depends on the carbohydrate content of one's food. However, all carbohydrates do not contribute equally. What counts is the type of carbohydrate, the frequency with which it is consumed, and the length of time it is permitted to remain adjacent to the tooth enamel.

The significance of the amount of carbohydrate ingested is probably less understood than the other aspects of the role of carbohydrates in causing caries. While animal studies readily show a correlation between carbohydrate consumption and caries activity, human studies are less clear. However, it appears that a certain minimum consumption level of carbohydrate (principally sucrose) is necessary for caries formation; and that below this level, caries occurs minimally if at all. As more carbohydrates are consumed, the caries level increases until it becomes rampant or very high. When caries becomes rampant, further carbohydrate consumption is apparently not influential.

Caries formation is also related to the type of ingested carbohydrate. Carbohydrates exist mainly as starches or sugars. The main culprits are the sugars in our diet, sucrose, glucose, fructose, lactose and maltose. Sucrose (table sugar) is by far the most common sugar eaten in the United States. Average sucrose intake is estimated to be about 100 pounds per person per year. Starches are less readily broken down into acids by bacteria than are sugars, and hence are less cariogenic.

The stickiness of the carbohydrate and the frequency of its ingestion both play important roles in caries formation. When dental plaque becomes sufficiently acid to dissolve the enamel, the length of time this acidity remains is crucial. Generally, each time a person eats

carbohydrates, the acid produced in the plaque is retained for about 10 minutes. This means that with each meal or snack, there is at least a 20-minute period when the acidity is sufficient for demineralization of the enamel. If these periods are prolonged or more frequent, demineralization and caries formation will increase. Thus, sticky carbohydrates which are retained on the teeth enable acid production to be prolonged. Examples of sticky foods include caramels, sugar-containing chewing gum, chocolate, raisins and other dried fruits. Products such as hard candies, lollipops, cough drops and mints are less sticky, but they are usually kept in the mouth for long periods and thus can prolong acid formation.

Soft drinks are commonly believed to be highly cariogenic because of their high sugar content, but they are actually less significant than these other types of carbohydrates because they are cleared from the mouth more rapidly. Carbohydrates in liquid form are retained for less time than are those in solid form, and consequently, tend not to prolong acid production in plaque. By the same principle, the drinking of water during and immediately after eating dilutes the acids being formed and helps decrease the acid retention time. Water also washes off some of the food.

The frequency that carbohydrate-containing foods are eaten probably is the most significant factor in caries formation, especially if the carbohydrates are of the sticky variety. Each time carbohydrates are eaten, acids are produced by the bacteria. If an individual eats carbohydrate-containing foods three times a day, caries-

causing acids will be produced and attack the teeth each time; since each episode is about 20 minutes long, the teeth are exposed to caries-causing acid approximately one hour a day. If an individual consumes the same foods five times a day—including snack times—the teeth will be attacked twice more for a total exposure of 1 hour and 40 minutes. The more frequently a person eats between meals, regardless of the quantity of carbohydrate involved, the greater the number of times during the day the teeth are subjected to the demineralizing effects of the acid.

When carbohydrates are eaten only at mealtimes, the teeth are subjected to less demineralization than when carbohydrates are consumed between meals as well. Thus tooth decay can be markedly reduced or even prevented by simply confining sugar intake to mealtimes; and it can be still further prevented by cleaning or at least rinsing the teeth after eating. The goal is to minimize the number and length of times the teeth are subjected to the acids produced by the bacteria in dental plaque. When the exposure time to acids is low, the balance between demineralization and remineralization is maintained and caries either does not occur or occurs only minimally. This, of course, is something that individuals can control.

Dr. Rovin is Professor and Chairman, Department of Dental Care Systems, University of Pennsylvania School of Dental Medicine, and co-editor of *The Tooth Robbers—A Pro-Fluoridation Handbook*.

READER FORUM

I'm surprised that your otherwise well-written first issue carried a brief on lowering telephone bills [NF 1:7] which looks like an ad. What does this have to do with nutrition?

Simone O. Adams, Dr.PH., R.D.
Storrs, CT

A few of our editors had feelings similar to yours, but the compulsive do-gooders among us prevailed. We reasoned that the possibility of helping readers save a lot of money outweighed the issue of relevance to nutrition. Incidentally, Consumer Reports has a complete analysis of this subject in its September issue.—Ed.

Congratulations. I just got the first issue and it's excellent! My partner and I wrote to the FDA in support of Paul Sage's petition [NF 1:2]. Would you like an article on nutrition quackery in dentistry?

John E. Dodes, D.D.S.
Woodhaven, NY

Yes, we are interested in articles on any practical aspect of nutrition.—Ed.

Thanks for your brief report on our study to determine whether beta carotene supplements can lessen the incidence of cancer [NF 1:7]. The actual number of randomized participants is not 27,000 but 21,991. We have been deeply impressed with their dedication.

Charles H. Hennekens, M.D.
Harvard Medical School

“GROWTH HORMONE RELEASERS” DON’T CAUSE WEIGHT LOSS

James Lowell, Ph.D.

No More Fat! No More Flab! No More Cellulite. No More Dieting!
An effortless aid for “hard-to-lose” groups or dieters

LOSE WEIGHT EVEN AS YOU SLEEP

So claim ads for a new generation of questionable weight-loss products, the “growth hormone releasers.”

The theory behind them seems to have come from the best-selling book, *Life Extension*. The authors, Durk Pearson and Sandy Shaw, claim that: 1) most teenagers can eat like horses without becoming obese, even if they are sedentary; 2) blood levels of human growth hormone (HGH) decrease as people age; 3) this decrease is responsible for weight gain; 4) when the amino acids arginine (5 to 10 grams) and/or ornithine (2.5 to 5 grams) and/or tryptophan (1 to 2 grams) are eaten on an empty stomach at bedtime, growth hormone is released from the pituitary gland; and 5) this burns fat and results in weight loss.

Soon after the book’s publication, products based on these ideas were marketed. Ads for Lipogene-GH, Nite Diet, P.M., Dream Away, Nite Time Diet, Super-Amino Night, G.H. Releaser, Nutri-Diet PM, Amino FB and HGH-3X all suggest that bedtime use will cause overnight weight loss due to increased release of growth hormone.

What are the facts?

Some years ago, scientists noted that blood levels of HGH increase after a meal rich in proteins. Although various amino acids contained in the proteins could cause this release, arginine had the greatest effect. In fact, some doctors have used it as a drug to try to help slow-growing children attain normal stature. Currently, however, growth hormone itself is administered to children lacking adequate amounts of it.

Although the above products contain arginine, the quantities are far below those necessary to cause HGH release. One brand, for example, taken as directed, provides 1 gram of arginine daily—the amount found in about 2½ ounces of beef. But tests reported in the June 26, 1969 *New England Journal of Medicine* show that a 150-pound woman requires some 13 grams to have any effect at all, and this has to be injected, not taken orally. The effective dose for men is twice as high. In practice, doctors used even more.

Even if 1 gram of arginine could produce growth hormone release, other lines of evidence repudiate the claims of the promoters. People vary in the amounts of HGH produced at different times in their lives. For example, even though adults are no longer growing, they produce more HGH than young children do; and premenopausal women produce more than men. There is also a spurt during adolescence. But these times of high hormone production do not correlate well with periods of either growth or weight loss.

Moreover, Pearson and Shaw’s idea that HGH plasma levels decrease with age is simply wrong. Extra HGH is metabolized so rapidly that plasma levels—relatively high during the few weeks after birth—remain fairly constant after that [*NEJM* 288:1384.1973].

Pearson and Shaw note correctly that some obese people produce lower than normal amounts of growth hormone when given releasers such as arginine. This indicates a difference in the way people’s bodies work, but it also means that if these authors are correct, the weight-loss pills would be least likely to work in the people who need them most.

Does the amount of HGH produced actually affect a person’s weight? If the Pearson/Shaw theory were correct, adults with below-normal HGH levels would be fat. But they are not. Nor are those who produce too much growth hormone especially thin. Instead, they develop acromegaly, a disease in which their hands, feet and faces become abnormally large and deformed. When Dr. Raymond Hintz, a leading authority on HGH, administered very high doses of growth hormone to normal adults in order to test its safety [*Lancet* 1:1276, 1982 and personal communication], weight loss did not occur! Thus, even if amino acid pills could cause a release of HGH, weight loss would not result.

Dr. Lowell, a board member of the National Council Against Health Fraud, is Professor of Life Sciences at Pima Community College, Tucson, Arizona and a columnist for *The Arizona Daily Star*.

COMING SOON
The Science and Politics of
Raw Milk
Factors Affecting Nutrient Loss

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FOOD SAFETY: WHAT ARE THE REAL ISSUES?

Manfred Kroger, Ph.D.

The American food supply is abundant, affordable and appealing. And contrary to pop-nutritionist claims, it's nutritious when the right dietary choices are made. As things stand now, Americans certainly enjoy the safest and most wholesome food in the history of mankind. We should be proud of that achievement and have faith in our food system. Yet many are worried that our food supply is dangerous.

Actually, unsafe food has bothered people since time immemorial. It took thousands of years to understand how contamination and spoilage can cause discomfort, illness or death. These insights developed slowly through a process of trial and error. Today's scientists are trying to determine what relationships—if any—exist between diet or specific foods and such problems as cancer, heart disease, allergy, and disorders of mood and behavior. As a modern technological society, it behooves us to address food safety as thoroughly as we address military efforts, space research and other endeavors of science—but it also behooves us to maintain a realistic perspective.

In 1979, a committee of the U.S. Department of Agriculture set out to identify and rank areas of food safety and nutrition that deserve further research. After two years of study that included input from 134 food research administrators from industry, government and universities nationwide, the committee listed the following food hazards in the order of their importance. Note that this ranking is quite different from that generated by the media and held by much of the public.

1. *Mycotoxins*. Little is known about fungal toxins since only about two decades have passed since the discovery that aflatoxins (produced by the common mold *Aspergillus flavus* and other molds) can kill and are carcinogenic. Since both human food and animal feed tend to become moldy, consumption of mold toxins is almost inevitable. Even livestock can pass them on in modified form to consumers. History tells us much about ergotism (once called "St. Anthony's Fire"), alimentary toxic aleukia and other problems related to fungal contamination. Are naturally occurring mold toxins in our

diet actually making people ill? We don't know, but it seems prudent to be cautious about molds and moldy foods. Agricultural practices are now closely monitored to minimize mold contamination. And products such as peanuts, tree nuts, corn and oilseeds are closely monitored to detect aflatoxins. Not all molds are harmful. Most people clean up or throw out mold-contaminated food. The less affluent seem to be the ones most exposed to mold toxins because they cannot afford to throw spoiled food away. History shows that ergotism often appears when there are food shortages.

2. *Bacterial toxins*. These include the death-dealing neurotoxins produced by *Clostridium botulinum* and the debilitating enterotoxins of several other species. There is reason to believe that many unrecognized toxin-producing bacteria exist and contribute to food hazards. Most of our efforts with home and restaurant hygiene are directed at preventing food poisoning due to bacterial toxins. Sanitation procedures and proper food treatment have helped keep populations healthy. Understanding the principles, food handler education, and respect for hygiene will continue to be the major factors in reducing disease and death from food poisoning.

3. *Food-borne bacterial infections*. Salmonellosis is the best known, with thousands of cases reported annually in the United States. This is only the tip of the iceberg, since most cases of food poisoning are not reported to the Centers for Disease Control. There is still much to be learned about how people get sick from bacteria in food. All of us are familiar with "stomach upsets," "intestinal flu" and "travelers' diarrhea," but relatively little is known about the actual disease mechanisms. Experts would probably agree that of all human misery in the world, now and before us, there has never been a cause bigger than the wrong kind of tiny bacteria within us. (It would be a mistake, however, to conclude that all bacteria are bad. Those used in food fermentation are safe and useful, and various bacteria normally living within the human intestinal tract are essential for life.)

4. *Chemical residues.* This category includes pest control substances, biologicals used in animal agriculture, and industrial chemicals appearing as chronic or sporadic environmental pollutants. Modern technology is blamed for the presence of all of these unwanted chemicals in our food; so it is important to fully understand the risks and benefits of the substances that human ingenuity has conjured up to work for us.

The risk-benefit balance of agricultural chemicals tilts heavily towards benefit. Some countries that don't use pesticides lose up to half their food to insects and other pests. Washing fruits and vegetables removes most of the surface contaminants; the tiny amounts that may remain represent no threat to human health. Those who speak of the "chemicalization of our food" do not fully understand the realities of agriculture. Nor do they have proper appreciation of our technological heritage. "Technological" and "chemical" have come to define modern life, mankind and progress. We merely require the wisdom to effectively harness technology and chemistry. Food became "technological" and "chemical" centuries ago because more of it was needed to feed ever increasing populations. At the same time concern was generated to keep unhealthy chemicals out of our diet. Continuing awareness will assure us of a "clean" food supply.

5. *Naturally occurring toxicants and allergens.* Many people believe that anything coming from Mother Nature must be benign. That simply isn't so. If man's actions leave some chemicals in our foods, nature contributes the rest. *Every bit of every piece of food is composed of chemicals.* A cup of milk contains thousands of chemicals and so does a bite of bread or a whiff of coffee. Nutrients are chemicals. Most of the hundreds of thousands of chemicals are neutral in character, some (quite a few) are toxic. Of course, we know about poisonous mushrooms, but to what extent are toxic alkaloids in potatoes or sulfur compounds in onions hazardous to consumers? Questions of this type should be explored further but kept in perspective.

6. *Process-induced toxicants.* The value of technology—including such developments as refrigeration, pasteurization, and canning—is obvious. There is still cause for concern about possible chemical interactions and toxic products formed during food processing—such things as nonenzymatic browning reaction products, or the secondary effects of chlorine in meat processing, and unique radiolytic chemicals created during food irradiation, to name only a few.

7. *Viral infections.* About 25% of the reported outbreaks of food-borne disease cannot be attributed to known bacterial agents and may be due to undetected viruses. Food animals are susceptible to a wide variety of viruses—which may be transmittable to humans. These areas are not well understood. Our knowledge about the significance of virus-induced cancers is slimmer still.

8. *Food additives.* Promoters of "organic" foods and a number of so-called consumer advocates have suc-

ceeded in making this the number one food safety issue in the mind of the general public. Although vigilance is in order, the fact is that food additives have been extensively studied—probably more so than the other categories listed here.

9. *Toxicants formed in the body.* This is a remarkable new area. The fact that cancer-causing nitrosamines can form in the human digestive tract should certainly be studied further. What else is going on inside us that is food-related and might precipitate harm? Do we harbor a diet-related "self-destruct" mechanism?

10. *Parasitic infections.* This was a big problem in Europe and North America until 50 years ago, and it still is a problem in many other parts of the world. Food is a major vector for human parasites, particularly the organism that causes trichinosis. In 1940, some 16% of the U.S. population was infected with trichinae, generally from meat products. Today there are fewer than 100 cases per year. New technologies, such as food irradiation, may reduce this number further.

Other subjects worthy of study include food interactions, foods that prevent toxicity, and even foods that prevent cancer.

Totally synthetic food restricted to the 40 to 50 nutrients essential for life might eliminate all the hazards mentioned above and provide perfect food safety. Can you imagine eating such a diet?

Dr. Kroger is Professor of Food Science at The Pennsylvania State University.

QUESTION BOX

Q. What does "low sodium" mean on food labels?

A. Currently, there is no legal definition of the term "low sodium." However, beginning July 1, 1985, sodium labeling will be required for foods that already carry nutritional labeling or that make a claim about sodium. At that time the labeling regulations will include the following definitions: *sodium free*—less than 5 mg sodium per serving; *very low sodium*—35 mg or less/serving; and *low sodium*—140 mg or less/serving. In addition, *reduced sodium* will mean that a food has been processed to reduce the usual sodium level by 75% per serving; and *unsalted* will mean that the food has been processed without the normally used salt.

Q. Is carotene a different name for vitamin A?

A. Vitamin A is found almost exclusively in foods of animal origin. Carotene refers to a group of compounds of plant origin that the body uses to make vitamin A. Thus, carotene is said to be a precursor of vitamin A.

WHO TOOK THE FUN OUT OF FOOD?

Virginia Aronson, R.D., M.S.

Remember when most of us could lick an ice cream cone without guilt? Or munch on a handful of chips without thinking about sodium? Or order a nice thick steak without considering the possible advantages of vegetarianism? Whatever happened to good old-fashioned (yes, hedonistic) pleasures of the palate?

"Junk-food" junkies hunger within all of us. Yet in modern-day America where almost anything goes, eating has become the sinful practice we commit and deny. Millions are alternating self-indulgence with on-the-wagon diet pledges and Spartan eating behavior. While committing crime in the sweets, they loudly deny guilt and chomp on tofu as "health food" devotees.

Why has the simple act of eating become such a complex issue? Why must our foods and overall diets be classified as "good" or "bad," "healthful" or "junky"?

Who took the fun out of food?

- **Mothers.** Sorry, Mom, but this is where many of our dietary hang-ups began. The stereotypically big, warm matron, bustling around the heavily laden dinner table, cajoling and encouraging everyone to eat, eat, eat, started most of us down the path to Foodproblemland. When food is equated with love and security, rejection of proffered goodies may be considered insulting. Much lifelong dietary guilt stems from parental derision of food waste and the belief that food left on your plate is somehow related to starving children in other countries.

- **Doctors.** Many unfortunate individuals receive an embarrassing reminder each year by the family physician that fat loss is in order. The accompanying "diet sheet" is usually as dry as the cottage-cheese-and-melba-toast menu it advises. Other dietary foibles (besides flab) are sternly addressed by physicians who pressure us to believe that eating is more a medical issue than a gustatory pleasure. Though most medical meetings are fueled on coffee and donuts, doctors cite dietary risks that threaten our eating enjoyment.

- **Dietitians.** Also distressing are the small number of militant dietitians who seem to regard diet as something to be swallowed like medicine (but without a spoonful of sugar to help it go down, because we eat too much of that already). Admonishing us to eat less of

everything we like and to substitute broiled liver and boiled greens, they suggest that good health requires daily tabulation of both caloric content and RDA percentages per serving for the limited food choices that remain.

- **Pop "nutritionists."** Many "health food" gurus seem to believe that personal experience in eating qualifies them as preachers for the religion of diet. Touting nutrition as curative for all ills, they claim that our food supply is nutrientless and the cause of aging and death. They are helped by naive consumer advocates to alarm Americans about supposed dangers lurking at the dinner table.

- **News outlets.** The media will publicize anything sensational—that is, saleable. Research reports are often distorted or exaggerated to concoct revolutionary nutrition "breakthroughs" and "deadly" dietary scares.

- **Advertising industry.** Fashion dictates that "thin is in." The mass media urge us to look like Victoria Principal or John Travolta, to stay young forever, and to have boundless vitality. But at the same time, mouth-watering ads are everywhere—telling us that we deserve a break and beckoning us toward oral indulgence.

- **Diet industry.** According to the diet mentality, bathroom scales can predict the future as accurately as the local palm reader. Consumers are being lured by magical diets, exercise gimmickry, guarantees of overnight fat melt-off, and other "effortless" weight-loss plans. All promise happiness ever-after—for an up-front fee, of course.

Today's society is robbing food not of essential nutrients but of fun. Eating *should* be one of life's great pleasures. As with most things in life, *moderation* is the key. In lifestyles balanced with good old-fashioned common sense, food can indeed be a fun part of healthful living. More voices are needed for moderation!

Ms. Aronson, a nutritionist/writer at Harvard University's School of Public Health, is the author of *Thirty Days to Better Nutrition*. She is also co-author (with Dr. Fredrick J. Stare) of *Dear Dr. Stare: What Should I Eat?* and *Your Basic Guide to Nutrition* (G.F. Stickley, Phila.).

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Briefs

Gayelord Hauser dies. On December 16, 1984, Benjamin Gayelord Hauser, author of *Look Younger, Live Longer* and 13 other books, died at age 89 of complications from pneumonia. He considered blackstrap molasses, brewer's yeast, yogurt, powdered skim milk and wheat germ to be wonder foods. He lectured frequently and was a partner in Modern Food Products of Milwaukee, a company that produces products bearing his name. According to an article in the *The Los Angeles Times*, his books sold almost 50 million copies.

Diet/cancer research. The National Cancer Institute has awarded \$453,971 to Nikolay Dimitrov, M.D., and colleagues at Michigan State University to explore whether vitamin E, beta-carotene and selenium can help prevent cancer. The study will involve both dietary analysis and long-term supplementation with selenium and vitamin E.

Fluoridation update. Surveys by the National Institute of Dental Research have found that the proportion of 9-year-olds with decay-free teeth rose from 29% in 1973 to 51% in 1979-1980. The U.S. Centers for Disease Control attributes most of this improvement to the availability of fluoride in community water supplies and in dental care. But it notes that 150 cities of 100,000—including Los Angeles and 8 more of the nation's 50 largest cities—are still not fluoridated. A free information kit for use in promoting community fluoridation can be obtained by writing to Paul Turner, Dental Disease Prevention Activity, Centers for Disease Control, Atlanta, GA 30333.

Food industry hotline. FoodCom, Inc., and The Food Institute are now operating an electronic mailbox and daily news hotline covering such areas as crop estimates, grower pricing, price changes, food sales, product recalls, and government agency actions. Access to the system, available by dialing a local phone number in any of more than 500 cities, requires a computer, word processor, communicating typewriter or other information terminal. There is no minimum charge; users are billed \$25/hour for actual use. Additional information can be obtained from Mr. Anthony DeBello, FoodCom, Inc., Main Line Industrial Park, Lee Boulevard, Frazer, PA 19355.

Less effort against quackery? In the March/April 1985 *Food and Nutrition News* Kristen W. McNutt, Ph.D., J.D., writes that the print and electronic media are the main forces shaping food decisions, and that most media information originates from unreliable sources. To counter this, she suggests that qualified nutritionists "take the offensive with a positive message" and "forget about fighting charlatans." She feels that "people who take the charlatan's bait" will not be swayed by scientific facts because "they believe what they want to hear." Dr. McNutt, who is Director of Scientific and Public Affairs for the Good Housekeeping Institute and a former president of the Society of Nutrition Education, urges more interaction with local writers and broadcasters. She suggests that "quotable quotes" and other useful source material should be offered, and that congratulatory letters should be sent whenever media presentations are good. A copy of the newsletter can be obtained from: F&NN Editor, National Live Stock and Meat Board, 444 N. Michigan Ave., Chicago, IL 60611. [Editor's note: Dr. McNutt's article contains excellent suggestions for media penetration. However, I believe her perspective on quackery is too pessimistic. Most victims of quackery are unsuspecting rather than gullible and can be influenced by facts encountered often enough.]

Judge orders FDA action on raw milk. U.S. District Judge Gerhard A. Gesell has ordered the Department of Health and Human Services to respond by March 15th to the Health Research Group's petition that the sale of unpasteurized milk be banned [see NF 2:1-4]. "The facts here speak for themselves," the judge noted. "Officials at the highest levels of the Department of Health and Human Services have concluded that certified raw milk poses a serious threat to the public health . . . The Food and Drug Administration has twice proposed, in 1973 and 1983, that all milk in interstate commerce be pasteurized. Hundreds of cases of serious gastrointestinal infections have been reported since . . . The only issue here is the reasonableness of the agency's delay, and the only remedy sought is a judicially established schedule for agency action. The Department's justification for its continued delay is lame at best and irresponsible at worst."

COMING SOON
Update on Food Irradiation
DHEA: Facts vs. Hype
Schisandra
Travelers' Diarrhea

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Allergy testing for animals? According to *East West Journal*, Physicians Laboratories in Los Angeles offers a \$55 blood test it claims can indicate the presence of food sensitivity in animals. At the lab, processed blood serum is inoculated onto 46 slides containing common pet food ingredients. Elimination of supposedly troublesome foods from the diet is then recommended.

Updated text attacks food faddism. A 440-page third edition of the college textbook, *Consumer Health—A Guide to Intelligent Decisions*, by Harold A. Cornacchia, Ed.D., and Stephen Barrett, M.D., has just been published by Times Mirror/Mosby, 11830 Westline Industrial Drive, St. Louis, MO 63146. Three of its 22 chapters give thorough coverage to basic nutrition concepts, nutrition fads and fallacies, and weight control issues. Copies are available for \$26 postpaid from the Lehigh Valley Committee Against Health Fraud, P.O. Box 1602, Allentown, PA 18105. Requests for desk copies should be sent to the publisher.

Pritikin commits suicide. According to press reports, Nathan Pritikin killed himself on February 21st by slitting the veins in his forearms with a razor. During the previous ten days, he had been undergoing chemotherapy for leukemia at a hospital. The condition was diagnosed in 1958 but was in remission until recently, when it became terminal. Pritikin, an inventor with more than 25 patents in chemistry, physics and electronics, attracted nationwide attention through his controversial diet and exercise books. According to *People Magazine*, 18,000 people have gone through the program at the Pritikin Longevity Center in Santa Barbara since it opened in 1976. Following Pritikin's death, telephone calls and reservations for treatment at the Center were reported to have risen sharply despite its cost of up to \$6,800. Pritikin's son Robert is expected to continue his father's work.

Recalls hurt consumer confidence. Food Marketing Institute President Robert O. Aders has expressed concern about the timing of food product recalls: "We receive the news at the same time as the media. And it seems to happen a lot at 5 p.m. on Friday. The system does not leave us nearly enough time to spread the word to our 1,300 members, who must in turn notify some 17,000 supermarkets. An unfortunate consequence of this is awkward confrontations with the news media. They learn about recalls before most food retailers; in fact, that is the way the recall system is designed, although most reporters don't know this. As a result, they come into our stores and seeing the recalled products still on our shelves, they focus on the fact that consumers are at risk." Speaking last September at the National Consumer Product Safety Conference for Retailers, Mr. Aders suggested that recall procedures take into account the need to protect consumer confidence in the food system. He said that either retailers should be informed ahead of the news media or the media should be made aware that

they are the principal messengers of recalls. Except in life-or-death situations, manufacturers could be given a 24-hour lead for voluntary recalls, and supermarkets could be given a few hours to clean the shelves off before the media are told.

FTC Chairman opposes alcohol advertising ban. Testifying before a Senate subcommittee, FTC Chairman James C. Miller III, said that "most alcohol advertising appears as carefully packaged image promotion directed at brand recall in association with certain images of taste and style." But he asserted that while this advertising has considerable effect on the choice of brands or beverage types, it has "no effect on overall alcohol consumption, much less abuse. He also said that his agency, which is considering this issue, has found little evidence demonstrating that an advertising-related remedy would be effective in reducing alcohol abuse.

Herbalife. An article in the February *Forbes Magazine* states that Herbalife's gross sales were \$488 million in the year ending January 31, 1985. According to company founder and chief executive, Mark Hughes, more than 700,000 distributors are selling his products in the United States, Canada, Australia and the United Kingdom. Evidence exists that Herbalife distributors in various parts of the country are making product claims that are untrue and/or illegal, but it is unclear whether the literature involved originated at company headquarters or at local levels. The FDA has been investigating the company but has taken no enforcement action as yet. Several prominent journalists have conducted extensive investigations that should be made public within the next few months. Meanwhile, dietitians nationwide are experiencing considerable difficulty in coping with consumer questions about the safety and effectiveness of Herbalife products.

Diabetic fakery. A study at Albert Einstein College of Medicine (New York City) found that 14 of 19 diabetics using home blood glucose devices reported lower test values than were actually found. Unknown to the patients, the devices contained memory chips that stored actual values with times and dates of the readings. After patients were told about the memory chips, their recording became 100% accurate. Experts interviewed by *Medical World News* [Feb. 25, 1985] thought that many diabetics report better-than-actual blood and urine test results in an attempt to please their doctors.

Aspartame hearings sought. The Community Nutrition Institute, aspartame's most persistent opponent [see NF 1:2-4], has asked the U.S. Court of Appeals for the District of Columbia to require the FDA to hold "factual hearings" on the sweetener.

"Organic" legislation. During the current session of Congress, proponents of the Agricultural Productivity Act will seek its passage either separately or as part of 1985 omnibus farm legislation. Sponsored by Rep. Jim Weaver (D-OR), this bill provides \$2 million for activities related to "organic" farming [see NF 1:6].

BLUE-GREEN MANNA WINS LOWELL AWARD!

James Lowell, Ph.D.

Having analyzed hundreds of product promotions, I believe I can spot questionable ones with great facility. Given this experience, I've decided to give annual recognition to the company which, in my opinion, has produced the most outlandish sales campaigns and marketing schemes. I believe such recognition should be based on three criteria:

- 1) How imaginative is the pseudoscientific rationale for its use?
- 2) How long and ridiculous is the list of conditions against which it is claimed effective?
- 3) How well has it survived government attempts to remove it from the marketplace?

Although competition—as usual—was quite stiff, the 1984 winner is clearly K.C. Laboratories of Klamath Falls, Oregon. This company markets a product called Blue-Green Manna, along with such variations as Mannapep, Mannacol, Mannazen, Mannapro, Mannastat, and Animal Repair Manna.

Basic to all the formulations is a pond scum which has been extracted from Upper Klamath Lake (located 4000 feet above sea level) and freeze-dried to maintain its "biological integrity." The organism involved was originally claimed by its promoter, Victor Kollman, to be a blue-green alga known as *Anabaena*. He later claimed that the genus was actually *Aphanizomenon*, and finally settled on *Alpanae-Klamathomenon*.

Blue-green algae are microscopic green plants, but what alga, if any, is really in these products is unclear. *Alpanae-Klamathomenon* is not a recognized algal genus, and Kollman recently told the FDA that his products don't contain *Aphanizomenon*, either. I bought a bottle of Mannacol and am sure only that it contains something green and lots of alcohol. The product's nutrient value is not impressive, either. Its label lists chlorophyll, 9 vitamins, 10 minerals and ash, and says nothing about the alga. However, at the suggested dosage of 1 to 2 droppers-full per day, a user would receive less than 1/500th of the U.S. Recommended Daily Allowances of most of them.

Although various algae have been studied as possible sources of food for both humans and animals, they have never come into wide usage because they are not sufficiently digestible. Some, like dried kelp, are used primarily as seasonings and as "sea vegetables" in certain kinds of cooking.

Literature from K.C. Laboratories describes Kollman's algae in the following imaginative ways:

- *Alpanae Klamathomenon* is the oldest living cell in the history of the world that has never changed. They never get sick. They cannot be poisoned with insecticides, poisonous sprays, smog or other toxic chemicals . . . They can even withstand bombardment with

laser beams. They do not mutate and they cannot be destroyed by any ordinary means.

- This amazing cell is resistant to all diseases known to man.

- These organisms are special because they contain the native germ plasm in its intact and non-evolved state from which the human race emerged.

Kollman claims that the alga works because it is "essentially a pure breatharian" and can live on air alone. This, he says, causes it to have a "high concentration of neurotransmitter-like compounds." Because neurotransmitters are chemicals necessary for brain function, the Blue-Green Manna is advertised as a "brain food."

The credentials of Kollman and his "research" are as questionable as his "scientific" explanations. Bruce Detlefson of *The Howard County Times*, Columbia, Maryland, reported recently that although Kollman's promotional literature claims he has a Ph.D. in biochemistry from the University of Iowa, the school's registrar said that no one by that name had ever been enrolled. Moreover, when my college library attempted to secure copies of the scientific articles upon which Kollman bases his claims, it found that they either did not exist or that they were in journals so obscure they could not be found, even through the inter-library network.

Promoters of Blue-Green Manna claim that their products are effective against allergies, Alzheimer's disease, arthritis, diabetes, epileptic seizures, herpes, high/low blood pressure, Hodgkin's disease, hyperactivity, leprosy, leukemia, menstrual cramps, migraine headaches, psoriasis, sickle-cell anemia, senility, stress/strain, ulcers, warts, and even poor grades in school. The manna is claimed not only to help narcolepsy (a condition in which adults fall asleep suddenly and uncontrollably) but also to help babies sleep better at night. It supposedly reverses the aging process and can cause weight loss. In fact, according to Kollman, if everyone took his products, there would probably be world peace.

Promotional material touting blue-green algae for Alzheimer's disease is especially blatant. A 1982 article by Kollman claims that his manna has been able to "alleviate or minimize symptomatology" associated with this condition. Literature from a distributor of another line of alga products even contains a diet plan plus a 2-page "suggested protocol" of dosage schedules for six weeks of "nutritional support."

Manna is also supposed to help with sexual problems. In an ad in the March 1984 *Hustler* magazine, publisher Larry Flynt, who has been paralyzed from the waist down since being shot in 1978, said he experienced his first orgasm in years after taking Manna for only five months. According to Detlefson, Kollman has

even claimed in lectures that his products can turn gay males into heterosexuals.

Kollman has advised his distributors that Blue-Green Manna was approved by the FDA in both 1980 and 1983—a claim vigorously denied by David Chesney, Supervisory Investigator at the Portland FDA office. Kollman has also advised his distributors that the products don't fall under FDA jurisdiction and that they aren't obligated to speak to FDA investigators. But Chesney believes that the products are subject to FDA control.

During the summer of 1983, a deputy U.S. marshal, accompanied by an FDA investigator acted on FDA charges that the alga was an "unsafe food additive" and attempted to seize Manna pills with a retail value of more than \$100,000. The first seizure attempt was unsuccessful because the seizure papers contained the wrong scientific name (Kollman was in the process of one of his name changes). On August 5th, the seizure

was completed and Kollman was arrested on charges of interfering with a federal law enforcement official performing his duty—but the charges were later dropped. On November 8th, the court ruled that the alga was not a food additive as charged by the FDA, but the agency is determined to take further legal action.

Regardless of the litigation's outcome, potential buyers should keep in mind that these products, which retail for \$20 to \$48 a bottle, contain little in the way of nourishment. Someone wanting alcohol could buy Manna for \$20 an ounce—the equivalent of paying \$512 for an ounce of booze.

Dr. Lowell, a board member of the National Council Against Health Fraud, is Professor of Life Sciences at Pima Community College, Tucson, Arizona and a columnist for The Arizona Daily Star.

AVELOZ

Varro E. Tyler, Ph.D.

"Exotic Shrub may be key to victory in cancer battle! Aveloz now being used for tumor reduction cancer treatment."

"One drop of [aveloz] sap, diluted in a glass of distilled water and taken by the tablespoonful every hour, eliminates cancerous growths in one week."

These are just some of the statements used to publicize aveloz, a remedy prepared from the milky sap of a Brazilian shrub with the scientific name *Euphorbia heterodoxa* Mull. Arg. The saps of various *Euphorbia* species have been used in folk medicine since at least 400 B.C. because of their corrosive properties. *Euphorbia heterodoxa* is commonly known as killwart because its sap—used by the Amazon Indians and later the Dutch, Portuguese and Spanish Galician settlers in northeastern Brazil—was thought to be effective when applied to warts and tumors, particularly those located on the face.

A Brazilian physician named Pamfilio is said to have introduced aveloz into conventional medicine sometime in the 1880s or 1890s, but it remained obscure until just a few years ago. Today it is sold in the United States in liquid form by herbal practitioners. The promotional literature recommends consumption of five drops in a half glass of water or herb tea, three times a day, for the treatment of cancer, benign tumors, cysts and warts. Aveloz is also marketed in the form of an ointment intended for local application.

Because of its relative obscurity, the aveloz plant has apparently never been analyzed chemically. However, it is common knowledge that about 90 percent

of the species of the Euphorbiaceae (spurge) family yield a white latex-like sap that is extremely irritating to the skin and mucous membranes and can produce skin inflammation, conjunctivitis of the eyes, burning of the mouth and throat, diarrhea, and gastroenteritis.

Recently it was found that the chemical compounds (certain diterpene esters) responsible for these irritant effects also act as tumor promoters. Such compounds do not cause cancer by themselves but seem to interact with sub-threshold doses of carcinogens to induce cancer in laboratory animals. (Experiments to test this in human beings are obviously not possible.) So, although its exact chemical constituents are unknown, it is apparent that aveloz has serious potential for harm.

Curiously, there may also be some potential for good. In recent years, researchers have shown that extracts of certain plants in the *Euphorbia* family do indeed show antileukemic activity that could be attributed to their content of certain diterpene esters. Obviously, it is important to learn which specific structural features of these constituents cause them to act as tumor promoters, on one hand, and as antileukemic agents on the other. Obviously, too, it would be highly imprudent for cancer patients to experiment with this possibly two-edged sword at this time.

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs.

STUDY FINDS ABILITY TO SMELL DECREASES WITH AGE

A study of 1,955 volunteers ranging in age from 5 to 99 found that the ability to smell is usually at its best between the ages of 20 and 40 [Science 226:1441-1443, 1984]. It diminishes slightly through a person's 50s and 60s but drops rapidly through the 70s and 80s. The researchers found that more than 60% of those between the ages of 65 and 80 had severe losses in the sense of smell, and nearly one-fourth had lost all ability to smell. After age 80, more than 80% had major impairment and almost half had lost all ability to smell. At all ages, women scored higher than men, and smokers scored lower than nonsmokers.

The study was led by Dr. Richard L. Doty of the University of Pennsylvania School of Medicine. Each volunteer was tested with 40 substances, using the recently developed University of Pennsylvania Smell

Identification Test described in *Physiology and Behavior* 32:489-502, 1984.

It is known that the ability to smell is closely linked with the ability to taste, and that aromas hitting the nose from a dish of food are interpreted by the brain similarly to sensations from the taste buds. Commenting on this in a newspaper interview, Dr. Doty added, "It's no surprise that elderly people complain that food doesn't taste good anymore. Many people don't realize it's because they can't smell . . . Because food is no longer enjoyable, many don't eat well and become malnourished."

Reprints of the above references are available from Richard L. Doty, Ph.D., Director, Smell and Taste Center, 5 Ravdin Building, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19143.

COURT RULES IN HAIR ANALYSIS CASE

On January 30th, in response to a Complaint by the Federal Trade Commission [see NF 1:12], the U.S. District Court for the Eastern District of Virginia issued a permanent injunction against Arthur, Ethel and Alan Furman and any business entities through which they may act. The order forbids "holding themselves out . . . to persons other than health professionals, as being able on the basis of hair analysis, to measure accurately the element content of a person's body or to recommend vitamin, mineral or other dietary supplements which can correct chemical excesses and deficiencies in a person's body." Although evidence in the case indicated that the defendants' company, A & A Laboratory, Inc., had grossed over \$1½ million for the years 1979 through 1983, the judge ordered no fine or restitution.

On February 25th, the Court issued an amended

order defining the health care professional as "one who, directly through a business entity, with or without state authority, holds himself or herself out as a nutritionist or as one who deals with the prevention, diagnosis, treatment, cure or alleviation of human physical or mental ailments, conditions, diseases, pain or infirmities."

Companies which had been marketing hair analysis directly to consumers prior to the FTC's action against the Furmans appear to have stopped doing so. However, use of hair analysis by licensed health practitioners (mostly chiropractors) and unlicensed "nutritionists" will remain a problem without further government action. The judge in this case apparently believes that "professional" use of hair analysis should be regulated by state rather than federal authorities.

LOCAL HEALTH PROMOTION LAW

An ordinance to encourage food establishments to engage in health-promoting activities was enacted in September of 1984 by the Allentown, Pa., City Council. Under the program, the annual license fee was raised from \$30 to \$100, but \$25 is rebated for each of the following achievements: 1) at least 10% of employees become certified in cardiopulmonary resuscitation and anti-choking procedures; 2) at least 25% of seating is in nonsmoking sections; and 3) at least one food service manager becomes certified by completing a 14-hour FDA-approved course and passing a written test. (The course, which has been endorsed by the National Restaurant Association, is given annually by the Allentown Health Bureau.) Owners doing all three thus pay \$25 instead of \$100 for the license fee. The ordinance also requires food establishments using food fresheners (e.g.,

sulfiting agents) to conspicuously display a notice identifying the type of freshener used. A first aid for choking poster must also be conspicuously displayed.

Four months after enactment of the ordinance, 25 out of 500 establishments had met the CPR requirement, and the Health Bureau estimated that 50 to 75 more would comply by the end of 1985. The number with nonsmoking facilities had risen from 15 to 35, with another 25 more expected by year's end. The number with certified food managers is expected to increase from 40 to 80. Details of the program can be obtained from its originator, Gary Gurian, Director, Allentown Health Bureau, 723 Chew Street, Allentown, PA 18102. Information on the Food Service Manager Training and Certification Program can be obtained from the Division of Retail Food Protection (HFF-220), Food and Drug Administration, 200 C Street, S.W., Washington, DC 20204.

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UPDATE ON FOOD IRRADIATION

Kathleen A. Meister, M.S.

"Frozen foods are antedated, ask for yours IRRADIATED!"

Twenty-eight years ago, when this little verse appeared in *Science Digest*, food irradiation was new and seemed quite promising. Although subsequent research has been favorable, opposition to government approval still exists.

Irradiation is accomplished by treating foods with ionizing radiation (gamma rays) from radioactive cobalt or cesium, or from devices that generate electron beams (beta rays) or x-rays. Irradiation has many possible uses in food processing, most of which prolong the useful life of foods. It cannot make foods radioactive because the nuclei of the atoms in food cannot be changed by the types of radiation used. The permitted treatments are specified by government regulations. Two general categories of radiation dosage can be used. "High-dose" radiation means exposing foods to 1 to 6 megarads. "Low-dose" radiation refers to treatments below (often far below) 1 megarad.

High-dose radiation can kill all the microorganisms in food just as heat does during the canning process. Irradiated foods are often superior in flavor and texture to their heat-sterilized counterparts because irradiation doesn't cook the food as heating does. Although high-dose irradiation is not likely to have widespread commercial use in the U.S., it has great potential value to two groups. One is the military, which needs decent-tasting foods that can be stored without refrigeration for use by troops in the field. The other is hospitals, which need bacteria-free foods for immunosuppressed patients whose resistance to infection is so low that they can develop serious infections when exposed to the otherwise harmless organisms found normally in most foods.

The U.S. Army sponsored much of the early research on food irradiation. Irradiated foods are still not included in Army field rations, since they do not have legal approval. But NASA has been using them for astronauts' in-flight meals.

The Fred Hutchinson Cancer Research Center in Seattle has received special FDA permission to serve

irradiation-sterilized foods to bone marrow transplant patients and to those with immunosuppressive diseases. This enables patients to enjoy such foods as bread, cereals, pasta, nuts and candy, none of which would be palatable after heat sterilization.

Low-dose irradiation has many possible commercial uses because it can kill insects and reduce the number of microorganisms in fresh or processed foods without significantly affecting flavor or nutritional quality. The recent ban on the fumigant ethylene dibromide (EDB) prompted much of the renewed interest in irradiation as a substitute. Irradiation can also extend the shelf life of perishable foods such as seafoods, inhibit the sprouting of potatoes and onions, delay the ripening of some types of fruit, and decrease mold growth on fresh produce. The pork industry is excited about irradiation because it can virtually eliminate the hazard of trichinosis at a cost of less than 1 cent per pound of pork.

Extensive research has been conducted to determine whether irradiated foods are safe to eat. Although the process does not induce radioactivity, it does cause chemical changes. It turns out, however, that virtually all of the chemicals produced also occur naturally in foods or are produced by cooking or other conventional food processing techniques. Scientists studying irradiation have concentrated their attention on whether it produces chemicals not found in foods processed in other ways. At first it was thought that there were many such substances. But now it appears that very few exist and that none is cause for concern.

Many animal feeding studies have been carried out on irradiated foods to determine their safety. Although some of the early researchers reported adverse health effects, it is now clear that they resulted from faulty experimental design rather than from the irradiated foods. For example, when animals were fed a diet consisting almost entirely of the irradiated food product under study, the diets were so unbalanced that the animals became ill from malnutrition. More recently, properly conducted studies have not shown similar adverse effects.

Food irradiation is regulated by the FDA under the terms of the 1958 Food Additives Amendment to the Federal Food, Drug and Cosmetic Act, which specifies that irradiation must be regarded as a food additive. Of course, irradiation is a process, not an additive. However, Congress apparently grouped it with food additives in order to ensure that irradiation would have to meet the stringent safety standards for additives.

Although no evidence has been found so far that irradiated foods pose any hazards, government authorities have deferred final judgment on the safety of foods sterilized by high-dose irradiation until some current studies are completed. The findings of a recent large-scale study of irradiated chicken conducted by the U.S. Department of Agriculture are now in the hands of the FDA, which has the unenviable task of interpreting more than 10,000 pages of data.

Low-dose irradiation treatments are generally agreed to be safe and are being used in at least 25 countries. In 1981, an expert committee of the World Health Organization concluded that foods irradiated with doses up to one megarad (which encompasses almost all applications of irradiation other than food sterilization) were safe.

In the United States, irradiation has been approved for only three specific uses. In the 1960s, it was approved for sprout inhibition of potatoes and insect disinfestation of wheat and wheat flour. Neither application has been used commercially. Some people have construed this to mean that there is little commercial interest in food irradiation. Actually, there is great interest, but the process isn't economically viable unless facilities can handle large quantities of food on a year-round basis—which can't happen until more uses are approved. It would not be cost-effective, for example, to construct an irradiation facility that could be used only during the short period each year that potatoes are harvested. Irradiation was approved in 1983 for control of microorganisms in spices, and commercial application has begun.

The fact that irradiation is defined as an additive has led to some problems in getting it approved. It is not possible to test the safety of a process in the same ways that additives are tested, and for a long time it was unclear just what kind of evidence the FDA would require for approval. In 1979, the agency began to take steps to resolve this uncertainty by establishing a committee to recommend criteria for safety evaluation of irradiated foods. In 1980, the committee made its recommendations. And in March 1981, the FDA took the first step toward translating them into formal agency policy by publishing in the *Federal Register* an "advance notice of proposed rulemaking" which proposed general approval of low-dose irradiation treatments for many foods.

Although this was a major step forward, it was still a long way from actual approval. The type of notice is merely an announcement that a government agency is considering the possibility of doing something. It is

customarily followed by an opportunity for people to submit comments, an evaluation of those comments, a second agency announcement called a "proposed rule," another comment period, and then the actual regulation. This process can take years. In the case of low-dose food irradiation, it has already taken four years and has not been completed. The proposed rule didn't appear in the *Federal Register* until February 1984, and a final rule has not yet been published, although it is expected this year.

The FDA's low-dose irradiation proposal, in its most recent form, would do the following:

- 1) Permit irradiation of fruits and vegetables to inhibit growth and maturation (i.e., sprouting, ripening)
- 2) Permit irradiation of any food with doses up to 100 kilorads for the purpose of insect control
- 3) Permit irradiation of foods for other purposes at doses up to 100 kilorads if it can be shown that this would accomplish its intended purpose
- 4) Not require irradiation to be declared on retail food labels (a change from the current law, which requires it).

The FDA proposal has received widespread support but has also encountered disappointment and opposition.

The 100-kilorad limit is one source of disappointment. This is only one-tenth of the radiation level permitted by the World Health Organization. It eliminates some potential uses of irradiation that require slightly higher doses and it would impede international trade in irradiated foods. The pace of the rulemaking process is another cause of disappointment. It has been unusually slow even by the turtle-like standards of federal regulatory agencies.

The proposal's most notable opponents are the Health Research Group (HRG), a component of the Public Citizen organization founded by Ralph Nader, and the National Health Federation (NHF), a health food industry organization which has campaigned in favor of laetrile and unpasteurized milk [see NF 2:1-4] and against water fluoridation, compulsory immunization of children, and government regulation of vitamin sales.

HRG's director, Sidney Wolfe, M.D., contends that irradiation has not been adequately tested for safety. Most experts, including those at the FDA, disagree. Dr. Wolfe has also expressed concerns about radiation hazards to workers at food irradiation facilities and about the transport and disposal of hazardous radioactive materials.

Wolfe and some like-minded opponents of irradiation make it sound as though the transport and occupational safety issues are new. In fact, the necessary precautions are well understood because a substantial irradiation industry already exists. At least 30 percent of the sterilization of medical devices in the U.S. is done with irradiation, according to John Masefield, head of the irradiation firm Isomedix, Inc. There are some 50 medical product irradiation facilities in this country already. In addition, more than 1,000 hospitals use radi-

oactive cobalt for radiation therapy. The occupational safety record of the irradiation industry is excellent, and the shipment of cobalt rods to and from irradiation facilities is routine. In fact, the shipping containers for these rods are so durable and well shielded that the Department of Transportation allows shipment by common carrier.

Health Freedom News, NHF's monthly magazine, has published several articles suggesting that irradiation is dangerous. In its February 1985 issue, a letter from one reader even insists that, "Eventually, *all* edibles will be zapped with radiation . . . When this happens, all life-giving vitamins, minerals, enzymes, amino acids, and other food nutrients necessary to health will be destroyed. Foods POISONED to death! And—we, in turn, also POISONED to death! Literally millions of people will develop cancer and other degenerative diseases to suffer and die five to ten years down the road." The magazine's editors (NHF's president and board chairman) respond by thanking the reader for "manifesting this very real problem."

Unlike HRG, however, NHF has not expressly opposed FDA approval of irradiation. Instead, it has been generating a nationwide letter-writing campaign aimed at getting FDA to require that irradiation be declared on food labels. NHF's philosophy states that people should be allowed to take any risk they want with their health, so long as they are informed of the risk. This viewpoint is contrary to the basic concept of U.S. food and drug law that only safe new products and processes should be approved. However, consumers who do not support the NHF's view of "health freedom" have also called for labeling of irradiated foods.

The case for labeling is simply stated. Some people want to know whether their food has been irradiated so they can make an informed choice of foods. The arguments against labeling are more complex. Obviously, some proponents of irradiation oppose labeling because they think that people won't buy foods labeled "irradiated." But even if people were perfectly willing to buy labeled foods, the cost and logistics of labeling might make it impractical.

When unprocessed foods are sold directly to consumers, they usually have no label at all. The difficulty and expense of putting labels on foods that don't normally have them might mean that fresh fruits, vegetables, meats, and seafood would never be irradiated. Yet

most of the potential applications of irradiation involve just these commodities.

If irradiated commodities were used as ingredients in processed food products, extensive recordkeeping would be necessary to ensure correct labeling of the final products. This would put irradiated ingredients at a competitive disadvantage.

Radiation Technology, Inc., which is irradiating spices, reports that some food companies won't accept irradiated spices because of the costs of recordkeeping and labeling. Instead they are using spices decontaminated with ethylene oxide, which does not have to be declared on food labels, even though they acknowledge that many of the irradiated spices are of better quality.

There is no health reason to declare irradiation on labels. No special population subgroup that needs to avoid irradiated foods in the way that phenylketonurics need to avoid aspartame. There is no allergy to irradiated foods as there is to Yellow Food Dye #5 (tartrazine). Nor do consumers need to know that a food has been irradiated in order to handle it safely. It might even become desirable to label some foods that were not irradiated! If irradiated pork becomes the standard, as the pork industry hopes it will, warning labels may well be required to warn consumers that pork that had not been irradiated should be thoroughly cooked.

Senator Slade Gorton and Representative Sid Morrison (both R-WA) are the principal sponsors of the Federal Food Irradiation Development and Control Act of 1985, which is designed to promote commercial use of food irradiation in the U.S. Even if this bill never passes, its introduction has generated interest in irradiation and helped to publicize its positive aspects. The Morrison-Gorton bill would redefine irradiation as a process, but still maintain FDA responsibility for assuring its safety. More important, the bill would establish a governing commission to coordinate and encourage governmental and private research and development.

If the FDA publishes its long-awaited final rule this year, commercial use of food irradiation could start quickly. Several companies have been gearing up for it for years. By the end of 1986, you may be able to "ask for yours irradiated" at the supermarket.

Mrs. Meister is a research associate with the American Council on Science and Health.

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Briefs

FDA won't ban raw milk. On March 15th, FDA Commissioner Frank E. Young, M.D., Ph.D., denied the Public Citizen Health Research Group's petition to ban sales of certified raw milk [see NF 2:1-4]. Dr. Young claimed that "the small amount in interstate commerce does not justify federal action, particularly in light of the fact that effective state regulation would eliminate the problem." Although recognizing that certified raw milk has no significant health benefit and is a public health problem, Dr. Young said that preventing a small amount from being shipped by one or two dairies to "a few neighboring states" would be "an inefficient use of federal authority in light of the truly national problems that need to be addressed." [Editors note: Remember, this is the FDA Commissioner who last year roared into office promising strong opposition to quackery. About 30 states now prohibit intrastate sale of unpasteurized milk and milk products. Apparently, Dr. Young doesn't think that a federal ban would encourage additional state action.]

Wheat germ oil. Under a proposed FTC consent agreement, the makers of Octacol 4 cannot make unsupported claims that the product or its ingredients can improve any aspect of physical fitness or athletic performance. The product contains wheat germ oil and four other ingredients—octacosanol, triacontanol, hexacosanol and tetracosanol—which the companies claimed were the "four sports stamina factors." Octacol 4 is manufactured by P. Leiner Nutritional Products Corp. (formerly PLNP Holdings Inc.) and its subsidiary, P. Leiner Nutritional Products Inc. of Delaware (formerly P. Leiner Nutritional Products Inc.).

Health food store sales drop again. Based on its annual survey, *Health Foods Business*' estimates that total 1984 sales at "natural food" stores were \$1.68 billion, a 16% drop from the previous year. Sales figures for individual categories included: vitamins and supplements, \$526 million (-29.6%); herbal teas, \$47.1 million (-13.1%); other herbal products, \$139.6 million (+0.7%); and books, \$63.9 million (+17.7%). The number of health food stores dropped from 7,700 to 7,320. The industry experienced a 17.6% drop in 1983 [see NF 1:5]. *Health Foods Business* attributes the 2-year slump to "new forms of competition not only from mass market retailers, but also from giant food processing companies and large pharmaceutical houses which apparently found the appeal of the word 'natural.'"

Diet and cancer report. "The idea that specific foods can cause or prevent cancer has taken on the aura of a national policy, yet behind the scenes there is tremendous disagreement among the experts on this issue." So states the American Council on Science and Health (ACSH) in the press release for its latest publication, *Diet and Cancer*. The 30-page booklet was written by Professor Michael W. Pariza of the University of Wisconsin's Food Research Institute and was reviewed prior to publication by more than 40 other prominent scientists. Noting that "some individuals may want to modify their own diets on the basis of tentative evidence currently available," the report concludes that the evidence is insufficient to warrant establishment of a public policy of dietary guidelines for the purpose of reducing cancer risk. A free copy can be obtained by sending a self-addressed, 4½" x 9" envelope with 39¢ postage to Diet and Cancer Report, ACSH, 47 Maple St., Summit, NJ 07901.

CU stings health food industry and FDA. After a 5-month investigation, *Consumer Reports* magazine has concluded in its May issue that "lack of an effective FDA enforcement policy" has been a significant factor in the growth of quackery in the United States. Research for the story included purchase of more than 300 questionable products and 11 distributorships in multilevel companies, including Herbalife. The report lists 42 companies that appear to be illegally marketing or distributing at least one product. Unacceptably high levels of bacteria were found in "raw glandular" products made by two other companies. Copies of the May issue are available for \$3 from the Back Issue Dept., *Consumer Reports*, P.O. Box 2840, Boulder, CO 80322.

Robertson-Taylor update. Acting on an FDA complaint, U.S. marshals seized more than 110,000 bottles and jars of 24 illegal products with an estimated retail value of \$2.4 million from the warehouse of the Robertson-Taylor Co., of Fort Lauderdale, Florida. The company has also done business as Connor Freeman Laboratories, Bio-Technic Laboratories, Intra-Medic Formulations, Inc., W.G. Charles Co., J.F. Pharmaceuticals, and Customer Service Distribution Center. The action came after a warning letter sent in November 1984 was ignored. [See NF 1:19 for other government actions against Robertson-Taylor.]

COMING SOON

**Cancer Quacks Plead Guilty
Some Notes on Linus Pauling**

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Raw fish parasites. Consumers of sushi (raw fish) risk acquiring parasites that cause acute abdominal pain within 12 hours, often accompanied by nausea and vomiting. In the February 15, 1985 *Journal of the American Medical Association*, Japanese researchers reported 178 cases of acute anisakiasis—caused by infection with the larvae of an intestinal worm from the ascaris family. Most of the patients had eaten raw mackerel; a few had eaten horse mackerel, bream, squid, sardines or bonito, and the rest did not know what type of fish they had consumed. The disease is prevalent in Japan and rare in the United States. However, an official of the U.S. Centers for Disease warns that some fish in U.S. waters are infected and that increased international travel and acceptance of raw fish have increased the potential for anisakiasis in this country. Smoking or cooking fish to a temperature of 140°F or higher or freezing it at -4°F for 3 days kills the larvae; salting, marinating and cold smoking do not.

Herbalife attacked. The California Attorney General and two other California agencies have filed a civil suit accusing Herbalife and several of its executives of “numerous unfair and illegal statements and practices.” These include making unapproved drug claims for some products, misrepresenting that herbal ingredients will curb appetite, and marketing an illegal pyramid scheme.

Bee pollen suspected of toxicity. The *Tucson Daily Star* reported that a family of three were treated in the emergency room for nausea, dizziness and inability to focus their eyes after eating bee pollen in their cereal at breakfast. Dr. William Banner, medical director of the University of Arizona’s poison and drug information center, said that the adverse reactions appeared to be caused by a toxin that affected the central nervous system, and that he has asked the FDA to help identify it.

SCHISANDRA

Varro E. Tyler, Ph.D.

Perhaps the newest of the old drugs resurrected by the American herbal medicine industry is schisandra, or schizandra, the dried ripe fruit of *Schisandra chinensis* (Turcz.) Baill., a tree native to China. Its ancient folkloric use there was as an antiseptic, astringent, tonic and the like. During the last decade or so, Chinese doctors began using the drug to treat hepatitis, and a few studies have been done of its potential for liver-protective effects and the nature of its active constituents.

Western herbal advocates now acclaim schisandra as an “adaptogen,” an agent supposedly capable of increasing the body’s resistance to disease, stress, and other debilitating processes. In 1980, claims to this effect appeared in *Maa Bra*, a Swedish health magazine. Citing this source, Carlson Wade, author of many books and articles on unproven methods, suggests that schisandra can “supercharge the body and create vigor.” (Curiously, he says it can help insomnia as well.) He also recommends it for fatigue, exhaustion, chronic gastritis, neuroathenic disorders, and eyesight difficulties.

Herbalife International claims that its herbal/vitamin/mineral mixture Schizandra Plus can “help to combat damage that can lead to premature aging.”

Freedom Marketing Corporation, of Westmont, Illinois, has been advertising to “nutrition consultants” and chiropractors that its schisandra-containing product, Adaptogen, is “capable of providing a more healthy, active and longer lifespan.” The ads also claim that it is effective against premenstrual syndrome, stimulates immune defenses, balances body function, normalizes body systems, boosts recovery after surgery, protects against radiation, counteracts the effects of sugar, optimizes energy in times of stress, increases stamina, protects against motion sickness, normalizes blood sugar and blood pressure, reduces high cholesterol, shields against infection, improves the health of the adrenals,

energizes RNA-DNA molecules to rebuild cells, and “produces energy comparable to that of a young athlete.”

Limited studies of schisandra’s effects have been carried out in small animals. An investigation conducted by L. Volicer and colleagues in Czechoslovakia in 1966 noted that the drug had a stimulating effect in low doses, but this was reversed with large doses. These actions are similar to those of nicotine.

The constituents responsible for the liver-protective effects of schisandra are apparently lignans—molecules composed of two phenylpropanoid units. More than 30 of these have been isolated from schisandra, some 22 of which were tested in 1984 by the Japanese investigator H. Hikino for their ability to reduce the cytotoxic effects of carbon tetrachloride and galactosamine on cultured rat liver cells. Most were found effective, and some were quite active. However, when galactosamine was used as a cytotoxic agent, the protective effects of the lignans were reduced at higher doses. Dr. Hikino concluded that the lignans of schisandra were themselves toxic to the liver when administered in large doses over a long period of time.

Thus the reported evidence that schisandra has stimulatory and liver-protective effects is equivocal and quite preliminary in nature. To determine whether schisandra has practical value as a drug, long-term studies of safety and effectiveness at various dose levels—first in animals and ultimately in human beings—would be needed.

Dr. Tyler, Dean of Purdue University’s Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs.

DHEA: FACTS VS. HYPE

John J. Cunningham, Ph.D.

The Life Extension Foundation of Hollywood, Florida, calls DHEA "the miracle weight-reducer of the '80s" and suggests that "if DHEA can do for humans what it's done for laboratory animals, we'll be able to eat all the food we want and still lose weight." It also calls DHEA an "anti-cancer agent that may slow down the aging process."

Ads for General Nutrition Corporation's "Fat Fighter" tablets containing 500 mg DHEA claim that "DHEA lets you eat . . . just as you normally do and still keep the pounds off."

Ads for CAL CONTROL DHEA, sold by the Health Savings Center of Valley Stream, N.Y., claim that "DHEA converts the calories we eat into energy instead of fat."

Flyers for Great Earth Vitamin Stores, the second largest health food store chain, claim that its MAINTAIN DHEA Complex enables dieters to "resume normal eating habits without gaining back weight. MAINTAIN will not suppress your appetite. Its 'fat-fighting' effect is cumulative; the longer you stay with it, the more effective it is."

The above claims are said to be based on experiments which showed that laboratory animals given DHEA lived longer and had a lower incidence of obesity and cancer than expected. This rationale is spelled out clearly in a 1983 article titled *DHEA*, written by Earl Mindell, author of *Vitamin Bible* and co-founder of the Great Earth chain. Let's look at some of the statements in his article and place them in perspective. (I have numbered the statements for the reader's convenience; they are not numbered in the article.)

Statement #1: DHEA is a natural hormone produced by the adrenal glands in mammals.

This is true. DHEA (dehydroepiandrosterone) and its sulfated conjugate DHEAS constitute the most abundant steroids secreted by the adrenal glands in adults. Actually, circulating levels of DHEAS are 150-250 times those of DHEA throughout life, perhaps due to the improved solubility of the sulfated form. Degradation products of DHEA account for 10-30% of the total 17-ketosteroids excreted in the urine. The DHEA sold in health food stores is extracted from bovine tissue or from Mexican yams.

It is important to remember that the body normally exerts tight regulation over hormone levels so that they circulate in optimum amounts. The fact that DHEA is "natural" does not mean that it cannot harm the body. Excess amounts of steroids can disrupt normal body processes whether they are generated by the body or come from an outside source.

Statement #2: The body produces the peak amount of DHEA at the age of 25. As we age, the produc-

tion of this hormone declines steadily, so that at the end of life, the amount found in the body is only about one twentieth (1/20) of the peak level.

This is true. Little DHEA/DHEAS is produced during childhood, with the exception of the first few weeks of life when the placental-fetal hormonal interactions are tapering off. Production increases at about age six in both sexes, and thereafter circulating DHEA/DHEAS levels increase in parallel with pubertal progression. During adult life, DHEA/DHEAS levels are lower in women than men and decline with age in both sexes. Most people gain weight as they get older. The subtle suggestion here is that aging and weight gain are caused by decreased DHEA production and therefore can be reversed by DHEA supplementation. There is no evidence that this is true.

Statement #3: Schwartz et al. at Temple University School of Medicine have shown that . . . when DHEA was fed to mice, it increased their life expectancy from 24 to 36 months, which is the equivalent of 35 to 40 human years. The mice seemed younger and had a lower incidence of many of the traditional diseases of aging than mice on regular diets.

Mice fed DHEA may live longer and more healthy lives, but younger-looking mice are not necessarily less aged. Studies at the Jackson Laboratory in Maine have found that DHEA fed to old mice improves glucose tolerance and reduces plasma insulin to "younger" levels. But aging involves much more than carbohydrate metabolism.

Statement #4: DHEA appears to be the first substance that allows animals to lose weight without changing their appetite. They eat normally. The calories are converted to heat rather than fat, thereby allowing the animals to lose weight.

Several studies of DHEA have been conducted on special strains of mice or rats that are genetically predisposed to obesity. When fed DHEA, these rodents gained less than expected, but they did not lose weight. If DHEA affected obese humans similarly, it would prevent further fat accumulation but would not cause weight loss. The doses given these rodents were at least 50 times greater than those presently marketed for humans. Moreover, genetically obese BL/Ks mice studied at Jackson Laboratories gained weight normally while consuming the highest dose of DHEA. And genetically obese Zucker rats gained less weight but developed heavier livers—as did lean Zucker rats fed DHEA—which may signify that excess DHEA is toxic to the liver.

Statement #5: Terence T. Yen, a biochemist at Eli Lilly in Indianapolis, found that when DHEA is fed to obese mice, their weight drops significantly.

Not true. Dr. Yen found that DHEA prevented un-

derweight mice from getting fat.

Statement #6: It reduces the risk of developing breast, colon and lung cancer in the mice. Other studies have found that DHEA can reduce the risk of developing cancer of the liver, skin and lymphatic tissues.

It is true that studies in rodents have shown high-dose oral DHEA to be an effective agent in the treatment of rats bred to be highly susceptible to tumor development and diabetes. But what these have to do with humans is anybody's guess.

Statement #7: More research is going on with DHEA to test for harmful side effects.

Despite being the most abundant circulating steroids in adults, the functions of DHEA and DHEAS are not completely known. But it is known that they are converted into a male sex hormone (androgen) that stimulates the growth of secondary sexual hair and other maturation effects during puberty.

While no adverse side effects have been reported to date in either animals or humans, *the unproven benefits of DHEA for weight control should be considered in light of abnormalities associated with elevations of this steroid.* It is known that in females, excess DHEA production causes excessive male pattern hair growth (hirsutism) and enlargement of the clitoris—a condition called the adrenogenital syndrome.

The pubertal rise in DHEAS in girls (as well as oral supplements of 100 mg DHEAS in men with insufficient androgen hormone) induces sebum production and may thus contribute to acne. A study reported in the *New England Journal of Medicine* in 1983 found that 80% of both men and women suffering from treatment-resistant acne had elevated blood levels of DHEAS. Virtually all of these patients benefited from therapy designed to reduce this steroid excess.

Athletes consuming 40 mg DHEAS daily for one month have been found to have a 26% reduction in red blood cell 2,3-DPG, a substance active in oxygen deliv-

ery to tissues. Oral doses of 60 mg given to men daily for two months decreased circulating testosterone by 60%. Rodent models of DHEA feeding may be inappropriate for detecting these side effects.

The above facts indicate that people who use DHEA with the hope of losing weight are unlikely to succeed and could be inviting trouble by tampering with their hormones. As with other situations of fadism, it is likely that some users will take more than the "recommended" amounts, especially when they see that the recommended dose fails to deliver the desired weight loss.

The cautions in this article are based on the assumption that products sold through health food stores might contain pharmacologically potent amounts of DHEA. Actually, they may not. Progenics, a New York City firm which supplies DHEA and its metabolites to Jackson Laboratories and other research facilities, recently analyzed three different "DHEA" products from a health food store. According to company president George Krsek, Ph.D., two contained less than 10 mg of DHEA per 100-tablet bottle and none could be detected in the third!

Regardless of their potency, the fact that unproven therapeutic claims are being made for DHEA products makes them "unapproved new drugs" that are illegal to market in interstate commerce. On April 9th, after about a year of "active investigation," the FDA warned their manufacturers and distributors to stop selling them.

It is conceivable that etiocholanolone, beta-etiocholanolone or some other chemical derivative of DHEA could favorably alter energy balance without posing a risk of serious side effects. However, this possibility has not been scientifically documented.

Dr. Cunningham is a pediatric endocrinologist at the Shriners Burns Institute in Boston.

WRITER SUED FOR "MALPRACTICE"

Dr. Morton Walker, a Stamford, Connecticut podiatrist who has been writing full-time for more than 15 years, is a defendant in a suit filed last year by a Detroit man treated with chelation therapy [NF 1:9]. To help persuade the patient that chelation was effective for improving circulation to the legs, the doctor in the case had displayed a copy of *Chelation Therapy: How to Prevent or Reverse Hardening of the Arteries*, written by Walker. Originally published in 1976, the book had been specially reprinted in 1981 by M. Evans & Co., of New York City, for use by the American Academy of Medical Preventics, an organization of chelation doctors—which sold copies to its members.

Biographical material distributed by Walker states that he "specializes in writing self-help books in the holistic health field" and has written more than 15 books and 1,000 published articles. According to a recent article he wrote in the National Health Federation's *Health Freedom News*, the suit papers allege that he had committed malpractice by practicing medicine without

a Michigan license and had been negligent because his book gives medical opinions and advice. The book's publisher then sued Walker in a cross-complaint, stating that he had warranted that the book contain no injurious instructions. Walker's article states that he has instructed his attorney to countersue the plaintiff and his attorneys for violating his civil rights.

A highly talented wordsmith, Walker is a former editor of the American Medical Writers Association and is an active member of the American Society of Journalists and Authors. The Society has voiced objection to the suit and wants it dismissed by the courts because of its possible chilling effect on authors. On the other hand, Dr. William Jarvis, president of the National Council Against Health Fraud, believes that "no one need fear the responsible reporting of health information, even if it turns out to be in error, as long as they acted in good faith," and that "misleading the public in serious health matters is more freedom than socially responsible writers need."

TRAVELERS' DIARRHEA

The common practice of taking medication to prevent travelers' diarrhea (TD) is inadvisable because, except in certain high-risk situations, the risk outweighs the benefits. So judged the majority of 14 experts who met January 28-30 for a consensus development conference at the National Institutes of Health. Instead the group recommended: 1) avoidance of raw foods and tap water; and 2) bringing an antimotility drug for treatment of mild diarrhea and an antimicrobial agent for severe cases. By being prepared, travelers can avoid buying potentially dangerous drugs abroad and can begin treatment promptly when needed.

TD is by far the most frequent health problem of travelers to foreign countries. About a third of the more than 8 million Americans traveling to developing countries this year are expected to get it. The condition is caused by a variety of infectious agents in fecally contaminated food or beverages. The most common organism is *E. coli*, but many other bacteria, viruses and protozoa have been implicated in some cases. The usual symptoms are diarrhea, cramps and nausea. Bloody diarrhea, vomiting and fever are less common.

The basic rules of prevention can be summarized as "boil it, cook it, peel it, or forget it." But a recent study in which visitors to the tropics kept records of their first three days abroad found that only 13 out of 688 committed no dietary mistakes. Seventy-one percent consumed salads or raw vegetables; 70% ate fruit that could not be peeled; and 53% did not refuse ice cubes. The incidence of diarrhea depended on the number of die-

tary mistakes. Those who used tap water for brushing their teeth had a slightly higher percentage of diarrhea than those who did not (22% vs. 16%).

Prudent dietary and hygienic practices will prevent some cases of diarrhea, but not all. For mild diarrhea, an antimotility drug such as diphenoxylate (brand name, Lomotil) or loperamide (Imodium) can be taken. Or bismuth subsalicylate (Pepto-Bismol), which works somewhat slower, can be used. For severe diarrhea, an antimicrobial agent can be used, the panel's favorites being trimethoprim/sulfamethoxazole (Bactrim, Septra and others), trimethoprim alone (Proloprim, Trimplex), or doxycycline (Vibramycin). Fluid and electrolyte balance can usually be maintained by consuming uncontaminated fruit juices, soft drinks and salted crackers. Alcohol, caffeine-containing beverages and possibly dairy products should be avoided if TD occurs.

Antimicrobial agents are not recommended for routine prevention of TD because widespread usage will cause side effects in many people and may lead to the development of antibiotic-resistant organisms. Antimotility drugs taken for prevention may actually increase the incidence of TD. And Pepto-Bismol is not recommended prophylactically because large doses of bismuth may cause neurological difficulty while ringing of the ears may result from the salicylate. A more sensible approach is rapid institution of effective treatment that will shorten the disease to 30 hours or less in most people. Before traveling abroad, one's doctor should be consulted about the suitability and usage of the various drugs.

FTC KILLS PROTEIN RULE

On December 20, 1984, the Federal Trade Commission voted 3-1 not to promulgate a trade regulation rule governing the advertising and labeling of protein supplements. Instead, it will handle violations individually. The rulemaking proceeding—which began with great fanfare in 1975—focused originally on false claims that protein supplements could burn fat, boost athletic performance or have special therapeutic properties. A ban on representing that protein supplements were suitable for infants was also considered. Commissioner Patricia P. Bailey, the lone dissenter, charged that the

agency had "abdicated its responsibility to protect the health and safety of consumers against irresponsible and possibly life-threatening commercial practices." She also expressed disagreement that "at the conclusion of a responsible rulemaking proceeding that supports modest provisions to regulate known abuses in the marketing of protein supplements, the Commission stopped just short of an effective, low-cost, industry-wide remedy and turned instead to an ephemeral new program of case-by-case law enforcement."

C H A N G E O F A D D R E S S ?

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SOME NOTES ON LINUS PAULING

James Lowell, Ph.D.

The widespread public belief that vitamin C can prevent or alleviate colds is directly attributable to Linus Pauling, Ph.D., winner of the Nobel Prize for chemistry in 1954 and for peace in 1962. Currently, however, there is growing concern over his scientific integrity.

Pauling introduced the scientific community to his vitamin and health theories in 1968 in an article for *Science*, the journal of the American Association for the Advancement of Science. In this report, he coined the term "orthomolecular," meaning "right molecule." He postulated that people's nutrient and vitamin needs vary markedly and that to maintain good health, many people need amounts of nutrients much greater than the Recommended Dietary Allowances. And he suggested that megadoses of certain vitamins and minerals might well be the treatment of choice for some forms of mental illness.

In 1970 he published a book for the general public called *Vitamin C and the Common Cold*, which suggested that 1 gram of vitamin C daily would reduce the incidence of colds by 45% for most people, but that some persons might need larger amounts. The book recommended that if symptoms of a cold do start, 500 to 1,000 mg of vitamin C should be taken every hour for several hours (or 4 to 10 grams daily if symptoms don't disappear with smaller amounts). It also suggested that most people need a daily intake of 2,300 mg or more for "optimum" health and to meet stresses, including infections. A second edition, published in 1976 as *Vitamin C, the Common Cold and the Flu*, recommended even higher dosages, and Pauling himself says he takes 12 grams daily, increasing to 40 grams daily when symptoms of a cold appear.

Pauling says his initial interest in vitamin C was aroused by a letter from biochemist Irwin Stone, with whom he subsequently maintained a close working relationship. (Although Stone was often referred to as "Dr. Stone," his only credentials were a certificate showing completion of a 2-year chemistry program, an honorary chiropractic degree from the Los Angeles College of Chi-

ropractic, and a Ph.D. from Donsbach University, an unaccredited correspondence school. He died last fall after reportedly choking on a piece of meat at a banquet held in his honor.)

Pauling's case for vitamin C was not based on his own studies but on his evaluation of the research and statistics of others. However, the vast majority of reputable medical and nutritional scientists who have looked at the same evidence believe that supplementation with large doses of vitamin C does not prevent colds and, at best, may slightly reduce the symptoms of a cold. A thorough analysis of this subject—including the results of 16 well designed clinical studies—is contained in *Vitamins and Minerals: Help or Harm?*, by Charles W. Marshall, Ph.D. [George F. Stickley Co., 1983].

In 1973, Pauling, Arthur B. Robinson, Ph.D., and Keene Dimick, founded the Institute of Orthomolecular Medicine (subsequently renamed the Linus Pauling Institute of Science and Medicine) in Palo Alto, California. Robinson was a former student and long-time associate of Pauling. Dimick was an admirer of Pauling's work who made his fortune by developing the gas chromatograph, a device for analyzing the composition and structure of chemical compounds. Robinson became the Institute's president and director, and Dimick became a member of its board of trustees.

In the same year that the Institute was founded, the American Psychiatric Association released its classic *Task Force Report on Megavitamin and Orthomolecular Therapy in Psychiatry*. The report's conclusion, perhaps the most strongly worded statement ever published by a scientific review body, stated:

"The credibility of the megavitamin proponents is low. Their credibility is further diminished by a consistent refusal over the past decade to perform controlled experiments and to report their results in a scientifically acceptable fashion. Under these circumstances this Task Force considers the massive publicity which they promulgate via radio, the lay press and popular books, using catch phrases which are really misnomers like 'megavitamin therapy' and 'orthomolecular medicine,' to be deplorable."

Pauling, who had been promoting vitamin C for schizophrenia and other mental problems, defended his viewpoint in the *American Journal of Psychiatry* [131:1251-1257, 1974], claiming that the APA committee had used faulty arguments, drawn unjustified conclusions and was biased. But his arguments were thoroughly rebutted by Richard Wyatt, M.D., Acting Chief of the National Institute of Mental Health Laboratory of Psychopharmacy, and two other prominent psychiatric researchers [*Am. J. Psychiatry* 131:1258-1267, 1974].

During the mid-'70s, Pauling began claiming that vitamin C could be useful in the prevention and treatment of numerous other conditions, including cancer. He and Dr. Ewan Cameron, a Scottish physician, reported that a majority of 100 terminal cancer patients treated with 10,000 mg of vitamin C daily survived 3 to 4 times longer than similar patients who did not receive vitamin C supplements [*Proceedings of the National Academy of Sciences* 73:3685, 1976, and 75:4538, 1978.] However, this research was heavily criticized because the patient groups were not comparable.

As noted in a devastating critique by Dr. William DeWys, chief of clinical investigation at the National Cancer Institute, the vitamin C patients were Dr. Cameron's, while the other patients had been cared for by other physicians [*Your Patient and Cancer* 31-36, May 1982]. Cameron's patients were started on vitamin C when he labeled them as "untreatable" by other methods. Their subsequent survival was then compared to the survival of the "control" patients after they were judged "untreatable" by their doctors. If the two groups had been comparable, the lengths of time from entry into the hospital to being labeled untreatable should have been equivalent. However, Dr. DeWys found that Cameron's patients were labeled untreatable much earlier in the course of their disease—which means that they entered the hospital less sick than those of the other doctors and would naturally be expected to live longer.

In 1979 Cameron and Pauling co-authored *Cancer and Vitamin C*, which introduced their ideas to the lay public. In a July 1979 interview with *Prevention* magazine, Pauling even claimed that "mortality from cancer could be decreased by 75 percent by the proper use of vitamin C alone."

Three carefully designed studies have been conducted to explore the role of megavitamin C and cancer. In 1979, the Mayo Clinic reported a double-blind study covering 123 patients with advanced cancer [*New Engl. J. Med.* 301:687-690]. Half of the patients received 10,000 mg of vitamin C daily while the others received a placebo. No differences were found between the two groups in survival time, appetite, weight loss, severity of pain, or amount of nausea and vomiting.

An almost identical result was obtained in a study by the North Central Cancer Treatment Group, composed of physicians in seven states and Canada. As reported in the August 22, 1983 *Medical World News*,

survival curves for 71 patients receiving 10,000 mg of vitamin C and 73 patients receiving a placebo essentially overlapped, and median survival time for the placebo group was actually one week longer.

Pauling criticized the Mayo Clinic test, claiming that chemotherapeutic agents might have suppressed the patients' immune systems so that vitamin C couldn't work. But he appears to have contradicted himself on this point. His 1976 report on Cameron's work states clearly that: "All patients are treated initially in a perfectly conventional way, by operation, use of radiotherapy, and the administration of hormones and cytotoxic substances." In an interview in the June 25, 1979 *Medical World News*, Pauling claimed that only 4 of the 100 patients had received chemotherapy "and then in rather small amounts." And at a meeting which I attended in February 1985 at the University of Arizona, he stated that vitamin C therapy could be used along with all conventional modalities.

Nevertheless, because of Pauling's criticisms, the Mayo Clinic experiments were repeated using untreatable cancer patients who had not received chemotherapy. As reported in the January 17, 1985 *New England Journal of Medicine*, vitamin C did no better than a placebo in a double-blind study of 100 patients. In an accompanying editorial, Robert Wittes of the National Cancer Institute in Bethesda, Md., explains why the study was excellent and would be difficult to fault in design or execution.

Undaunted, Pauling has called the new experiments "a fraud on the American people." He has charged that the Mayo group's study did not last long enough and therefore was not a proper challenge to his conclusions. A UPI story even reported that Pauling asked *The New England Journal of Medicine's* editors to retract the "lies" in their article and apologize to him. Otherwise, he said, he might file suit.

Evidence exists that taking high doses of vitamin C may actually promote some types of cancer. In a recent telephone interview, Robinson told me that his own research led him to conclude in 1978 that the high doses (5-10 grams per day) of vitamin C being recommended by Pauling might be harmful and could actually promote some types of cancer in mice. Robinson found, for example, that animals fed quantities equivalent to the recommended ones contracted skin cancer almost twice as frequently as the control group. Only doses of vitamin C that were nearly lethal, according to Robinson, had any protective effect.

Robinson (now director of the Oregon Institute of Science and Medicine in Cave Junction, Oregon) told me that shortly after he made these findings known to Pauling, he was asked to resign from the Institute. His experimental animals were killed, his scientific data were impounded, and some of the previous research results were destroyed. Pauling also declared publicly that Robinson's research was "amateurish" and inadequate.

Nevertheless, according to Robinson, Pauling

sent a manuscript to him 19 months later including some of Robinson's results but omitting mention that certain doses had doubled the cancer rate in mice and that "protective" doses were almost lethal. In fact, Robinson said, Pauling's final paragraph stated that if the dose were doubled again, vitamin C would give complete protection against skin cancer in the test animals. He said that Pauling had not done the research, so he was not aware that doses that high (given by mistake) had actually killed all the mice. Eventually, he said, Pauling published the misleading reports on his own in a Brazilian symposium.

Pauling's version of the research is somewhat different. During a recent interview at the University of Arizona Health Sciences Center, he told me that he had designed the experiments and that Robinson had just carried them out. Pauling contradicted himself, however, because he also said that the part of the research he published was his half of the work (apparently the part that didn't show the toxicity), and that Robinson could have published his own research himself. But Robinson told me that the research was never completed and therefore was unpublishable.

In 1978, Robinson filed a \$25.5 million libel and slander suit against the Institute and its trustees. [An excellent account of the case was published in the June 11, 1979 *Barron's*.] In 1983, the suit was settled out of court for \$575,000. Quoted soon afterward in *Nature* [303:103], Pauling said that the settlement "represented no more than compensation for loss of office and the cost of Robinson's legal fees." However, the court-approved agreement states that \$425,000 of the settlement was for slander and libel and the balance was for attorneys' fees and other expenses.

Over the years, several studies have supported Robinson's contention that large doses of vitamin C may be harmful. Dr. H.F. Stich, for example has reported that the vitamin can cause damage to proteins and genetic material of the body and may cause mutations to certain types of cells. [*Nature* 260:722, 1976, and *Cancer Research* 39:41, 1979.]

Pauling told me that damage is not caused by the doses he recommends. He admitted that vitamin C can damage cells under certain conditions, but said that this damage may well be caused by factors other than the vitamin C itself, such as from the ions accompanying high doses of ascorbates.

Science aside, it is clear that Dr. Pauling is politically aligned with the promoters of unscientific nutrition practices. In *Vitamin C and the Common Cold*, Pauling attacked the health food industry for misleading its customers. Pointing out that "synthetic" vitamin C is identical with "natural" vitamin C, he warned that higher-priced "natural" products are a "waste of money." And he added that "the words 'organically grown' are essentially meaningless—just part of the jargon used by health food promoters in making their excess profits, often from elderly people with low incomes." But *Vitamin C, the Common Cold and the Flu*, issued six years

later, contains none of these criticisms.

This omission was not accidental. In correspondence with Dr. Stephen Barrett in 1981, Pauling explained that after the 1970 edition was published, he was "strongly attacked by people who were also attacking the health food people." He decided that his critics were so biased that he would no longer help them attack the health food industry while another part of their attack was directed at him.

During the mid-70s, Pauling helped lead the health food industry's campaign for legislation to weaken FDA protection of consumers against misleading nutrition claims.

Pauling, now 84, has been a frequent speaker at health food industry conventions and received the National Nutritional Foods Association's highest award in 1977. (The NNFA is the major trade association of all health food retailers, distributors and producers.) In 1981, he accepted an award from the National Health Federation for "services rendered in behalf of health freedom" and gave his daughter a life membership in this organization. (As detailed in *Vitamins and "Health" Foods: The Great American Hustle* [George F. Stickley Co., 1981], NHF promotes the gamut of quackery. Many of its leaders have been in legal difficulty and five have even received prison sentences for various "health" activities.) Pauling has also appeared as a speaker at the Parker School for Professional Success Seminar, a meeting where chiropractors are taught highly questionable methods of building their practices. An ad for the meeting invited chiropractors to pose with Dr. Pauling for a photograph which presumably could be used for publicity when the chiropractors returned home.

In 1983, Pauling and Irwin Stone testified at a hearing on behalf of Oscar Falconi, a vitamin promoter charged by the Postal Service with making false claims for several products. As reported in *Nature* [303:275, 1983], Pauling supported Falconi's contentions that vitamin C was useful not only in preventing cancer, but also in curing drug addicts and destroying both viruses and bacteria.

Pauling also testified in 1984 before the California Board of Medical Quality Assurance in defense of Dr. Michael Gerber, a Mill Valley physician accused of improperly administering to patients. One was a 56-year-old woman with treatable cancer who—the Board concluded—had died as a result of Gerber's neglect while he treated her with herbs, enzymes, coffee enemas and chelation therapy. The other patients were 3-year-old twin boys with ear infections for which Gerber had prescribed 70,000 or more units of vitamin A daily and coffee enemas twice daily for several weeks. Gerber, now an NHF board member, lost his license to practice medicine as a result of the hearings. [*Oncology Times*, August, 1984.]

The largest corporate donor (over \$500,000) to Pauling's Institute has been Hoffmann-La Roche, the pharmaceutical giant which is the dominant factor in world-wide production of vitamin C. Many of the In-

CANCER QUACKS PLEAD GUILTY

stitute's individual donors have been solicited with the help of Rodale Press (publishers of *Prevention* magazine) and related organizations which have publicized the Institute and allowed the use of their mailing lists.

The Institute's fund-raising brochures have been fraught with questionable information. They claim, for example, that no significant progress has been made in cancer treatment in the past 20 years. This viewpoint, which is frequently expressed by promoters of unproven cancer therapies, is simply untrue.

Two years ago, the Pauling Institute increased its connection with the promoters of unproven therapies by hiring Jeffrey Bland, Ph.D., to direct special research projects and oversee the Institute's laboratory program for analyzing food supplement products and certifying their contents with a seal of approval. Bland is a biochemist who often decries the methods of the traditional medical community and promotes questionable and unproven methods of treatment. For example, he recommends the use of hair analysis in "designing a program to optimize your health" and the use of ground-up animal organs ("glandulars") for treating diseases in corresponding human organs.

Robinson told me that Pauling was fond of saying that he and his wife never got colds because they were taking 10 grams of vitamin C a day, but that Pauling actually had colds "frequently." During the mid-1970s Pauling's wife contracted stomach cancer (which later resulted in her death). Pauling claimed she had stopped taking vitamin C by that time, but Robinson, who was a frequent visitor at the Pauling ranch, said the couple regularly put teaspoons of vitamin C into their orange juice.

According to a recent article in the *Chicago Tribune*, Pauling's 1984 speaking agenda included some 150 talks on science, world peace, nutrition and disease, and the benefits of megadoses of vitamin C. And he is working on a book whose tentative title is *Vitamin C for a Better Life*.

Dr. Lowell, a board member of the National Council Against Health Fraud, is Professor of Life Sciences at Pima Community College, Tucson, Arizona, and a columnist for *The Arizona Daily Star*.

More than a dozen individuals have pleaded guilty to various criminal offenses in connection with the operation of the Universal Health Center in Matamoros, Mexico, just across the border from Brownsville, Texas. The clinic was closed by Mexican officials in December 1983, and its operator, James Gordon Keller and his brother Ronald are wanted by the FBI on a fugitive warrant.

Government action in this matter was triggered by a lengthy investigation by the *Brownsville Herald* that involved more than 100 interviews. Among other things, the newspaper reported:

- Keller had run a similar clinic in Baton Rouge, Louisiana, which was closed by FDA and state authorities in 1983. He then opened the Matamoros clinic and bought condominiums in Brownsville to rent to patients who paid about \$3,000 for two weeks of treatment. The operation grossed over \$100,000 per month.
- Almost all of Keller's patients were referred by a woman in Salt Lake City who operated as "Western Health Research" and the "Western Research Center." Until her recent indictment for interstate wire fraud, callers to her 800 number could have travel arrangements and appointments made for one of several "cancer clinics."
- The Universal Health Center's brochure offered "an effective therapeutic approach to treatment of cancer and other diseases, including multiple sclerosis, lupus erythematosus, Parkinson's muscular dystrophy, rheumatoid arthritis, cardiovascular and other degenerative diseases." For cancer therapy, Keller used "Tumorex" and a wide variety of other unproven remedies. (Analysis of samples of Tumorex in an Arizona case revealed that it was merely L-arginine, an amino acid.)
- Keller's cancer patients fit into two main types: terminal patients deemed incurable by orthodox treatment and treatable patients who would have a high cure rate with standard chemotherapy or x-ray therapy.
- Keller reportedly claimed that his treatment could cure over 80% of cancers if there was no previous conventional treatment and 50% if conventional methods had already been tried.
- The Matamoros clinic kept few records of its patients, many of whom died soon after returning home, despite being pronounced "cured" by Keller.
- Patients were told that insurance companies would cover claims for Keller's treatments—which was not true.

A few weeks after Keller's Matamoros clinic was closed, he opened the St. Jude International Clinic in Tijuana, Mexico, which is still in business.

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PAYMENT DENIED FOR UNPROVEN TREATMENT

On April 8th, a New York State appeals court panel ruled unanimously that denial of insurance coverage for an unproven therapy "will have the desirable effect of affording greater protection to the general public and, in particular, cancer patients who are especially vulnerable to unfounded claims of miraculous cures. The Court hoped further that its decision would insure that the treatment rendered on behalf of patients is administered in facilities comporting with certain minimal standards and that its effectiveness has been adequately demonstrated by studies conducted in accordance with appropriate scientific methodology before the resources of a major insurer are utilized to support it."

One issue in the case was whether La Gloria Hospital, of Tijuana, Mexico, could be considered a hospital under the terms of a policy issued by Blue Cross and Blue Shield of Greater New York. Noting that it "specializes almost exclusively in an unorthodox and scientifically unproven treatment of cancer," the appellate court said La Gloria was not a qualified hospital. The court also ruled that Gerson dietary therapy came within the policy exclusion for "experimental procedures." The new ruling reversed that of a lower court which in 1983 had ordered payment of \$15,583.78 for services rendered in 1981 and 1982 to plaintiff Harry J. Zuckerberg. Zuckerberg died subsequent to the 1983 trial.

IDENTIFICATION OF CAFFEINE IN SLIM TEA

Varro E. Tyler, Ph.D.
Deepa Bakshi, Ph.D.
Jerry L. McLaughlin, Ph. D.

The advertisement reads: "Now! Secret Beverage Can Help You LOSE WEIGHT NATURALLY! (It's worked for over 1500 years.) LOSE 30 lbs. or more—EASILY!" Slim Tea is the product. Supposedly, drinking a cup after each meal will make "the pounds disappear!" The ad suggests that because of this product, "Chinese stay slim . . . rarely suffer from excess cholesterol, high blood pressure or other ills caused by the retention of fatty substances." The price: only \$12.95 for 60 tea bags—a 20-day supply.

What is this secret beverage now available to the millions of weight-conscious Americans? The ad claims it is a "rare species of tea leaves grown in misty mountainous regions" and that it is "natural," 99.6% caffeine-free, and without additives. Being skeptical of the advertised claims, we bought a sample (6 tea bags for \$1.99) and examined it carefully. It looked and smelled like ordinary black tea. We then made a cup according to the directions on the package, allowing it to steep for 10 minutes. It tasted like strong black tea, and the central nervous system stimulation it provided suggested that it was loaded with caffeine.

So we took the product to the laboratory and boiled a 7.47g sample in 38 ml of water for 15 minutes and processed the resulting extract for caffeine as described by Tyler and Schwarting in the 3rd edition of *Experimental Pharmacognosy*. [Burgess Publishing Co., Minneapolis, 1962]. The procedure yielded 80 mg of a white crystalline solid which, on the basis of its melting point, co-chromatography, and infrared spectrometry was proven to be caffeine. This amount of caffeine constituted 1.07% of the weight of Slim Tea examined.

Comparisons were then made with the material in an ordinary Lipton's Orange Pekoe and Pekoe cut black tea bag. A quantity of 4.46 g was extracted, yield-

ing 110 mg of a white crystalline solid that was shown by the above tests to be caffeine. The yield in this case was 2.47%, well within the range of 1-4% commonly found in teas. It must be concluded, therefore, that the specimen of Slim Tea examined was simply a variety of black tea that had not been decaffeinated and was definitely not 99.6% caffeine-free as advertised.

Our findings thus support the statement of S.D. Uretsky in the February 1985 *American Pharmacy* that Chinese weight-reducing teas are just teas and have no more value in facilitating weight loss than the much less expensive name-brand black teas. There simply is no scientific evidence that caffeine or any ingredient in black tea has an appetite-suppressant effect. Any temporary feeling of satiety brought about by drinking quantities of liquid is probably more than counterbalanced by the diuretic effects of the caffeine and other contained xanthine bases, especially theophylline. Nor does long-term use of diuretics have any effect on fatty tissue.

The mislabeling of Slim Tea—like the contamination of comfrey tea with deadly nightshade that resulted in a serious case of poisoning reported in 1983—illustrates the poor quality control within the herbal products industry.

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs. Dr. Bakshi holds a postdoctoral appointment and Dr. McLaughlin is Professor of Pharmacognosy in Purdue's Department of Medicinal Chemistry and Pharmacognosy.

Briefs

Insightful comment. "Even men and women who are not ill or in pain seek out health gurus and eat special foods or supplements that are supposed to enhance health or delay aging. Many are disillusioned with a medical establishment they feel is arrogant, impersonal and uncaring. With 'self-care' or 'lifestyle' approaches; they feel more in control of their bodies. They become convinced that all disease can be prevented or cured by living, thinking and eating differently. There's some truth in this, of course, but carried to extremes the philosophy is dangerous."—from "How to Spot a Health Hustler," by Dianne Hales [*Woman's Day*, 5/21/85].

"Stress vitamins" criticized. The Center for Science in the Public Interest (CSPI) has called Lederle Laboratories' program of marketing Stresstabs "a cynical attempt to perpetuate—and profit from—a public misconception." Quoted in CSPI's April *Nutrition Action Health Letter* (formerly called *Nutrition Action*). Lederle's chief nutritionist, Dr. Leon Ellenbogen, denies that his company recommends Stresstabs for psychological stress: "We want to completely absolve ourselves from that. We make it clear in the ads we're talking about physiological stress, such as alcohol consumption, smoking, pregnancy, drug therapies, and severe malnutrition from hospital stays or surgery." But CSPI nutritionist Bonnie Liebman notes that Lederle's messages to people who are "burning the candle at both ends" do suggest that Stresstabs are appropriate for emotional stress. She also notes that the ads are targeted toward the general public rather than to alcoholics, smokers and pregnant women—and that individuals in these groups don't require "the hefty levels of nutrients" found in "stress tablets."

SNE journal to increase frequency. The George F. Stickley Company has been named publisher of the *Journal of Nutrition Education*. Although its price will remain the same (\$30/year), the journal will be expanded and will appear six times a year instead of four. The first issue by the new publisher will be displayed at the Society for Nutrition Education's annual meeting in Los Angeles on July 7-10, 1985. Information concerning subscriptions and renewals can be obtained from the George F. Stickley Co., 210 W. Washington Sq., Philadelphia, PA 19106.

Herbalife drops suit. Herbalife has withdrawn its lawsuit against the FDA. Filed last November, it had charged that the agency had "engaged in a widespread and even corrupt 'trial-by-publicity' campaign to misinform the public by false and defamatory statements" against the company's products.

Grapefruit pillmaker squeezed. On December 3, 1984 a U.S. District judge signed a temporary restraining order against Citrus Industries of Beverly Hills and Los Angeles. The company, which advertised "Super Grapefruit Pills" as an effortless diet aid, had estimated monthly revenues of \$350,000 with an estimated high of \$900,000 in October 1984. A subsequent consent agreement with the Postal Service promised that the disputed claims would never be used again.

Spirulina also loses. A supply of spirulina tablets manufactured by Earthrise Co. Inc. of San Rafael, Calif. and shipped to Florida was ordered destroyed by the federal District Court in Miami. The pills, which had been falsely advertised as "one of nature's best sources of protein," were also judged to be contaminated with insect, animal and bird filth.

CCK warning issued. Manufacturers and distributors of alleged weight-loss products containing "CCK" (cholecystokinin) have been warned by the FDA to discontinue marketing them or face "regulatory action" by the agency. CCK is a hormone involved in the digestive process. Products said to contain it have been sold by mail and in health food stores with claims that they decrease hunger and can cause sudden and dramatic weight loss. However, although injections of CCK appear to decrease hunger in test animals, FDA scientists say that this research is not applicable to pills for human use. Even large doses of the hormone taken by mouth would have no effect on weight because the chemical is destroyed in the digestive tract.

Free alcohol pamphlet. As part of their education program to reduce drunk driving, Blue Cross of the Lehigh Valley and Pennsylvania Blue Shield have issued an attractive pamphlet describing the relationships between eating, drinking, and blood alcohol level. Single free copies can be obtained by sending a self-addressed, stamped 4½" x 9" envelope to Alcohol Guide, P.O. Box 1602, Allentown, PA 18105.

Hair analysis promotion. Probably in response to adverse publicity from the recent FTC hair analysis case [see NF 1:12, 2:24], Chicago-based Doctor's Data, Inc., has contracted with a public relations firm "for the purpose of getting positive media coverage on multi-element testing of hair." The company, which recently purchased the business of two other labs and is negotiating with a third one, is now the largest commercial hair analysis lab in the country. It has asked professionals who use its services to submit case reports so that the media can be given "a new, verified, case history every other week or even more often."

FTC may abandon another rule. The Federal Trade Commission staff has recommended that the Commission abandon its rulemaking proceeding (which began in 1975) on health spas in favor of case-by-case enforcement. The proposed rule provided for pro-rata refunds on memberships, a 3-day cooling-off period for rescinding contracts, a 5% limit on payments before a facility has actually opened, and a 2-year limit on the duration of membership contracts. The deadline for public comment is May 24th.

New antiquackery program. The FDA and the Council of Better Business Bureaus, Inc., have begun a joint program to issue special reports on health and medical frauds to consumer journalists. The first one, entitled "Arthritis: Quackery and Unproven Remedies," was distributed last month. Regarding nutrition, it states: "Except for gout, no specific diet has been proven useful in relieving arthritis symptoms . . . No herb, either singly or in combination with other herbs or ingredients, is a cure for any form of arthritis. Furthermore, there is no medical evidence that suggests that the lack of vitamins or minerals causes arthritis or that taking vitamins or minerals will offer a cure. A well-balanced diet is the best choice."

Free weight-reduction information. Single copies of a new FDA brochure, "How to Take Weight Off (And Keep It Off Without Getting Ripped Off)," can be obtained by sending a postcard to Weight Loss, HFE-88, 5600 Fishers Lane, Rockville, MD 20857. Quantities up to 200 can be obtained by writing to Weight Loss, HFW-40, at the same address. In addition, for groups and clubs, the agency has an exhibit, a slide/tape show and an 8-minute videotape that can be borrowed from the nearest FDA office.

New Rodale magazine. Rodale Press, publisher of *Prevention* magazine and many books that promote unproven nutrition methods, has launched *Superfit*, a quarterly magazine intended to appeal to "affluent, college educated males, 32 years of age, who are not super athletes but persons who want to be super." According to an article in the *Allentown Morning Call*, Rodale Press had gross sales of \$140 million in 1984.

Vitamin A going to Africa. Millions of megadoses of vitamin A donated by drug companies are being sent to combat nutritional blindness in Ethiopian and Sudanese children suffering from extreme vitamin A deprivation. Called Operation Sightsaver, the project is expected to span at least three years and is being coordinated by Helen Keller International, 15 W. 16th St., New York, NY 10011.

New FDA policy statement on cytotoxic testing. The FDA has issued a Compliance Policy Guide stating that cytotoxic testing kits [see NF 1:17-19] are devices under federal law and therefore require FDA approval prior to marketing. Noting that the test remains an unproven diagnostic procedure, the Guide warns that "the agency will consider appropriate regulatory action to enforce the statute, should violative test kits be discovered." [Editor's note: Considering how widely cytotoxic testing has been promoted, the FDA may have to work hard to avoid discovering the kits.] Single copies of the 4-page guide can be obtained by writing to the FDA Dockets Management Branch (HFA-305), Room 4-62, 5600 Fishers Lane, Rockville, MD 20857.

Vegetarian politics. Taking its cue from the American Cancer Society's Great American Smokeout, a California-based vegetarian group sponsored a "Great American Meatout" on March 21st, asking Americans not to eat meat for 24 hours. *American Medical News* reported that the campaign was launched with a demonstration at a slaughterhouse by 13 people who carried signs saying, "Meat is Murder" and "Here's the Beef." The group, which calls itself the Farm Animal Reform Movement, claims that meat consumption causes kidney failure, cancer and premature sexual development. It also claims that raising animals for food depletes agricultural resources and that "causes intense suffering to six billion animals annually."

Infant formula recalled. The FDA has announced that supplies of Kama-Mil powder are being voluntarily recalled by its distributors. According to an agency news release, the product would be hazardous if used as a sole source of nutrition. In addition, the manufacturer failed to comply with the Infant Formula Act which requires FDA notification prior to marketing in interstate commerce.

QUESTION BOX

Q. Is it true that chocolate milk interferes with the absorption of calcium?

A. Chocolate contains oxalic acid, which binds to calcium in the intestine, thereby preventing its absorption. However, because chocolate contains only a small amount of oxalic acid and milk contains a large amount of calcium, the amount of calcium absorption blocked in this manner has no practical importance. On the other hand, a few foods such as spinach and rhubarb contain enough oxalic acid to significantly decrease absorption of the calcium they contain.

WHY LICENSING OF "NUTRITIONISTS" IS NEEDED

Stephen Barrett, M.D.

Dietitians throughout America are spearheading legislation to achieve licensure for themselves and to restrict use of the word "nutritionists" to individuals with recognized credentials. Some of the bills being lobbied also define "nutrition practice" and restrict it to licensed practitioners. Opponents claim that bills of this type are motivated by greed and an intention to create a monopoly for one school of thought. But in my opinion, the key issues are credentials and public protection.

During the past century or so, our educational system has established a system of accreditation to ensure that schools meet appropriate standards of quality. At the same time, state governments have established licensing systems for many professions to ensure that practitioners meet appropriate standards of competence. In many fields, professional groups have established certification procedures that recognize additional levels of expertise.

Accreditation of a school means that its credits can be transferred to other schools and be used as a basis for entering various professions. If a person is licensed on the basis of an examination, it means that the state government has recognized the achievement of a certain level of competence. Certification conveys an additional endorsement of expertise.

Occasionally self-taught individuals acquire expertise with little or no formal education. However, the fields of health and nutrition are sufficiently complex that this is unlikely. Accreditation, licensure and certification are important because they can help to identify who is qualified. They offer no guarantee, but they do increase the odds of getting a competent practitioner.

Within the past five years, a very peculiar thing has happened in the area of nutrition. A number of individuals and organizations have developed several types of "credentials" which resemble those of established medical and nutrition organizations. I am aware of no other field in which this phenomenon has ever taken place.

During the past 50 years, perhaps 50 individuals without valid credentials have pretended to be medical doctors and actually managed for a time to practice. So far as I know, no one has ever been exposed as a fake dentist, podiatrist, optometrist, or even chiropractor. But in nutrition, unaccredited correspondence schools and other organizations have issued thousands of "degrees" and certificates which suggest that the recipient is a qualified expert in nutrition. What's wrong with this situation is that these documents are promoted as though they are equivalent in meaning to established credentials—which they are not.

I'm not going to get into the issue of what makes 5 to 7 years of full-time training for a masters or doctoral degree in nutrition superior to a correspondence course of 6 to 9 months based on unproven theories. The important thing is that at present, both kinds of practitioners can represent themselves as "nutritionists" and display their diplomas on the wall as though they mean the same thing.

I believe that it is unfair to expect people to check the credentials of every health practitioner they encounter. Rather, it should be the role of government to set licensing standards and to prevent individuals who don't meet the standards from representing themselves as equivalent to those who do. Licensing will not offer complete protection against all forms of nutrition practice conducted in private between consenting adults. But it will make it difficult for unqualified individuals to advertise widely that they are experts.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is editor of *Nutrition Forum* Newsletter and co-author/editor of 20 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984, he received an FDA Commissioner's Special Citation Award for Public Service in combatting nutrition quackery.

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A FEW THOUGHTS ON THE RDA'S

Victor Herbert, M.D., J.D.

RDAs are the Recommended Dietary Allowances of the Food and Nutrition Board (FNB) of the National Research Council of the National Academy of Sciences (NAS), a private quasigovernmental agency. Members of the RDA Committee meet for several days at a time, 3 or 4 times a year, to discuss new scientific data; and they engage in extensive correspondence between meetings. The Committee deliberations result in a revised RDA book every four or five years, with the next report due for publication later this year. The book discusses each nutrient and the evidence upon which the RDA values are based. It concludes with a table of RDA values, which winds up—partially or totally—in practically all nutrition textbooks and numerous other publications.

The RDAs are set to encompass the range of individual variability of virtually all healthy Americans and usually include an additional margin for storage against days, weeks or sometimes months of no intake of a specific nutrient. The additional margin is kept below the level at which toxicity from overdose begins.

The RDA for any given vitamin or mineral usually is considerably more than the amount needed daily by any individual. Not only is it unnecessary to reach the RDA each day, but the 7-day RDA over an average week more than exceeds the need for virtually all normal people. RDAs are also set for energy (calories), but these levels are related to average needs without additional margin for storage.

The U.S. Recommended Daily Allowances (U.S. RDAs) are set by the Food and Drug Administration (FDA) based on the RDA table. The RDA for each nutrient varies somewhat with age and sex, and whether a woman is pregnant or lactating. U.S. RDAs are the largest values for each life-cycle category of the RDA table (currently based on the 1968 table). Percentages of U.S. RDAs per portion are listed on cereal boxes and the labels of many other food products. They are also required by law on the packaging of all vitamin and mineral products.

The RDAs and U.S. RDAs are appropriate guidelines for determining whether an individual con-

sumes adequate quantities of each RDA nutrient over the long term to assure normality plus a storage reserve. Whether each storage reserve should be as high as the FNB sets it is a policy decision rather than a scientific one. Over the years, some of the RDA values have become progressively lower as new evidence indicated that the excess over need can be lowered.

Health food industry critics of the RDA system suggest that differences in values set by scientific bodies in different parts of the world are evidence that the scientific community is racked with controversy or does not know what it is doing. Such criticism is unfounded. Differences from area to area are not great. In most cases, they are based on the fact that dietary habits of the various populations covered are different. The World Health Organization/Food and Agricultural Organization (WHO/FAO) recognized this by including in its international standards two RDAs for iron. Since iron is much more readily absorbed from meats than from vegetables (an average of 15% vs. an average of 3%), the vegetarian populations need a higher dietary intake than do meat-eating populations (such as Americans, whose mixed diets are considered to average 10% absorption). Similar considerations apply to zinc.

The Basic Four Food Group system, which classifies foods according to similarities of their leader nutrients, provides adequate amounts of nutrients when properly used. It is admittedly simple and suffers from minor shortcomings as a result. When scientists began to devise guidelines, they divided food choice into 17 groups. But this number was too unwieldy for people to remember, so it was reduced to 11, then 7, and finally 4. Thus each of the Basic Four has several of the original 17 groups compressed into it. For example, the current "grain group" includes breads, cereals and pastas. And the current "meat" group has six subgroups: meat, fish, poultry, eggs, nuts and legumes—all of which have protein as their leader nutrient. The key to using the Basic Four is to eat a variety of foods within each food group, and to use moderation in choosing portion sizes.

Supplements have a clear role in pregnancy, lactation and infancy. In these situations, nutrient needs may run ahead of nutrient supply. Because iron, calcium and folic acid often run low in pregnancy, supplements of these three nutrients have been recommended by the NAS Committee on Maternal Nutrition and are regularly prescribed by physicians. In 1981 it was discovered that the most popular prenatal vitamin/mineral preparations contained iron in an almost unabsorbable form, so that many pregnant women taking them remained deficient in iron. Such a situation can be avoided if supplement manufacturers were required to carry out studies comparing the absorbability of each nutrient in their products with that of the same nutrient taken alone as a pill by human volunteers eating an average Basic Four diet. It was a study of this type which revealed the problem with iron in prenatal supplements, caused by the way the pills were formulated. It would also be a good idea for absorbability to be indicated in labeling so that consumers can tell what they are actually getting.

Ads for "stress" vitamins suggest that daily intake of the water-soluble vitamins (C and the 8 B-vitamins) is so critical for good health that supplements should be taken for "insurance" against deficiency. That simply is untrue. Storage of these vitamins is limited but not nonexistent. Although the percent stored decreases as the quantity consumed increases, the more that is consumed, the more that is stored.

For example, look at vitamin C, whose 1980 RDA was set at 60 mg for adults. The range of daily need for virtually all healthy people is about 5 to 7 mg, and it is highly unlikely that any normal person needs more than 10 mg daily. Averaging 60 mg per day will result in storage in the liver and other tissues of approximately 1500 mg of vitamin C. This would be enough to last for 150 days, assuming a daily utilization of 10 mg and zero intake of vitamin C during that entire period.

It is very difficult to avoid taking in vitamin C regardless of what you eat. In the United States, vitamin C deficiency (scurvy) is rare, except among those alcoholics who never consume fresh fruits, fruit juices or vegetables, and whose damaged livers have reduced storage capacity for nutrients. One has to work really hard at it to develop vitamin C deficiency in this country, as noted in our case report on "Scalded Sardine Scurvy" [*JAMA* 246:2155-2156, 1981].

The patient in this case was not an alcoholic but had severe economic problems. Eight months before he sought medical attention, the man's refrigerator had broken down so that he could no longer store large portions of perishable foods. Since that time his daily total caloric intake consisted of a pound of well-boiled rice plus a pound of sardines in tomato sauce for dinner. Rice and sardines contain no vitamin C, but tomato sauce does: 12 mg/can (20% of the U.S. RDA) according to the product label. However, instead of eating the sardines fresh from the can, he would pour the can's contents

into a pan, cover with water, bring to a boil and pour onto the separately boiled rice. This cooking method destroyed enough of the vitamin C in the tomato sauce to bring the man's daily intake below the amount needed to prevent scurvy.

Another use of the U.S. RDA and of the RDA is to help determine whether an individual is getting too much of a given nutrient. When intake of a nutrient exceeds the U.S. RDA or RDA, it is often greater than need plus storage, and should raise the question of possible harm. Rough guidelines for toxicity thresholds are 5xRDA for fat-soluble vitamins, 10xRDA for some of the water-soluble vitamins, and 3xRDA for minerals. Again, this applies to normal people and not to those with disorders of nutrient absorption or who are addicted to alcohol, tobacco or drugs of abuse. For a thorough analysis of the hazards of megadosage, see *Vitamins and Minerals: Help or Harm?*, by Charles W. Marshall, Ph.D., published by the George F. Stickley Company.

In regard to tobacco, there is no credible scientific evidence that smokers need more than RDA amounts of vitamin C. The 1980 RDA amounts are six times the amount a normal person would ever need in a day. So even if smokers' needs were doubled, they would still not need more than 20 mg daily. No scientific report of scurvy in a smoker consuming 20 mg of vitamin C daily has ever been published.

Actually, it is conceivable that taking megadoses of vitamin C could increase the incidence of cancer in smokers. Acidification of the urine is known to help flush nicotine out of the body. Since addicted smokers strive to maintain high blood nicotine levels, increased nicotine excretion will lead them to smoke more and thereby increase their risk of cancer. In 1977 it was reported that acidification of the urine with 3.4 grams of vitamin C, three times daily, led to a 20% increase in the number of cigarettes smoked by average smokers [*Journal of Experimental Psychology* 106:13-19]. Since urine can be acidified by 500 mg, four times daily, dosages in this range may have a similar effect.

Dr. Herbert, a member of the Food and Nutrition Board and its RDA Committee, is Vischer Professor and Chairman of the Department of Medicine at Hahnemann University School of Medicine. He is also a member of the WHO/FAO Expert Group on Vitamin A, Iron, Folic Acid, and Vitamin B₁₂.

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BOOK REVIEWS

Title: *Chicken Soup & Other Folk Remedies*
 Author: Joan Wilen and Lydia Wilen
 Publisher: Fawcett Columbine, New York, 1984
 Price: \$4.95
 Reviewed by: Varro E. Tyler, Ph.D.

Recently, this attractively packaged paperback caught my eye as I browsed through a bookstore's healthcare section. I picked it up and, as usual, first turned to the back to learn the qualifications of the authors. There I was informed that Joan Wilen was named for her father's cousin, the town hypochondriac, and her sister Lydia was named for her mother's aunt, the town herbalist and midwife. For these reasons, they felt "particularly qualified" to write this book. The Wilen sisters' background in the home remedy field was equally revealing: "As soon as we signed the contract for *Chicken Soup and Other Folk Remedies*, we went to all our relatives, asking for their home remedies." Let's take a random look at some of the information they gathered in this way. The comments in brackets are mine.

Page 3: Alfalfa seed "is very high in . . . vitamins A, E, K, B-8, D and U." [There are no such things as vitamin B-8, or vitamin U.]

Page 11: "Comfrey is also called knitbone because from the time of the Crusaders, the leaves were used for repairing and drawing fractured bone segments back together." [It may have been used to reduce the swelling and inflammation around a broken bone, but not to heal the bone itself.]

Page 26: "Strawberries . . . contain . . . salacin, which soothes inflammatory conditions." [I assume the authors mean the anti-inflammatory compound salicin. Authorities deny its presence in strawberries.]

Page 59: "Eat 2 ripe bananas a day to chase the blues away. Bananas contain the chemicals serotonin and norepinephrine, which are believed to help prevent mental depression." [These compounds are not active when taken by mouth.]

Page 61: "Sage tea also helps strengthen one's brain and memory." [Other references list more than 60 ailments for which sage is claimed to be therapeutic. The only proven use of sage is as a flavor, especially in turkey dressing.]

Page 63: "Jerusalem artichokes . . . have been said to help stimulate the production of insulin." [Who said so? They may have been said to help, but they don't.]

Page 89: "Bee pollen contains a combination of male and female hormones." [It actually contains neither.]

Page 92: "Licorice has female hormones in it." [Not so!]

Page 127: "When the prostate gland is inflamed, apply a watercress poultice to reduce the inflammation." [Just where should this poultice be applied? The prostate is, to say the least, rather inaccessible.]

Page 151: "A Pennsylvania man . . . rid himself of body odor by taking 30 mg of zinc every day. Within two weeks, he was smelling like a rose." [Of course, since the zinc had no effect, it must be presumed that he supplemented it with rose water baths.]

It is not possible to list here all of the factual errors I noted on first reading. The Wilen sisters admit on page xi they are not authorities, even though one did date a pharmacist and the other enjoys Doc Simon's plays. This being the case, one can only wonder why they would risk tampering with people's health and why their publisher would do the same. Stick to humor, ladies. You're not bad at it, but label your efforts as such.

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs (George F. Stickley Co., Philadelphia).

Title: *Your Basic Guide to Nutrition*
 Authors: Fredrick J. Stare, M.D., Ph.D., and Virginia Aronson, M.S., R.D.
 Publisher: George F. Stickley Co.
 Price: \$11.95
 Reviewed by: William Jarvis, Ph.D.

This volume contains the accurate information characteristic of nutrition experts in a style as readable as "Dear Abby." The principles of good nutrition are reduced to *variety, balance, and moderation*. Chapters include basic nutrition concepts, how to evaluate nutrition information, food supplements, "junk foods" and "fast foods," and a mini-encyclopedia of "health foods" and related products. The widely misunderstood topics of food additives, sugar in the diet, healthy vegetarian eating and practical weight control are presented extremely well. Alcoholic beverages, caffeine-containing drinks, and hard vs. soft water are dealt with as "fluid facts." "Tips for teenagers" covers crash dieting, eating disorders, and alleged performance aids for athletes. After providing much-needed information on the role of diet in cancer and heart disease, the book offers some practical sample diets, a glossary of terms and an excellent list of reliable information sources.

The outstanding feature of this book is its *readability*. This is the book for unsophisticated readers who desire practical nutrition advice. Nutrition educators can benefit by seeing how scientific nutrition concepts can be simplified without sacrificing accuracy.

Dr. Jarvis is Professor of Health Education at Loma Linda University and President of the National Council Against Health Fraud, Inc.

VARIETY AND BALANCE: WHAT DO THEY MEAN?

Eleanor N. Whitney, Ph.d., R.D.
Linda K. DeBruyne, M.S., R.D.

Nutrition professionals commonly say that people should eat a "balanced" and "varied" diet. This article discusses what these terms mean and why this advice is given.

A diet is balanced if it contains appropriate amounts of each nutrient. The importance of dietary balance can be illustrated by the essential minerals, iron and calcium. Inadequate iron intake causes iron-deficiency anemia, while insufficient calcium intake can cause poor bone development during childhood and contributes to bone loss (osteoporosis) in adults. Foods rich in highly absorbable iron, such as meats, are poor sources of calcium. On the other hand, foods rich in calcium (milk and milk products) are relatively poor sources of absorbable iron.

The notion to grasp from this illustration is that a diet is balanced only when a variety of foods are eaten in moderation. Iron and calcium are only two of more than 40 essential nutrients, and meats and milk products are only two of the groups into which foods are usually classified. No single food is complete or perfect (except perhaps breast milk for newborn infants). An ideal balance of foods requires a varied selection from all the food groups to deliver optimal amounts of all the nutrients.

To simplify food selection, various systems of food grouping have been devised. The most familiar one in the United States is that of the U.S. Department of Agriculture. It fits the major foods into four groups:

1. Meat and meat alternates (poultry, fish, eggs, nuts, dried peas and beans)
2. Milk and milk products
3. Fruits and vegetables
4. Grains (breads, cereal and pasta products).

This plan is commonly referred to as the Basic Four Food Group concept or "Basic Four." It specifies that certain quantities of food must be consumed from each group as noted in the table in the next column.

Items that don't fit into any of the Basic Four Food Groups can be grouped into a fifth (non-basic) miscellaneous or "extras" category which includes candy and confectionery products, butter, margarine, cream, sour cream, salad dressing, mayonnaise, jam, jelly, broth, coffee, tea, alcoholic beverages, sodas, and various synthetic products. Some of these products contribute nutrients to the day's intake, but their main contribution is calories. They do not contain enough

other nutrients to warrant inclusion in one of the basic food groups, and most contain mainly fat, sugar and/or water.

The Basic Four Food Groups

Food Group	Daily Servings (for Adults)	Main Nutrient Contribution
Meat and meat alternates	2	High-quality protein; iron, riboflavin, niacin, zinc, B-12, ^a thiamin
Milk and milk products	2	Calcium, high-quality protein, riboflavin, zinc, B-12, thiamin
Fruits and vegetables	4	Vitamin A, vitamin C, ^b thiamin; additional iron and riboflavin; fiber, folacin
Grains (bread and cereal products)	4	Additional niacin, iron and thiamin; zinc in whole grains; fiber

a. Vitamin B-12 is contributed only by the animal food sources in this group.

b. Dark green and deep orange vegetables are reliable vitamin A sources; other fruits and vegetables are not. For vitamin C, citrus fruits, green leafy vegetables, and other selected fruits and vegetables are superior sources.

c. One serving is not a significant source of any of these nutrients, but the recommended four servings contribute significant quantities to the diet. Whole-grain bread and cereal products provide more fiber than do refined ones.

Despite much study and effort in its development, the Basic Four Food Group concept has critics. One critical comment has been that two of the four groups (milk and meat) are animal products, which might lead people to think that half the foods they consume should be milk and meat—which would cause the diet to be undesirably high in saturated fats. However, this criticism ignores the presence of non-meat foods in the meat group and the recommendation of two portions from the milk group, two portions from the meat group, but eight portions from the plant food groups. Calorie and portion sizes vary among foods within each group.

Another criticism is that it is possible for some people to follow the plan's rules and still fail to meet the day's needs for a few nutrients—most notably iron, vitamin B-6, zinc and magnesium. This criticism is only valid if one ignores the need for variety within each food group.

"Serving size" has been defined for exchangeable portions containing approximately the same number of calories and energy nutrients (protein, fat, and carbohydrate). The exchange system used in this country was

devised by the American Dietetic Association and is available in booklet form for \$1.00 from the Association (430 N. Michigan Ave., Chicago, IL 60611). This system contains six food lists, each with a typical member and portion size specified to help remember it:

- Milk—1 cup skim milk (80 calories)
- Vegetable— $\frac{1}{2}$ cup green beans (25 calories)
- Fruit— $\frac{1}{2}$ small banana (40 calories)
- Bread—1 slice bread (70 calories)
- Meat—1 ounce lean meat or low-fat cheese (55 calories)
- Fat—1 teaspoon butter (45 calories)

Although exchange lists were originally developed for diabetics, they are now in general use for diet planning. For nutrient adequacy, a food group plan should be used. To control calories as well, it is convenient to use the exchange lists as guides. For example, the bread list notes that one slice of bread, which contains 15 grams of carbohydrates, 2 grams of protein and 70 calories is equal to:

- $\frac{3}{4}$ cup ready-to-eat cereal
- $\frac{1}{2}$ cup cooked beans
- $\frac{1}{3}$ cup corn
- 1 small potato.

When nutrition professionals speak of "variety," they are suggesting not only that foods be selected from all of the basic food groups but also that selections within each group be varied. Variety is important for two reasons. First, even within the food groups, some foods are better sources of certain nutrients than other foods are. For example, when you drink orange juice, you do well in vitamin C and potassium; and when you eat a peach, you get the benefit of its vitamin A and riboflavin.

The second reason why eating a variety of foods within each group is important is that many foods contain small amounts of undesirable constituents and also a variety of contaminants. The wider the variety of foods consumed, the smaller the chance that any adverse substance will reach a hazardous level in the overall diet.

Dr. Whitney is president of The Nutrition Company, Tallahassee, Florida, a professional group which develops educational materials and presents workshops on nutrition and health topics. She is also co-author of the third edition of *Nutrition Concepts and Controversies* [West, 1985]. Ms. DeBruyne is an associate of The Nutrition Company.

BRIEFS

Sodium labeling postponed. The FDA's requirement that sodium content information be added to product labels disclosing other nutritional data has been delayed one year to July 1, 1986. According to an agency spokesman, the extension was based on requests from about 40 manufacturers and supermarket chains who said they needed more time to comply.

Study of salt intake. Intersalt, administered by Northwestern University and the London School of Hygiene and Tropical Medicine, has begun a study relating salt intake to blood pressure in more than 50 population groups throughout the world. According to an article in *Medical World News*, the researchers plan to collect data from 100 men and 100 women ages 20 to 59 in each study population by mid-1986.

Vitamin classic revised. An updated edition of *Vitamins and Minerals: Help or Harm?*, by Charles W. Marshall, Ph.D., is now available in paperback for \$10.95 from the George F. Stickley Co., 210 W. Washington Sq., Philadelphia, PA 19106. Judged the best trade book of 1983 by the American Medical Writers Association, Marshall's work has also been adopted by Consumer Reports Books as a special publication of Consumers Union.

Action on saccharin moratorium. By a 94-1 vote, the U.S. Senate approved legislation extending for two years the ban on FDA action to bar saccharin from the marketplace. An attempted amendment to require diet drink manufacturers to indicate the amount of aspartame per serving on their product labels was defeated by a 68-27 vote.

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Raw milk implicated in salmonella outbreak. Government investigators probing the largest recorded outbreak of *Salmonella typhimurium* in U.S. history have found evidence that the problem was caused by small amounts of unpasteurized milk that became mixed with the supply of pasteurized low-fat milk at the Hillfarm Dairy in suburban Chicago. After the milk was sold through Jewel Food Stores, the infection—a type of diarrhea—was spread to more than 15,000 people in Illinois and several neighboring states.

Fluoridation case. The Pennsylvania Public Utilities Commission (PUC) has ruled that it does not have the authority to make fluoridation a condition for approval of a rate increase. Instead it said the decision about fluoridation rests with the Department of Health and the Department of Environmental Resources, agencies which have a more primary concern with water quality. The ruling was prompted by a formal complaint against the Philadelphia Suburban Water Company by Sheldon Rovin, D.D.S., who charged that the company—which serves about 50 communities—was providing substandard service by not fluoridating the water. (Dr. Rovin is a professor at the University of Pennsylvania School of Dental Medicine and a contributing editor to *Nutrition Forum*.) Health professionals who testified at a hearing last year argued that lack of fluoridation should have direct bearing on rates since unfluoridated water has less value. The PUC decision has been appealed to Pennsylvania's Commonwealth Court.

Superhealthy doctors? According to a report in *Medical Tribune*, the nearly 22,000 physicians in the nationwide aspirin/beta-carotene study [see NF 1:7, 1:23] are proving so healthy that study leaders have proposed extending the trial from five years to eight in order to gather more data. At the 2-year mark, the participants' death rate appears to be less than 25% that of white males aged 40-84 in the general population. Only 11% of the trial population are smokers.

Free newsletter for professionals. Nutrition, health care or home economics professionals in the U.S. and territories can obtain a free subscription to *Food & Nutrition News*, published five times a year by the National Live Stock & Meat Board, 444 N. Michigan Ave., Chicago, IL 60611. For those in other countries, the cost is \$2 per calendar year or \$5 for three years. Subscription requests should specify job category.

Diet products trimmed. According to the FDA Press Office, all manufacturers of DHEA and CCK diet tablets contacted by the FDA have agreed to stop marketing their products. The promises came in response to warning letters issued in April by the agency [see NF 2:31 and 2:38].

Hope springs eternal for dieters. The monthly newsletter *Life Extension Digest* observed in its April issue: "We were able to account for 338 diet plans and products over the past four years. Many have gone out of business. However, new promoters, most with the same old claims and exaggerations, continue to appear."

Caries vaccine. The National Institute of Dental Research has estimated that an oral vaccine to immunize children against *Streptococcus mutans*, a bacterium that causes tooth decay by converting sugar into acids which erode tooth enamel, may only be three to five years away.

Malnutrition seen in hospitals. A study coordinated by the University of Illinois has found that 58% of 3,172 patients admitted to 33 Illinois hospitals showed evidence of malnutrition. The indicators measured were serum albumin, hemoglobin, total lymphocyte count, and weight-for-height measurement. Savatri Kamath, Ph.D., head of nutrition and medical dietetics at the University told *American Medical News*: "While our study included the largest number of patients and widest spectrum of institutions of any study to date, the results are consistent with a number of single-hospital studies in other parts of the country. Taken as a group they suggest that malnutrition is a pervasive problem among people being admitted to U.S. hospitals."

Infant tooth protection. The Maine Department of Human Services has published a 12"x16" color poster to warn parents that putting infants to bed with bottles containing milk or sweetened liquids can be hazardous to their teeth. The poster depicts mild, moderate and severe cases of "nursing bottle mouth syndrome" and recommends that if a bottle is needed for comfort, it should be filled with water. The agency also suggests that teeth and gums be cleaned after every feeding with a washcloth or gauze square. Posters are available for \$1 from the Maine Department of Human Services, Office of Dental Health, State House, Station 11, Augusta, ME 04333. Checks should be made payable to "Treasurer, State of Maine."

More troubles for GNC. On April 13th, Gary A. Daum was dismissed as president of General Nutrition Inc., the nation's largest health food store chain. In an article in *The Wall Street Journal*, Daum attributed his dismissal to disagreements over authority between him and the heirs of GNC's founder, David Shakarian, who died last September. GNC's earnings for the fiscal year ending February 2nd had plunged to \$11 million from \$24.9 million the year before. And actions against GNC by a former supplier, a competing health food store chain, and several federal agencies were running up legal bills into the millions.

GNC AGREES TO STOP CLAIMS CHALLENGED BY POSTAL SERVICE

General Nutrition Corporation (GNC) has promised to stop making various unproven claims for 14 of its products sold by mail. Nine had been alleged to cause weight loss, three were claimed to enhance mental acuity, one was alleged to prevent cancer, and one was claimed to have special muscle-building properties.

Advertisements for these products had been challenged in False Representation Complaints filed last year by the U.S. Postal Service. (Thirteen of the products were discussed in the January 1985 issue of *Nutrition Forum*; the other was *Risk Modifier*, a vitamin/mineral mixture that supposedly helps prevent cancer.) On February 26, 1985, the company signed consent agreements which, if violated, could trigger fines of up to \$10,000 per day per product. Unless based on competent scientific studies, claims of the following type are now prohibited:

- that any product consisting of vitamins, minerals, RNA, amino acids, choline or other lipotropic substance, phenylalanine, lecithin, or any mixture or combination thereof, will benefit memory or help mental performance.
 - that ingestion of l-glutamine will have a significant effect on the user's emotional balance or mental acuity
 - that ingestion of any product consisting of proteins, amino acids, vitamins, minerals, or any mixture or combination thereof, will, by itself, cause significant build-up of muscle tissue
 - that ingestion of any food supplement consisting of vitamins and minerals will decrease the risk of being afflicted with cancer
 - that spirulina can "turn off" or otherwise affect the appetite control center in the brain, thereby causing the user to eat less
 - that ingestion of glucomannan or any similar fibrous substance will cause an overweight person to eat significantly less food, cause significantly fewer calories to be absorbed by the body, or cause an overweight person to lose any significant amount of weight
 - that any product consisting of amino acids, vitamins, minerals, "lipotropic substances," dietary fiber, herbs, or any mixture or combination thereof, can cause significant weight reduction
 - that "growth hormone releasers" or dehydroepiandrosterone (DHEA) are safe to ingest
 - that application of any product to the skin can result in significant loss of body fat.
- Several of the consent agreements state that un-

less a product has been proven effective, it cannot be advertised as a weight-reduction aid without a clear and conspicuous disclosure that adherence to a reduced calorie diet or an exercise program is necessary for weight reduction. Consistent with this requirement, recent ads for GNC's *Grapefruit Diet with Glucomannan* contain the following statement: "Losing weight requires a reduction in calorie intake. Use this diet product with the included reduced calorie menu plan. Weight loss will depend upon your body size, calorie intake and level of activity." [Editor's note: This is the first disclaimer of this type I have seen in a diet product ad.]

The main weapons used by the Postal Service to combat deceptive mail-order schemes are False Representation Orders that block receipt of money mailed by prospective customers. Years ago, such orders applied only to specific advertising claims for specific products sold by companies named in the orders. But they did not prevent offenders from making similar claims for similar products or changing company names with the hope of profiting before the Postal Service was able to stop the new scheme. However, amendments to the mail fraud laws that took effect in 1983 enable the Postal Service to investigate cases quickly and to seek large financial penalties against repeat offenders.

QUESTION BOX

Q. What is the American Academy of Certified Medical Nutritionists?

A. It is a nonprofit professional organization founded in February 1984 to represent physicians with proven competence in the subspecialty of clinical nutrition. Members must be certified by the American Board of Nutrition, which requires: board-certification in a medical specialty, completion of significant nutrition research, and passage of written and oral examinations. The Academy's goals include: 1) development of accreditation standards for clinical nutrition services, practice and training; 2) promotion of interprofessional collaboration and information exchange; and 3) dissemination of accurate information through the media to the general public. The Academy's address is 1119 Rockville Pike, N. Bethesda, MD 20852. A membership directory is available for \$5.

FDA RESPONDS TO CONSUMER REPORTS ARTICLE

Stephen Barrett, M.D.

The Food and Drug Administration wasted no time in responding to *Foods, Drugs, or Frauds?*, the 9-page cover story in the May 1985 *Consumer Reports* which sharply criticized the agency's regulatory policies toward quack products. On April 16, FDA Commissioner Frank E. Young, M.D., Ph.D., sent a letter to the editor citing recent agency actions and stating that "increased activity against quackery is one of FDA's top priorities in our soon-to-be-released Action Plan." An *FDA Talk Paper* dated April 24, 1985, distributed with copies of Dr. Young's letter, added that: "Many of the products mentioned in the article were known to the FDA and were under investigation, covered by the OTC drug review or already acted upon by the agency. Those new to the agency will be scheduled for coverage in the future."

The *Consumer Reports*' article contains a chart of 42 companies marketing or distributing products in violation of federal laws, and the article's text names several others. According to FDA press officer Bruce Brown, four of the companies are under investigation and ten have been subjected to FDA enforcement action (including one that took place 23 years ago). But, said Brown, the agency had no knowledge of the illegal activities of 25 companies cited in the magazine's report.

This is a very dismal record. The methods used by *Consumer Reports* to gather information were simple and took little time. Moreover, several weeks before the investigation began, I mailed the names and addresses of 8 of the 25 companies to Joseph Hile, the FDA's top enforcement official, suggesting that he send for their catalogues because I believed these companies might be breaking the law. After personally confronting Commissioner Young at the FDA's October 9th press conference on quackery [see NF 2:9], I mailed the same list to him and to a member of the FDA's health fraud branch. How the agency can claim no knowledge of these companies or their products six months later is beyond my comprehension.

Just as serious is the pretense that the FDA's dealings with the companies "known," "under investigation," or "acted against" are significant. Most of these companies did not stop breaking the law as a result. (For example, most who made labeling changes for a single product continued to market others just as illegally. Moreover, the agency commonly "investigates" for more than a year before taking action against illegally marketed food supplements.) The actions referred to by the talk paper involve warning letters, seizures, and civil court procedures under a regulatory policy that rarely

prevents lawbreakers from making large profits [see NF 1:1-2].

A similar report, published on April 29th by *Newsday* (Garden City, New York), described how local company officials knew they were violating the law by making unsubstantiated claims. One even said he had notified the agency of what he was doing (with the hope of gaining approval) and, having had no response within 30 days as requested, was restoring label claims forbidden by the FDA in 1982. (In the interim, the agency had taken no action when he continued to make the illegal claims in literature sold with the product.)

The *Consumer Reports* investigation collected evidence regarding hundreds of products marketed with unapproved therapeutic claims. Although Consumers Union is willing to provide this material to the FDA, no request from the agency has been received so far.

During the past year, the FDA has greatly stepped up its educational efforts against quackery—a program that deserves great praise. It has also increased its investigatory efforts. (For example, after undercover agents gathered evidence at a health expo held last February, thirteen companies were warned to either stop selling their products or face legal action.) But I believe—as do the editors of *Consumer Reports*—that only a systematic program of early detection and *criminal* prosecution that deters violations can solve the problem of illegally marketed food supplements. No such policy appears to be under consideration. The FDA's "soon-to-be-released Action Plan," drafted last September, is merely a list of generalities.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 20 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984, he received an FDA Commissioner's Special Citation Award for Public Service in combatting nutrition quackery. The May 1985 issue of *Consumer Reports* can be obtained for \$3 from the Back Issue Dept., *Consumer Reports*, P.O. Box 2840, Boulder, CO 80322.

COMING SOON
The Sulfite Dilemma
Bill Intended to Outlaw
Fluoridation in U.S.

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THE SULFITE DILEMMA

Kathleen A. Meister, M.S.

Bills are now pending in both houses of Congress to ban certain uses of the food additives known as sulfiting agents and call for prompt reassessment by the FDA of all other uses of these substances. This situation is extraordinary; Congress has intervened only once before in FDA regulation of a specific food additive (by repeatedly preventing the agency from banning saccharin). However, the additives in question are also extraordinary. They have been thought safe for centuries and have a complex pattern of use. Yet in the past decade, they have been found to cause severe adverse reactions in sensitive individuals, presumably including 12 deaths, according to the most recent FDA figures.

The sulfiting agents comprise sulfur dioxide and five inorganic sulfite salts that release it: potassium bisulfite, potassium metabisulfite, sodium bisulfite, sodium metabisulfite and sodium sulfite. Their use in foods can be traced back to the ancient Romans, who burned sulfur and bubbled the resulting sulfur dioxide gas through wine in order to stop fermentation at the desired point. Sulfiting agents are still used today to control microorganisms that could produce undesirable changes in wine. In addition, they are used in many foods and drugs as antioxidants to delay undesirable chemical changes such as browning. Sulfites are used with various frequencies in the processing of food ingredients such as gelatin, beet sugar, corn sweeteners and food starches. And they are ingredients in many processed foods, including certain baked goods, dried fruits (except dark raisins and prunes), a few types of fruit drinks, beers and vegetable products (especially dried vegetables).

Contrary to popular belief, sulfites are not used only for cosmetic purposes; they have a variety of useful technical effects. For example: during the wet milling of corn, they control microorganisms; in frozen doughs, they serve as reducing agents or dough conditioners; and for some foods, such as maraschino cherries, they serve as bleaching agents. They can also prevent both enzymatic browning (in fresh fruits and vegetables) and

non-enzymatic browning (in dried fruits and dehydrated potatoes).

Sulfites are added to some domestic and virtually all imported fresh shrimp to prevent blackening. Sulfiting agents are also sold as "vegetable fresheners" and "potato whitening agents." As such, they may be used in restaurants and other food service establishments to keep raw fruits and vegetables (particularly those displayed in salad bars) looking fresh, and to prevent discoloration of a wide variety of potato products.

Sulfiting agents are legally classified as Generally Recognized As Safe (GRAS) substances. In 1976, as part of a comprehensive review of the safety of GRAS substances, an expert panel organized for the FDA by the Federation of American Societies for Experimental Biology (FASEB) concluded that the available scientific evidence did not indicate that customary use of sulfites posed a health hazard to the public. In 1982, based largely on this report, FDA proposed to affirm the GRAS status of four of the sulfiting agents. However, in these intervening six years, reports of adverse reactions had begun to appear in the scientific literature. Since 1982, they have been widely publicized in the lay press as well, and some consumer organizations have been campaigning for restrictions on sulfite use.

One such group was founded by B. Carolyn Knight, a woman from California who has suffered severe adverse reactions to sulfiting agents. Ms. Knight, an asthmatic, describes herself as a "canary in a coal mine" and wrote a book by that name which was published this year by Aristan Press [P.O. Box 395, Placentia, California]. Although her story is moving, her analogy is incorrect. Unlike the canaries which were taken into mines to alert miners to poison gases, individuals who react to sulfites do not represent an advance warning of danger to the general public. Sulfites are hazardous to only a small fraction of the population which is especially sensitive to them.

It has been estimated that between 5 and 10 percent of asthmatics are sulfite-sensitive, although recent

data from the University of Wisconsin indicate that the prevalence is more like 1 to 2 percent. The Wisconsin data also show that steroid-dependent asthmatics are the primary population at risk. When exposed to sufficient amounts of sulfiting agents, these individuals may experience asthma attacks of varying degrees of severity. Other symptoms such as hives, diarrhea, other gastrointestinal symptoms, and symptoms suggestive of anaphylactic shock have been reported, but these symptoms have not been documented in controlled challenge trials. The well-documented cases of sulfite sensitivity all involve asthmatics, some of whom have been shown to suffer asthma attacks when exposed to sulfiting agents under controlled laboratory conditions or to sulfites used in preservatives contained in medications used to treat asthma. There have also been a few anecdotal reports of people with no history of asthma becoming very ill after exposure to sulfites. However, in most of these cases, it is not clear whether the sulfites were actually responsible.

The mechanism of sulfite sensitivity is not known. One hypothesis, proposed by Drs. Donald D. Stevenson and Ronald A. Simon of the Scripps Clinic and Research Foundation, two of the leading researchers on sulfite sensitivity, is that sulfite-sensitive asthmatics have a partial deficiency of sulfite oxidase, the enzyme that converts sulfites into harmless sulfate. Stevenson and Simon believe that sulfiting agents can trigger asthma attacks in all asthmatics if a sufficient quantity reaches the lungs. Ingested sulfites are ordinarily converted to sulfate before they reach the lungs via the bloodstream. However, in a person with the postulated enzyme deficiency, a dangerous amount of sulfite could reach the lungs intact.

It is known that some people are born with a total deficiency of sulfite oxidase, but the existence of partial deficiencies has not been conclusively established. Individuals with the total deficiency are mentally retarded and have other severe abnormalities, presumably because they cannot handle the sulfite generated by their own bodies (mostly from the metabolism of the amino acid cysteine). According to Stevenson and Simon, individuals with asthma who have the postulated partial deficiency have enough enzyme to deal with this endogenous sulfite but may not be able to handle a sulfite load introduced from outside the body.

Other researchers suspect that sulfite sensitivity may be caused by direct irritation rather than an enzyme deficiency, and they suspect that sulfiting agents may reach the lungs directly (through inhalation of sulfur dioxide given off from sulfited foods or through burping when sulfites are present in the stomach) rather than through the bloodstream.

Most of the clinical research on sulfites has involved the administration of known amounts of free sulfite to sulfite-sensitive individuals. However, it is not known—and it is desirable to know—whether the adverse response of sensitive individuals is influenced by

the form of the sulfite (free, irreversibly bound, or reversibly bound) and by the presence of other food ingredients that accompany sulfites in normal diets.

Sulfites pose complex regulatory problems. Ordinarily, substances are not banned from the food supply because a small segment of the population is sensitive to them. If this were done, most foods would have to be banned, since there are people allergic or intolerant to practically everything we eat. However, there is an urgent need to protect sulfite-sensitive individuals from life-threatening exposure to sulfites, and this may well require banning some uses of sulfiting agents.

The usual regulatory solution to allergy and sensitivity problems is labeling to help sensitive individuals avoid the offending ingredient. Currently, not all uses of sulfites appear on the label. When sulfites are used as direct food additives (as in dried fruit), they must be listed as ingredients. However, when they are present as indirect additives (used in the processing of ingredients which later become part of the final food product) they are not listed. The use of sulfiting agents on bulk foods, such as raw shrimp, is not indicated on the label (if indeed these products are labeled at all). Nor is their use required on the label of alcoholic beverages, which are under the jurisdiction of the Bureau of Alcohol, Tobacco, and Firearms (BATF) rather than the FDA.

The use of sulfiting agents on restaurant foods poses the most difficult problems. Most of the reported severe reactions to sulfites involve restaurant foods, probably because the free sulfite residues remaining on these foods, which are treated shortly before consumption, are generally much greater than those on processed foods treated with sulfites. Also, the potential for abuse of sulfites may be greater in restaurants. No mechanism for warning diners about potential hazards in restaurant foods has been accepted by all of the parties concerned. Moreover, although the FDA probably has the authority to regulate the use of sulfiting agents in restaurants, control of food in restaurants has traditionally been left to state and local authorities.

The FDA has urged states to require restaurants to warn patrons about the use of sulfites through menu statements, placards, or similar means, but few states have complied. The restaurant industry (through its trade group, the National Restaurant Association) has vehemently opposed sulfite labeling in restaurants, con-

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tending that it is unworkable, that non-sensitive individuals would be misinformed by it, and that restaurant personnel often do not know whether sulfites are present in a food, since they may be added by suppliers. Fresh fruits and vegetables for salads and potatoes for cooking are often sold to restaurants in cut-up form and treated with sulfiting agents by the supplier.

The National Restaurant Association has urged its members to discontinue the use of sulfiting agents and reports that most have done so (although the supplier problem remains). The Association would prefer a ban on the use of sulfites in restaurants to a labeling requirement.

A total ban on sulfites is not under consideration. Some uses of sulfites appear to be essential. It has been claimed, probably correctly, that both wine and dried fruit could not be produced commercially without them. There are substitutes for some other uses of sulfiting agents, but they are generally more expensive and less effective. Many uses of sulfiting agents in food processing leave such small residues that they are not likely to pose hazards even to highly sensitive individuals.

The FDA has stated in the past that the sulfite problem can be solved by labeling, but it is doubtful that the agency still holds this view. A special FASEB panel which reexamined the status of sulfiting agents for the FDA contended in a tentative report issued in the Fall of 1984 that labeling would be sufficient. The panel concluded only that "appropriate identification of foods containing sulfiting agents should be instituted to enable those sensitive to these substances to avoid them." However, after considering the information presented in an open hearing and in written comments, the panel concluded in its final report issued in January 1985 that additional labeling requirements alone would not assure protection. The panel said that problems are "particularly likely when sulfite-treated fresh fruits and vegetables and precut potato products are dispensed in food service establishments or sold in grocery stores, and consumers, servers, and store personnel are not aware that sulfiting agents are present" and that "discontinuance of these uses should be encouraged by appropriate use of the regulatory process."

These specific uses of sulfites would be banned under legislation proposed by Senator Albert Gore (D-Tenn) and Representative Ron Wyden (D-Oregon). Their identical bills introduced in both houses of Congress

would declare sulfiting agents unsafe for use on any fruit or vegetable sold for consumption in the raw state and on any potato which is cut and sold to be cooked before consumption (except for dehydrated potatoes).

The Gore/Wyden bills may never reach a vote, however, because the FDA may take similar action and make their passage unnecessary. At a Congressional hearing in March 1985, FDA Commissioner Dr. Frank E. Young was severely criticized for his agency's inaction on sulfites. Following that hearing, the agency has reportedly taken steps toward several sulfite-related actions. One is a field survey of the uses of sulfites in foods. This may sound ridiculously basic, but it is necessary because reliable data on sulfite use and consumption do not exist. The reasons for this lack include: 1) difficulty in accurately assessing the amounts of sulfites added to foods; 2) the often substantial differences between the amount of sulfite added to a food and the amount remaining in the final product; 3) inadequate methods of accurately measuring free and bound sulfites in food; 4) the extensive use of food-grade sulfites in drugs and other non-food products; and 5) the fact that some people are exposed to sulfites through the air.

On April 3rd, the FDA proposed that sulfites be declared on the labels of all foods which contain detectable levels of 10 parts per million (ppm) or higher, whether they were added to the food or to one of its ingredients. Whether this regulation could be enforced is uncertain, however, because some experts contend that even the best analytical methods for sulfites are not reliable at levels below 50 ppm.

Finally, the FDA is apparently planning to propose a ban similar to that proposed by Gore and Wyden, except that it may not exempt dehydrated potatoes. In the past, the BATF has stated that it would follow the FDA's lead if it decides that sulfite labeling is necessary. The FDA has made this decision and has informed BATF of its action.

Mrs. Meister is a research associate with the American Council on Science and Health. A free leaflet that tells hypersensitive asthmatics how to avoid sulfiting agents when dining out has been released by the National Restaurant Association together with the American College of Allergists. For a copy, send a self-addressed 4"x9½" envelope to Kathy Hall, National Restaurant Association, 311 First St., N.W., Washington, DC 20001.

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BILL TO OUTLAW FLUORIDATION APPEARS DEAD

On March 19th, U.S. Congressman John Seiberling (D-Ohio) introduced legislation intended to stop fluoridation throughout the United States. The proposed bill (H.R. 1589) would amend section 1450 of title XIV of the Public Health Service Act (the Safe Water Drinking Act) to prohibit the addition of any chemicals to drinking water for any purpose except: 1) to make the water safe for human consumption; 2) to test the water for contamination; or 3) to improve the water's taste or clarity.

With the bill's introduction, Seiberling stated into the *Congressional Record* his belief that fluoride may be a threat to health "for at least some people." He also said, "We should be especially concerned about the precedent created by adding chemicals to the public water supply in order to treat a small segment of the public . . . whether they want it or not. If it can be done with one chemical in the name of combatting tooth decay, why not add iodides to combat goiter, potassium to combat high blood pressure, tranquilizers to combat tension,

and so on. The possibilities are endless. The dangers are obvious."

The National Health Federation initiated a letter-writing campaign in support of H.R. 1589. Among its arguments are assertions that "fluorine is a cumulative poison" and that "storing fluoride at the source of our water supplies is an open invitation to terrorists."

Both houses of Congress subsequently approved reauthorization of the Safe Water Drinking Act without Rep. Seiberling's amendment. Differences between the House and Senate versions are being worked out in conference committee, but Seiberling's amendment can no longer be considered part of this process. Although H.R. 1589 could conceivably see action as an independent bill, knowledgeable observers give it little chance for further consideration. So far only six congressmen have become co-sponsors: Norman Lent (R-NY), Robert Lagomarsino (R-CA), Walter Fauntroy (D-DC), Parren Mitchell (D-MD), Joseph Addabbo (D-NY), and Edolphus Towns (D-NY).

CHINESE FOOD: DIET OF THE PAST MAY BE DIET OF THE FUTURE

Jacqueline M. Newman, Ph.D., R.D.

In the American culture, food is viewed in many ways. In the March *Nutrition Forum*, dietitian Virginia Aronson said that eating should be one of life's great pleasures. How unusual to be reminded of this. Every month, many magazines recommend food restrictions and diets for weight loss, disease prevention, and/or cure. Amazingly, most are purported to be new and revolutionary. If new diets are needed that frequently, of what value are they?

The Chinese have not had a new diet for centuries. Their old one was intended not only for enjoyment but also for good health. Food and diet, especially for the prevention of ill health, have always been of great importance to the Chinese. Their culture expresses care and concern in the acts of purchasing, preparing and cooking food, and especially in eating, a joy appreciated at all levels of society.

In the 8th century A.D., a Chinese book called *One Thousand Golden Prescriptions* advised that rice polishings could be used for a disease whose symptoms are now recognized as those of beri-beri. It was not until many centuries later that a cure for this vitamin B deficiency was discovered in the West. Records from 300 years later indicate that an emperor's physician pre-

scribed a special diet for the recovery of his majesty, a diet he believed would help—and help it did. In the late 1500's, a Jesuit priest commented after a visit that Chinese people who did not die of famine or contagious disease were living longer than Europeans. Furthermore, the priest said, the Chinese retained physical powers as they aged and lived to 70 and beyond.

The Chinese traditionally believe that each meal has five basic taste sensations: sweet, sour, briny, hot and bitter. To make such meals, a large assortment of foods must be prepared, though few in large amounts. This broad variety of foods at each meal provides nutritional balance and a large variety of needed macro- and micronutrients. Great flexibility in meal planning and food consumption is possible because of unlimited use of fresh fruits and vegetables, limited amounts of animal protein, and less animal fats than in typical American diets. Since foods are cooked quickly (mostly stir-fried or steamed), they retain more vitamins and minerals than do those cooked by most Western methods, and no cooking liquids rich in nutrients go uneaten.

An additional principle is frugality. The Chinese believe that overindulgence in food or drink is a sin. At the dinner table, many a wise Chinese parent tells his

offspring that the ideal amount for every meal is "chi fen pao," which translates to "70 percent full." The degree of fullness is to be kept in mind throughout the day. The Chinese rarely snack between meals because they want to stay "chi fen pao." Soups are their beverage of choice at mealtime, and desserts, as Americans know them, are only special occasion foods. After meals, the Chinese eat fresh fruit or nuts.

Another dietary principle involves the division of "fan" and "tsai." Fan, the grain or starch component of the meal is considered the primary food without which one truly cannot be full. The importance of the word "fan" is indicated by its use in the Chinese language. *How are you* is an expression asking whether you have had your fan. And those who are unemployed have no "fan," or more exactly translated, no rice bowl. "Tsai," the vegetable or vegetable plus meat component, is said to complement or enhance the "fan."

Under Chinese philosophy, meat is rarely served in large pieces or large amounts. Rather it accompanies or is mixed with vegetables to enhance the meal's taste. Meat is also believed to make the meal healthy, but only if used in appropriate amounts. The Chinese consume both fan and tsai at every meal. The amount of fan considered appropriate is about 60%. More than half of the remainder, counted in calories, will be from fruits and vegetables, which leaves only 15% from meat and fat. However, on holidays and special occasions, meat can be served in fan amounts, and fan itself takes a lesser role.

The last important principle of Chinese eating embodies balancing "yin" and "yang," which are said to denote the negative and positive cosmic polarities: female versus male, darkness versus light, or cold versus hot. Many foods and cooking processes are classified as yin or yang. The Chinese believe that balance of these opposing forces is vital to good health because excess of either results in disease.

When illness occurs, counterbalance is believed to restore the body to health. For example, "weak blood," pregnancy, menstruation, shivering, cancer, being elderly, and wasting are considered "yin" health conditions that require rebuilding of lost strength with "yang" foods. These include beef, chicken, chicken soup, eggs, garlic, ginger root, pork liver, shellfish, tangerines, and tomatoes.

On the other hand, "yang" health conditions, such as fever, hypertension, sore throat, upset stomachs, general infections, and blood ailments are said to warrant a diet rich in "yin" foods. These foods include boiled items, most greens, lots of water, bland foods, and many white foods including potatoes, bean curd, turnip and milk.

Overall, Chinese dietary principles bear striking resemblance to today's modern principles of dietary balance, variety and moderation. The traditional Chinese diet is well-balanced, high in fiber and low in saturated fats. Almost one-fourth of the world's population is eat-

ing the Chinese way. It well may be the diet of the future.

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QUESTION BOX

Q. Does charcoal broiling produce cancer-causing substances?

A. This question has been raised as a result of the discovery a few years ago of cancer-causing substances in charcoal-grilled meats. These substances are not formed by the cooking process itself but are contained in the smoke that arises when fat from the meat drips onto the hot coals. According to the American Council on Science and Health (ACSH), the significance of this discovery has been greatly exaggerated, the amounts of carcinogens found were extremely low, and these chemicals are also produced to a lesser extent by other methods of cooking. ACSH believes "there is no convincing evidence that eating charcoal-grilled meats poses any hazard to health." However, those still worried about this issue can avoid or minimize it by positioning their coals so that fat from the meat can't drip on them or by placing a barrier such as aluminum foil between the meat and the coals.

The objectionable substances produced during severe heating of fats are called polyaromatic hydrocarbons, with benzopyrene being the best known example.

BRIEFS

Consumer attitude poll. According to the Food Marketing Institute's annual survey of consumer attitudes, consumer concern about the nutritional quality of foods has declined during the past year. This year, 59% of 1,005 shoppers said they were "very concerned" about the nutritional content of what they eat (down from 63% in 1984). Among males, this figure dropped sharply from 62% to 51%. The survey found little change in attitudes toward food safety, with the following concerns viewed as serious hazards: residues such as pesticides (73% of participants), cholesterol (44%), salt (39%), additives and preservatives (36%), sugar (29%), and artificial coloring (28%). The survey, conducted by Louis Harris and Associates, is available for \$30 from FMI's Research Division, 1950 K Street, N.W., Washington, DC 20006.

Drug laws being tightened. The FDA wants to require reporting of adverse reactions to drugs marketed before Congress passed the 1938 law requiring FDA approval of new drugs. The absence of a reporting system for older drugs (and their newer versions) may have delayed the recall of E-Ferol, an intravenous vitamin product associated with the death of 30 premature infants in 1983 and 1984. The proposed regulations would extend the reporting requirements to 4,200 prescription drugs being sold without premarket approval, including vitamin products used in medical treatment. Under these regulations, any serious, unexpected adverse drug reaction or significant increase in the rate of expected reactions must be reported within 15 working days—or sooner if possible. This is the second major step the FDA has taken to prevent situations similar to the E-Ferol tragedy. Last September the agency announced that manufacturers can no longer market new versions of old drugs without FDA approval unless they are intended for the same use and are identical in chemistry, strength, route of administration, intended patient population, and dosage form.

Paleolithic nutrition revisited. An article by Drs. S. Boyd Eaton and Melvin Konner of Emory University in the January 31, 1985 *New England Journal of Medicine* suggested that the diet of prehistoric people might be desirable because it is "nutrition for which human beings are . . . genetically programmed." This viewpoint was rebutted by a letter to the editor in the May 30th issue by Dr. Ted Bader of St. Luke's Hospital, Denver, who said: "Natural selection means the passing on of genetic traits that enhance reproductive ability, but not necessarily the traits that promote old age." So it should not be assumed that the prehistoric diet will protect people against the chronic diseases of older adult life.

Mayonnaise and food safety. Many people are uneasy about eating chicken salad, potato salad or similar dishes at summer picnics because they have heard that food made with mayonnaise is the most likely to cause food poisoning. However, scientists at the University of Wisconsin have shown that adding mayonnaise to meat salads tends to retard the growth of harmful food-borne bacteria [*Journal of Food Protection* 45:152-156, 1982]. This protective effect is not a substitute for refrigeration. The American Council on Science and Health suggests that a basic rule to prevent bacterial food poisoning is to keep hot foods hot and cold foods cold. Perishable foods (with or without mayonnaise) may not be safe to eat after staying at temperatures of 60°F or higher for three or four hours. A practical way to keep foods safe for a summer picnic is to keep them in a cooler with ice or reusable cold packs. Packing the food (or the ice) in plastic bags or waterproof containers will prevent the food from becoming wet when the ice melts. Raw meats, which may contain harmful bacteria, should be kept separate from other foods. Bacteria in the meat will be killed during cooking but could cause problems if they contaminate foods that are not cooked prior to eating.

USDA food safety hotline. Since July 1st, the Food Safety and Inspection Service of the U.S. Department of Agriculture has had a toll-free number for questions about the safety or wholesomeness of meat and poultry products, and about FSIS programs such as meat and poultry inspection, labeling, additives, and residues. Calls are answered between 10:00 a.m. and 4:00 p.m. Eastern Daylight Time at 800-535-4555 (or 447-3333 in Metropolitan Washington, DC). A list of free (or nominal cost) consumer publications on food safety and other topics can be obtained by writing to the FSIS Publications Office, Room 1163-South, U.S. Department of Agriculture, Washington, DC 20250.

Few newspapers list health ad standards. According to a survey by *Con\$umer New\$weekly*, only 301 (17.9%) of the nation's 1,688 daily newspapers list anything under "advertising not accepted" in the just-published 1985 *Editor & Publisher International YearBook*. But only 25 papers (1.5%) list questionable therapies or doubtful medical products as classes of ads they won't accept—up from 20 in 1984. About 60 others won't take "objectionable" ads or state that all advertising requires approval of the publisher, double the number with such a disclaimer last year. In May 1984, the FDA and the Council of Better Business Bureaus mailed guidelines to all papers and asked them to screen out fraudulent health ads (see NF 2:9).

Free reprints. Single copies of "Critiquing Quack Ads," "Rethinking the Need for Food Standards," and "Riding the Coattails of Homeopathy's Revival" from the *March FDA Consumer* are available on request from the Food and Drug Administration, HFE-88, 5600 Fishers Lane, Rockville, MD 20857. Multiple copies can be obtained by using the agency's "internal zip code" of HW-40 instead of HFE-88. Copies can also be obtained from FDA's consumer affairs offices in 29 cities.

New radio programs. The Center for Science in the Public Interest is broadcasting 90-second commentaries on nutrition called "Eater's Digest." Programs are transmitted five days a week by satellite to about 1,500 radio stations which have the option of using it. The People's Medical Society, a Rodale Press offshoot, has begun syndication of its weekly "People's Medical Hour." This organization is primarily concerned with "abuses" within the health care system, but it has also been promoting unproven nutrition practices.

SOY DRINK PAMPHLET RECALLED

On June 19th, the FDA and Eden Foods, Inc., of Clinton, Michigan, warned consumers not to use Edensoy and similar soy drinks as an infant formula or sole source of nutrition. This action was triggered by a report that a 6-month-old Canadian infant had developed vision problems and rickets due to deficiency of vitamins A and D after consuming only Edensoy for five months. A pamphlet, various advertisements, and other promotional materials distributed by Eden Foods since 1983 have erroneously suggested that Edensoy can substitute for breast milk or infant formula. The pamphlet also said (falsely) that "Edensoy compares very favorably with cow's milk." Clerks in 2 out of 24 health food stores visited by FDA inspectors on June 14th recommended Edensoy as an infant formula substitute. The company has issued warning placards to health food stores and asked the stores to destroy or return supplies of the misleading pamphlet.

Soy drinks (sometimes sold as soy milk) typically contain water, soybeans, vegetable oil and other ingredients such as kelp, pearl barley, barley malt, and salt. They should not be confused with soy protein formulas that are specially formulated with essential amino acids, vitamins, minerals and other substances to provide all of the nutrients required by infants or others consuming them as a sole source of nutrition. Use of these special formulas is generally limited to infants born allergic to cow's milk.

BOOK REVIEW

Title: *Thirty Days to Better Nutrition* (1984)
Author: Virginia Aronson, R.D., M.S.
Publisher: Doubleday & Co., Inc., Garden City, NY
Price: \$10.95, softcover
Reviewed by: Beulah W. Harmon, M.S., R.D.

Thirty Days to Better Nutrition is a compendium of basic nutrition-and-lifestyle written as a workbook with daily assignments. Each chapter explores a single topic such as basic food groups, major nutrients, calories, weight goals, menu and market planning, exercise, health quackery, and diet-drug interactions. One chapter is intended for study on each of the 30 days. Chapters progress in a logical manner from general topics of food, dietary and lifestyle habits and attitudes to specific subjects of nutrient functions, requirements and sources. Also considered are nutrient balance, desired caloric levels, adequate nutrition in planned menus, efficient supermarket shopping (including a detailed "Supermarket Psychology Map" with tips on how to avoid problem areas and temptations), physical activity, and stress reduction. The information is current and scientifically based.

The book seems most appropriate for laypersons with an avid interest in their own nurturing. Some colleges are using it as a supplementary textbook. Active personal involvement requires making lists, recording daily food intake and aspects of lifestyle, analyzing the data recorded, and reviewing various lists in light of the new information presented in subsequent chapters. Pre-tests, post-tests, numerous questions and reference assignments guide the reader in gathering information and analyzing individual values and goals. This approach intends to motivate the participant and requires commitment to the program. Making lists and preparing charts may become tedious with the increased need to record personal data, to make evaluations, and to organize plans of action as the program progresses. However, laypersons with the tenacity to complete daily assignments and to follow the book's guidelines will enjoy the rewards of increased self-awareness and nutrition knowledge.

Ms. Harmon is a Registered Dietitian in private practice and a nutrition instructor. She is director of Dietetic Consulting Services, Independence, Iowa.

COMING SOON
Stir-fry Cooking
Confusion on Diet and Cancer

MOVIE TO PROMOTE VITAMIN PRODUCT

Alacer Corporation of Buena Park, California, has announced that screen star Sylvester "Rocky" Stallone plans to plug *Emergen-C*, the company's vitamin C/electrolyte mix, during his next film. Stallone's enthusiasm for the product is vividly described in the poster pictured below, distributed June 1 to health food retailers throughout the United States. The poster claims that Stallone was the only member of a film company exposed to chilling temperatures who escaped the flu during filming of the movie *First Blood—Part II*—a circumstance he attributes to ingesting a packet of *Emergen-C* every 45-60

minutes during the physically stressful scenes. Each packet provides 1,000 mg of vitamin C, small amounts of five minerals, and 25% of the USRDA of six B-vitamins—plus fructose and lemon-lime flavoring. The contents are added to water or juice to produce an effervescent drink. A box of 36 packets retails for \$10.95. According to *TIME* Magazine, gross earnings during the first two weeks of Stallone's current hit, *Rambo: First Blood, Part II*, were the third highest in motion picture history. A claim that *Emergen-C* or any other nutrient mixture can prevent "flu" would be illegal to make on a product label.

Sylvester Stallone and *Emergen-C*[™]

Sylvester "Rocky" Stallone has been for many years an enthusiastic user of Alacer's *Emergen-C*[™], the fizzing Vitamin C, electrolyte, drink mix which has been for years the #1 seller among health food supplements.

Indeed, Sly, as he's known to his friends, says he doesn't know how, without *Emergen-C*[™], he could have gone through his training program for *Rocky III*, which included trimming his weight by 41 pounds and developing the muscles and stamina required for the great fight of the picture.



Jay Patrick, Alacer President, visits with "Rocky" in the fabulous California home of the famous actor-author-director.

Emergen-C[™] has also had an active role in production of *First Blood* and in the latest, sensational hit, *Rambo: First Blood, Part II*.

Probably the most severe test of *Emergen-C*[™] came during the filming of *First Blood*.

As Rambo, the highly trained veteran of Vietnam who has "flipped out", he had to wade some 20 times through 33 degree waters, torrential downpours, and mud, often sleeping outside when the wind was blowing with a chill factor of 40 to 45 degrees below zero.

"But I took a packet of Emergen-C[™] every 45 minutes or an hour. I was the only one in the whole company who escaped the flu. In one scene where I had to spend five days in a cave, up to my neck in freezing water with over 200 rats, I was scratched and bitten, going through this putrid water. The rats had a horrible smell.

"But my immune system must have been working, I guess. I was just totally impervious to it all. There seemed to be nothing I could do to get sick, literally. Yet a few years ago, if someone would cough three blocks away, I would catch it."

Reviews of *Rambo: First Blood, Part II* have been overwhelmingly favorable. Indeed, it's being described as "a block buster hit".

Coming! . . . Rocky IV

No payment has been made to Mr. Stallone for his endorsement of *Emergen-C*[™]. Indeed, Sly has reported to Mr. Patrick that he plans several scenes in the forthcoming *Rocky IV* that will show him using *Emergen-C*[™] as he continues his role of the hard-hitting fighter who wins out against enormous odds.

Alacer Corp.
BUENA PARK CA 90622

Emergen-C



"The Champagne of Nutritional Drinks"

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NEW BOOK REFLECTS CONFUSION ON DIET AND CANCER

Kathleen A. Meister, M.S.

Should Americans change their diets in an effort to prevent cancer? If so, what changes should they make? These questions are the focus of a major controversy in the scientific community—a controversy that involves policy questions as well as scientific ones.

In *What You Can Do to Prevent Cancer* [Simon and Schuster, 1985], Oliver Alabaster, M.D., Director of Cancer Research at the George Washington University Medical Center, presents views on the diet/cancer issue that are at one extreme of the spectrum of scientific opinion. He suggests that dietary changes intended to prevent cancer "may be one of the greatest investments in living that you ever make." He reports that as much as 60% of cancer in women and 40% of cancer in men are attributable to dietary factors. And he states that "it has also been estimated that at least 35% of all cancer in the United States could be eliminated by simple changes in the nation's diet, using our current knowledge of dietary risk factors."

To those unfamiliar with the scientific literature on diet and cancer, these percentages may seem startlingly high. However, they are actually derived from the work of distinguished cancer epidemiologists. The 60%/40% figures come from an epidemiological study by Drs. Ernst Wynder and Gio Gori published in 1977 in the *Journal of the National Cancer Institute* [58:825-832]. (The principal reason for the sex difference is that men smoke more cigarettes than women do.) The 35% figure comes from a landmark paper by Sir Richard Doll and Richard Peto which estimated and compared the avoidable risks of cancer in the United States [*J. Natl. Cancer Inst.* 66:1192-1308, 1981].

These authors and many other experts do not attribute the same significance to these percentages that Dr. Alabaster does. Drs. Wynder and Gori specify that their figures are *estimates*, not facts, and were derived primarily from comparisons of cancer rates, not from direct evidence about diet. Regarding their 35% figure, Doll and Peto emphasized that it was "highly speculative and chiefly refers to dietary factors which are

not yet reliably identified." Although Dr. Alabaster uses this figure as the basis for claiming that 20 million cases of cancer a year in the United States could be prevented by "relatively simple changes in the national diet," Doll and Peto themselves made no claim that cancer could be substantially reduced by applying *current* scientific knowledge about dietary factors. Similarly, the Committee on Diet, Nutrition, and Cancer of the National Research Council (NRC), in its extremely influential report *Diet, Nutrition and Cancer* [National Academy Press, Washington, DC, 1982], concluded that "the data are not sufficient to quantitate the contribution of diet to the overall cancer risk or to determine the % reduction in risk that might be achieved by dietary modifications."

Despite this disclaimer, the NRC committee saw fit to propose "interim dietary guidelines" for cancer risk reduction. The American Cancer Society (ACS) later proposed similar guidelines, and the National Cancer Institute (NCI) is promoting the same concepts. So while Dr. Alabaster goes farther out on a limb, other distinguished authorities are perched on the same tree.

It is important to recognize, however, that the idea of a national policy of diet modification for cancer prevention has many distinguished opponents. The majority of the scientists contributing to a Council on Agricultural Science and Technology (CAST) critique of the NRC diet and cancer report said that NRC's recommendations for public policy were premature and based on inadequate evidence [*Diet, Nutrition, and Cancer: A Critique*, CAST, Ames, IA 1982]. And review papers in two of the nation's most prestigious medical journals have pointed out the many gaps in the scientific evidence [Willett, W.C. and MacMahon, B: *New Engl. J. Med.* 310:633-638, 697-703, 1984; and Pariza, M.W.: *JAMA* 251:1455-1458, 1984].

The American Council on Science and Health (ACSH) has opposed dietary guidelines for cancer prevention on similar grounds, stating that "specific dietary recommendations should be given only when there is

sufficient basis to expect that they will in fact accomplish what is promised." and that the evidence on diet and cancer doesn't meet this requirement. As noted by Dr. Michael Pariza of the University of Wisconsin in his recent report, *Diet and Cancer* [ACSH, 1985]: "The debate really is as much over *when* to give advice as it is over *what*, if any, advice to give."

A poll conducted at the conclusion of a conference on diet and cancer sponsored in 1983 by the American Cancer Society (ACS) found that two-thirds of the scientists in attendance believed that, based on current knowledge, no dietary advice was warranted or that general advice stressing the desirability of eating in moderation was adequate. (Despite this, ACS issued dietary guidelines shortly thereafter.)

Some people wonder why there is a controversy at all over diet and cancer. Even if the evidence is tentative, they ask, why not advise people to change their diets, as long as the proposed changes are not dangerous? What is there to lose?

Those who hesitate to make policy on the basis of tentative evidence believe that there is much to lose if advice to the public based on "educated guesses" draws attention from advice based on real proof of benefit. Dr. Alabaster's book illustrates this. Tobacco products are responsible for 30% of fatal cancers in the United States, and the appropriate preventive measure—stopping their use—is the paramount public health issue of our time. Although Dr. Alabaster mentions the serious health problems caused by smoking, some passages of the book seem to offer his unproven diet modifications as an alternative to the proven benefits of smoking cessation. For example, he states in the introduction: "How to get rid of an addiction is really beyond the scope of this book. Instead, I will concentrate on the even more important task of explaining the complexities of dietary cancer, and how to reduce your chances of getting cancer by understanding and changing your diet." Just as serious, his brief mention of smoking cessation is pessimistic despite the fact that 33 million Americans have quit for good during the past 15 years. In a boom whose title implies comprehensive coverage of cancer prevention, how could anything be "even more important" than advice on how to eliminate the most significant proven cancer risk factor from your life?

Most scientists who advocate diet modifications generally agree that the following four suggestions are the ones best supported by the scientific evidence:

- Reduce total fat intake from 40% of total calories to 30%. (Dr. Alabaster recommends 20%.)
- Avoid obesity. (The evidence relating cancer to obesity is actually quite limited, but since weight control has other health benefits, it is usually recommended anyway.)
- Increase consumption of fruits and vegetables, particularly those high in vitamin C or carotene and cabbage-family vegetables.
- Avoid excessive use of alcohol.

Dr. Alabaster goes beyond these points and recommends dietary changes that many others consider dubious. For instance, he advocates an increase in fiber. The NRC committee and others have not recommended this, because the evidence linking fiber intake with a reduced risk of colon cancer is equivocal, and if there is such an effect, specific components of fiber, rather than total fiber, are likely to be responsible. Different foods contain different fiber components. Until more is known about the effects of these specific components, it is difficult to know what foods to recommend.

Dr. Alabaster also recommends "optional" dietary supplements of beta-carotene, folic acid, selenium, zinc, and vitamins C and E. In contrast, the NRC committee and others have advised *against* supplementing with high doses of individual nutrients. The NRC committee report stated: "The vast literature examined in this report focuses on the relationship between the consumption of foods and the incidence of cancer in human populations. . . . There is very little information on the effects of various levels of individual nutrients. . . . Therefore, the committee is unable to predict the health effects of high and potentially toxic doses of isolated nutrients consumed in the form of supplements."

Dr. Alabaster advises avoidance of foods containing mutagens and carcinogens, commenting that "asking you to avoid these foods is like asking you to approve a resolution in favor of motherhood." But he gives little specific advice in this area, on the grounds that our knowledge of which foods contain these substances is inadequate. Although virtually everyone would agree that the evidence in this area is muddled, Dr. Alabaster's advice should not be in the same category as motherhood because some of the same foods that contain mutagens and carcinogens also contain cancer-inhibiting substances. It is not at all clear whether these foods should be proscribed or prescribed.

One of the prevailing myths about diet and cancer, repeated in Dr. Alabaster's book, is that Americans would benefit from avoiding smoked, cured and pickled foods. This myth originated with the NRC committee which, unfortunately, did not include an expert in food science. Had one been present during the committee's deliberations, he or she would probably have pointed out that products of this type which have been associated with increased risks of stomach and esophageal

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cancers in Japan, China and Iceland are distinctly different from those sold in the United States under similar descriptions. The committee might then have avoided the regrettable sentence in the news release accompanying the NRC report which advised avoidance of hot dogs, ham, bacon, bologna, sausages and smoked fish. This sentence has been described by a U.S. Department of Agriculture report as "a straightforward case of distortion," because these are not the foods associated with stomach and esophageal cancers in international studies.

Actually, stomach and esophageal cancers are very uncommon in the United States, and the food preservation methods used in places where these cancers are more prevalent are also uncommon here. The American Cancer Society acknowledged this in its diet/cancer report by pointing out that the recommendation to avoid smoked, cured, and pickled foods does not apply to meat or fish products processed by the commercial methods currently in standard use in the United States. Unfortunately, the ACS dietary guidelines that have been reproduced in many places lack this caveat. (One example is a brown-paper grocery sack recently sent to ACSH by a friend from Northern California.)

Given the current state of the controversy over diet and cancer, the question of whether to change one's diet is probably best left to individuals. For those individuals who do elect to modify their diets, a clear set of instructions on how to do it without compromising the nutritional adequacy or palatability of one's meals would be welcome. Dr. Alabaster's book fails miserably in this respect.

In addition to including recommendations that few scientists would consider warranted, the book contains numerous careless errors and inconsistencies. For example:

- Many key points are oversimplified to the point of error, e.g., that sugar causes obesity and that nitrate is a carcinogen.
- The possible nutritional risks of a poorly planned low-fat diet are understated. For example, the author says that iron deficiency is likely in "only" four situations—infancy, childhood and adolescence, women of childbearing age, and pregnancy—but he neglects to note that this accounts for about half of the human species.
- Much outdated information is included. For ex-

ample, cyclamate is labeled a "powerful carcinogen" despite the fact that carcinogenicity was considered dubious at the time of its ban, and current evidence indicates that it is not a carcinogen at all.

The section of Dr. Alabaster's book that gives specific dietary advice might have benefited from a thorough reworking by a skilled dietitian. The author seems overwhelmed by the complexities of translating general dietary advice into specific meal plans. (Indeed, at one point he urges avoidance of dishes that consist of combinations of different foods, on the grounds that they are hard to analyze.) He also seems unaware of the similarity between the food group system he proposes and the standard exchange system long used by diabetics and others. Had he used the standard system instead of creating a new one with different groupings and serving sizes, people attempting to follow his advice could have taken advantage of the many recipes and cookbooks that have been developed using the standard exchanges. Instead, they have only the small collection of unexciting recipes included in this book.

Dr. Alabaster's meal plans are consistently low in calcium (his week's sample menus meet the Recommended Dietary Allowance (RDA) for this nutrient only once in seven days), a totally unnecessary problem since the addition of skim milk to the meal plans could have boosted their calcium content without any increase in fat. Furthermore, the actual calcium content of the meals, as consumed, is likely to be less than the calculated values, since the only milk allowed is that consumed with breakfast cereals (some of which is likely to end up in the bottom of the bowl rather than in the diner). Most of the meal plans also fail to meet the adult woman's RDA for iron.

Equally important, the meal plans are unappetizing, often calling for unrealistically large amounts of single foods or for similar foods in the same meal (e.g., 2½ cups of zucchini and 1½ cups of Brussels sprouts in the same dinner, and raisin bran and raisin bread in the same breakfast), and the author offers little guidance for such realities of life as the lunch eaten away from home.

So even if Dr. Alabaster's general dietary guidelines should someday prove valid, those who try to follow his diet are likely to find it impossible.

Mrs. Meister is a research associate with the American Council on Science and Health.

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STIR-FRYING CAN HELP MEET THE DIETARY GUIDELINES

Darlene Forester, Ph.D., R.D.

The idea of stir-frying evokes images of leaping flames, hot woks and a flurry of motion. This style of cooking comes from China, where it is one of the most common forms of cooking.

Vegetables and meats, cut for uniform cooking, are quickly cooked in a wok or frypan with a small amount of oil. A wok is a pan with a rounded bottom and sloped sides. It is designed to minimize fuel use while providing high cooking temperatures toward the base. Usually one food at a time is cooked in the oil and pushed up the side of the wok to keep it warm. Meats or slower-cooking vegetables are done first. The process usually takes two minutes or less per item.

Woks should sit on a metal ring or specially designed burner for safety. Electric woks are available with temperature controls that can be set from warm to 425°F or more. Some woks are coated with teflon to prevent food from sticking. Temperature control is more difficult with this type. Stir-frying does not require a wok; an electric skillet or heavy pan can work just as well. A wok can also be used for steaming, deep-fat frying, or as a skillet or saucepan.

Stir-frying has many advantages as a cooking method. Since little oil is used, it adds less fat and fewer calories than deep-fat frying. Vegetables retain more vitamins when stir-fried than when boiled or simmered. During boiling, much of the water-soluble vitamin C and B vitamins are leached out into the cooking liquid. Stir-frying can save cooking time. Cleanup time is also short because an entire meal can be prepared in one pan. And because many recipes can be made with little or no meat, stir-frying can help save money on food costs. Some say a disadvantage of stir-frying is the amount of slicing and chopping needed to prepare the foods for cooking, but frequent use of this technique reduces this time.

Careful preparation of stir-fried foods can help diets meet five of the seven guidelines described in *Nutrition and Your Health, Dietary Guidelines for Americans* [USDA/HHS Home and Garden Bulletin No. 232, Washington, D.C., 1980]:

Guideline #1: Eat a variety of foods. Stir-fried dishes typically contain a number of ingredients. A main dish consisting of two or more vegetables and meat or poultry often is eaten along with rice. A cup of milk as a beverage would make this meal meet the basic food groups and provide a variety of nutrients.

Guideline #2: Maintain ideal weight. (Soon to be designated as "maintain reasonable weight" in revised guidelines.) Calories can be reduced by using fewer fatty foods and less fat for preparation, as described below.

Guideline #3: Avoid too much fat, saturated fat and cholesterol. Trimming visible fat is easier when meat is cut into small pieces than it is with other methods. Many tasty stir-fried dishes can be made with small amounts of meats, and many recipes can be modified to reduce fat content. Poultry (without the skin) can be used instead of fattier meats. Use of crunchy vegetables instead of nuts such as cashews can save hundreds of calories per cup. Use of a wok or electric frypan with non-stick coating can eliminate most of the fat needed for cooking. Small amounts of polyunsaturated oils can be used. Safflower, sunflower or corn oil can be used in place of sesame or peanut oil specified in some recipes. Care must be taken to watch the temperature so that the smoking point is not reached and the oil does not become damaged or catch on fire.

Guideline #4: Eat foods with adequate starch and fiber. Fruits and vegetables contribute toward meeting this guideline. Familiar vegetables that can be incorporated into stir-fried dishes include broccoli, cabbage, carrots, celery, cauliflower, green beans, green peppers, mushrooms, onions, snow peas, spinach, turnips and zucchini. Common Oriental vegetables can include: Chinese cabbage (a vegetable that resembles a celery stalk with pale green leaves); bamboo shoots (young tender shoots from the bamboo root which add a crisp texture to foods); bean sprouts (young sprouts of mung or soy beans, which add crisp texture. You can buy them or grow your own); snow or Chinese pea pods (flat peas eaten pod and all. They can be grown in your garden or purchased fresh or frozen); sugar snap peas; and water chestnuts.

Most of these are low in calories and high in vitamins C, A or both. For example, an entire cup of bean sprouts has less than 40 calories and contains about 20 mg vitamin C. Also keep in mind that you can substitute inexpensive common vegetables for more exotic ones named in recipes. Radishes, for instance, can substitute for the crispness of water chestnuts. Use of home-grown vegetables can save money.

Guideline #5: Avoid too much sodium. The high sodium content of many stir-fried foods, typical of dishes of Oriental origin, prevents them from meeting this guideline. The sodium content is largely due to monosodium glutamate and soy sauce. Just one tablespoon of soy sauce adds over 1,000 mg sodium to a dish and many foods contain several times this. The new low-sodium soy sauce can reduce this considerably, as can the use of oyster sauce. Also, water or stock can be used to meet the need for liquid supplied by some soy sauce if additional soy flavor is not needed. Mono-

sodium glutamate (MSG) adds about 500 mg sodium per teaspoon. Since it does not actually supply flavor, it can be omitted with considerable sodium reduction.

Since one teaspoon of table salt contains roughly 2,000 mg sodium, using salt in addition to the above seasonings can add up to a total of several thousand milligrams per dish. But salt can be omitted from many stir-fried items. Use of garlic or onion powder rather than the "salt" form of these condiments can save 1,500 or more mg sodium per teaspoon. Try some of the following to add flavor without sodium:

- Crushed garlic cloves
- Red wine vinegar
- Lemon juice
- Scallion or onion (can be removed before adding other foods if only the flavor is needed).
- Dry white wine or sherry (cooking wine has salt added). Water may be substituted spoon for spoon.
- Ginger: If ginger is necessary, substitute ground ginger for fresh ginger (ginger root) if necessary. Use ¼ to ½ teaspoon instead of two to three slices of fresh ginger. To keep fresh root, tightly wrap it and freeze it. Cut off as needed; peel and grate while frozen. Peeled root can also be stored in dry sherry in the refrigerator for a year or two.
- Sesame seeds: toast seeds before using for more flavor.

MORE TIPS FOR STIR-FRYING

- Keep in mind that the color of vegetables intensifies during the first 2-3 minutes they are stir-fried.
- Slice vegetables diagonally for better appearance.
- Don't cut or chop vegetables too soon before cooking. Cut vegetables have more surface area exposed to oxygen, which destroys some of the vitamins.
- Stir-fry each 1 to 1½ cups vegetables in one tablespoon oil for one to three minutes until tender but crisp. Canned vegetables, such as bean sprouts, bamboo shoots or water chestnuts can be used to add crispness to mixtures. They can be rinsed first to reduce sodium content.
- Partially freeze meat to make slicing easier before cooking.
- Canned tuna can be substituted for crab and shrimp.
- Leftover bits of meat, poultry or fish can be combined for use as the protein source.

Dr. Forester is State Extension Specialist and Associate Extension Professor at the University of Kentucky College of Agriculture. Additional information on stir-fry cooking can be obtained by sending a stamped, self-addressed 4"x9½" envelope to the author at 120 Erikson Hall, University of Kentucky, Lexington, KY 40506.

STIR-FRIED MIXED VEGETABLES

- 3 tablespoons vegetable oil
- 1 cup thinly sliced carrots
- 1 cup thinly sliced celery
- 1 cup fresh snow peas, ends trimmed
- 1 cup fresh mushrooms, washed, sliced lengthwise through stems
- 2 tablespoons lemon juice
- ½ teaspoon salt
- dash pepper
- dash garlic powder
- 1 teaspoon soy sauce

Clean and slice all vegetables. In a wok or a large heavy skillet, heat oil. Add carrots and celery; stir to coat well. Stir-fry 3 to 4 minutes. Stir in snow peas and mushrooms; stir-fry 2 minutes. Cover and cook 2 minutes longer or until vegetables are cooked as you like them. Add seasonings; stir to mix well. To serve, sprinkle with chopped parsley. Makes 4 to 6 servings (92 Calories, 8 grams of fat, 320 milligrams sodium/serving). To reduce sodium content and vary the flavor, celery can be replaced with another vegetable and 1 teaspoon of sugar can be substituted for the ½ teaspoon of salt.

BRIEFS

Dietitian licensure. According to the American Dietetic Association's *Legislative Newsletter*, the number of states regulating nutrition counselors rose to 11 with passage of licensure bills in Iowa and Maryland during the month of May.

Information center for rare diseases. The FDA has established the National Information Center for Orphan Drugs and Rare Diseases to provide information to patients and their families, physicians, clinical researchers, and other health professionals. Rare diseases are considered those that have a prevalence of 200,000 or fewer patients in the United States. Voluntary organizations dealing with these diseases will be listed in a directory compiled by the Center that will include information about the diseases, their causes and symptoms, ongoing research, current treatments and treatment centers. Inquirers may be directed to the Center at P.O. Box 1133, Washington, DC 20013 or by calling 800-336-4797 (except in Virginia, where the number is 703-522-2590).

Position paper on chiropractic. A brilliant analysis of the nature and shortcomings of chiropractic has been issued by the National Council Against Health Fraud, Inc. Stating that "chiropractic presents a chaotic picture," and is "a major consumer health problem," the report spells out how to distinguish the small number of "scientific chiropractors" from the rest who engage in unethical or unscientific practices. Signs of the latter include opposition to proven public health measures (fluoridation, pasteurization) and use of such unproven methods as cytotoxic testing, hair analysis, iridology, "glandular therapy," chelation therapy, and computerized "nutrition deficiency" tests. The report concludes with detailed recommendations for consumers, insurance carriers, legislators, basic scientists, educators, law enforcement agencies, and health practitioners. A free copy can be obtained by sending a stamped, self-addressed 4" x 9 1/2" envelope to Chiropractic Position Paper, P.O. Box 1276, Loma Linda, CA 92354.

Mail-order merchant facing criminal charges. An article in the *Miami Herald* states that Mitch Friedlander has been charged with 41 racketeering and fraud-related charges related to the operation of his Robertson-Taylor Company. On July 9th, officers from the Economic Crimes Unit of the Fort Lauderdale police shut down company operations by seizing its computer mailing lists and stocks of baldness remedies, weight-loss compounds, vitamin formulas, and other "miracle cure" products. The company, whose mail-order business grossed an estimated \$4 million during 1984, has also been prosecuted by the U.S. Postal Service and the FDA [see NF: 1:19, 2:28].

New suit seeks raw milk ban. Public Citizen's Health Research Group and the American Public Health Association have filed suit in federal court to overturn FDA Commissioner Frank Young's refusal to ban interstate sales of raw milk [see NF 2:28].

Government action against cytotoxic testing labs. In February, Bio Health Centers (BHC), a branch of Tan-nare International Inc., of Costa Mesa, California, was ordered to stop marketing its cytotoxic testing services in New York State. BHC operated through blood collection clinics set up in local hotels and also by mail [see NF 1:17-19]. After a woman's blood sample was mailed by an investigator for the New York attorney general, BHC incorrectly reported that the woman was sensitive to many foods. When an FDA investigator submitted a sample of cow's blood as his own, BHC claimed that allergy was present to 22 substances, including cow's milk, cottage cheese and yogurt. Authorities in California have also taken action against BHC.

Laetrile bill. On March 7th, Rep. William Goodling (R-PA) introduced H.R. 1471, to amend the Federal Food, Drug, and Cosmetic Act so that the effectiveness requirement of section 505 "shall not be applicable to laetrile when used under the direction of a physician for the treatment of pain." Although a double-blind test of laetrile conducted by the Mayo Clinic showed that laetrile is not effective against pain [see NF 1:15], the bill would enable laetrile to be sold when a doctor claims to be treating someone for that purpose. Presumably, laetrile promoters would have no difficulty in securing a "prescription" from a laetrile doctor for any patient who wants one. Such a legal loophole appears similar to the affidavit system for importing personal supplies of laetrile maintained by an Oklahoma federal judge despite higher court orders to dismantle it [NF 1:15]. According to a legislative aide, Goodling has made no effort as yet to secure co-sponsors.

Health food promoter dies. Bob Hoffman, founder of York Barbell Co., died on July 18th at the age of 86. A prominent figure in the sport of weightlifting (he was U.S. Olympic coach for more than 30 years), he was a major proponent of protein supplements. He also served on the board of governors of the National Health Federation, a health food industry group that promotes unproven methods. In 1960, 1961, 1968, 1972 and 1974, federal agencies forced his company to discontinue various false claims for its wheat germ oil, protein supplements, and other products.

Fluid intake during hot weather. Fitness authorities Mona Shangold, M.D., and Gabe Mirkin, M.D., advise those who engage in strenuous exercise during hot weather not to rely upon thirst to signal when their body needs water. In *The Complete Sports Medicine Book for Women* [Simon & Schuster, 1985], they explain: "You won't become thirsty until you have already lost 2 to 4 pounds of water and, by then, it's too late to make up the deficit. Special cells in your brain called osmoreceptors, which tell you when you are thirsty, are called into action only when the concentration of salt in your blood stream rises to high levels. Since sweat contains some salt, the concentration of salt in your blood stream rises more slowly than it would if sweat contained only water. Thus, sweating leads to considerable fluid loss, even though it promotes the thirst signal slowly. By the time you have lost 3 percent of your body weight as fluid, your temperature will have risen and your performance will have deteriorated markedly." The best fluid to drink is plain cold water because it is absorbed most quickly by the body. A good schedule to follow is a cup a few minutes before starting and another every 15 minutes during exercise.

Antiquackery group expands. Membership in the National Council Against Health Fraud has grown to 1,369, up 33% from one year ago. About 20% of members are dietitians. Chapters now exist in Arizona, Michigan, Minnesota, Oregon, Washington, and Wisconsin, and an affiliate group is operating in Kansas. Information on the group can be obtained by writing to NCAHF, Inc., P.O. Box 1276, Loma Linda, CA 92354.

"Quick-chilled" poultry. Most poultry plants now pack poultry in ice and hold it at 28°F or chill the birds with nitrogen. The result of these processes is a slight crust of ice crystals. Although the product's surface feels frozen, the inside is not. Thus, according to U.S. Department of Agriculture home economists, the birds can be cooked with the same temperature and cooking times as unfrozen poultry.

USDA report available. "Meat and Poultry Inspection, 1984: Report of the Secretary of Agriculture to the U.S. Congress," which summarizes the activities of the USDA Food Safety and Inspection Service, can be ordered from USDA-FSIS Public Awareness, Room 1163 South Building, Washington, DC 20250.

New aspartame report. After reviewing evidence available as of June 1985, the AMA Council on Scientific Affairs has concluded that "consumption of aspartame is safe except by individuals with homozygous phenylketonuria or other individuals needing to control their phenylalanine intake" [JAMA 254:400-402, 1985]. Reprints of the report are available from the Council on Scientific Affairs, Division of Drugs and Technology, American Medical Association, 535 N. Dearborn St., Chicago, IL 60610.

ACSH DEFENDS ANTIBIOTICS IN ANIMALS

A new report by the American Council on Science and Health concludes that the addition of subtherapeutic levels of penicillin and tetracyclines to animal feed does not present an immediate human health hazard and should therefore be permitted. This practice increases the amount of meat that can be produced from a given amount of feed and helps to prevent bacterial disease in animals.

According to ACSH, calls for a ban increased after publication last year of a study by the U.S. Centers for Disease Control (CDC) which concluded that 18 cases of human salmonellosis caused by antibiotic-resistant bacteria were probably acquired by eating hamburger originating from cattle fed subtherapeutic doses of chlortetracycline. The Natural Resources Defense Council has petitioned the Department of Health and Human Services, asking that nontherapeutic usage of penicillin and tetracyclines be banned as an "imminent hazard" to human health. A public hearing was held on January 25, 1985, but no decision has been rendered on the petition so far.

"The CDC study is not the 'smoking gun' some people claim it is," said Richard A. Greenberg, Ph.D., ACSH's associate director and author of the ACSH report. "There is considerable doubt that subtherapeutic feeding of antibiotics to beef cattle was at fault in this disease outbreak. A dairy herd adjacent to the beef cattle location was a more likely source of the antibiotic-resistant microorganism. Because of the missing links in the CDC study, and in light of other scientific evidence in this area, we do not believe that the use of these

antibiotics needs to be discontinued."

The Food Marketing Institute's 1985 survey of consumer attitudes found that 43% of consumers were "very concerned" and another 30% "concerned" about the possibility that fresh meat products might contain residues of antibiotics and other drugs. However, this concern is unwarranted, says Dr. Greenberg: "The feeding of antibiotics to farm animals is stopped several days before slaughter, so that the drugs can clear out of the animals' bodies. The U.S. Department of Agriculture prohibits the sale of meat containing antibiotics in excess of legal tolerance levels. Antibiotic residues in meat sold in the United States are negligible. The controversy in the scientific community is over antibiotic-resistant bacteria, not antibiotic residues in meat."

A free copy of *Antibiotics in Animal Feed: A Threat to Human Health?* can be obtained by sending a self-addressed 4"x9 1/2" envelope with 39¢ postage affixed to Antibiotic Report, ACSH, 47 Maple St., Summit, NJ 07901.

COMING SOON
Herbalife Criticized at
Senate Hearings
Nutrition Quackery in Dentistry

RAW MILK INVOLVED IN LEGAL BATTLES

San Francisco pediatrician John Bolton and the American Academy of Pediatrics have been sued by Alta-Dena Certified Dairy for comments made about the company's certified raw milk products. The statements were made in February at a hearing of the House Subcommittee on Health and Environment Subcommittee, chaired by Rep. Henry Waxman (D-CA) and held in Los Angeles. Dr. Bolton, who testified on behalf of the Academy, reportedly called raw milk a "toxic waste problem" and said that there is no way to prevent intermittent contamination by *Salmonella dublin* and other potentially lethal bacteria. [For related information, see NF 2:1-4 and 2:28]. The suit asks for \$10 million in actual damages and \$100 million in punitive damages. A similar suit was filed last year for comments made during 1983 and 1984.

Interview by the Los Angeles Times, Bolton's attorney David Raub said: "It looks to me like the dairy is trying to keep Dr. Bolton from being so vocal a critic." Raub also said that Bolton's legal defenses are sufficiently adequate that the suits are unlikely to ever go to trial. The article noted that although Alta-Dena raw milk has been recalled from store shelves more than 20 times during the past 20 years because routine government tests discovered the presence of salmonella bacteria, the company maintains that its products are free from contaminants and that no one has ever become ill from consuming Alta-Dena certified raw milk. In subsequent letters to the editor, Alta-Dena's manager said that suing Bolton was "not a move to intimidate but rather to serve notice that the dairy suffers financially from irresponsible statements" but Rep. Waxman said "it may well be a violation of a federal law designed to protect witnesses appearing before congressional committees."

On June 26th, the Los Angeles district attorney's office announced that it had seized about 20 boxes of records from Jalisco Mexican Products, Inc., a manufacturer whose Mexican-style cheese was implicated in the death of more than 40 California residents from *Listeria monocytogenes* infection. According to an article in *The Los Angeles Times*, it appears that Jalisco received considerably more raw milk at its processing plant than it could possibly pasteurize. Although company officials deny that unpasteurized milk was used to make cheese, state health officers suspect that it was. After tests by the U.S. Centers for Disease Control showed that Jalisco products were contaminated with *Listeria* bacteria, production was stopped and a recall was ordered.

Since August 1984 the San Francisco Health Code has required all stores that sell raw milk to post a prominent warning: "Raw milk products are not pasteurized and may contain organisms that cause human disease. They therefore should not be consumed by the very

young; the very old; persons with illnesses which alter, or who take drugs which affect, the immune systems; and persons with severe chronic medical problems." Although California law requires that dairy herds be checked for evidence of infection with several disease germs, *Listeria monocytogenes* has not been one of them. According to an article in the *San Francisco Examiner*, much of the raw milk used by Jalisco was delivered by Alta-Dena Dairy. However, it is not yet clear whether the milk came from Alta-Dena's herds or from its contract farms.

QUESTION BOX

Q. What was the outcome of the legal case of the 2½-month-old infant who died as a result of the advice of Adelle Davis?

A. Your question refers to Ryan Pitzer, who died in 1978 after his mother gave him potassium chloride drops for colic as advised in the book *Let's Have Healthy Children*. The case was settled out of court. In 1981, the publishers paid \$25,000 and the estate of Ms. Davis paid \$75,000, and in 1982, the potassium supplement manufacturer agreed to pay \$60,000 over a 5-year period. The book containing the fatal advice was withdrawn from the marketplace (as demanded by the suit) but was reissued after revision by Marshall Mandell, M.D., a physician allied with the health food industry. Ryan's parents were represented by attorney Peter Portley of Pompano Beach, Florida.

Q. Is honey pure fructose?

A. No. Honey contains almost equal amounts of glucose and fructose plus smaller amounts of several other sugars. Honey is formed, with the aid of an enzyme in the bee's stomach, from the nectar of flowers. Depending on the source of the nectar, honey can vary considerably in composition and flavor. Its constituents (by weight) include fructose (27-44%), glucose (22-41%), water (13-23%), maltose (3-16%), sucrose (.25-7.5%), other sugars (.13-13%), and undetermined substances (0-13%). Honey is used in food products where its intense and distinctive taste is desired. Like yogurt, wheat germ, sea salt and similar products, honey has long been considered a "miracle" food by pseudoscientific practitioners. But no special health-giving characteristic has ever been scientifically demonstrated.

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HERBALIFE CRITICIZED AT SENATE HEARINGS

Odom Fanning

Opening two days of hearings, Senator William V. Roth, Jr. (R-DE), chairman of the Senate Permanent Subcommittee on Investigations, made it clear that their purpose was not to "get" Herbalife or any other product, but resulted from five months of investigation into weight reduction products and plans of all types. The Subcommittee is authorized to investigate the efficiency and economy of all branches of the government and also has jurisdiction over "all aspects of crime and lawlessness within the U.S. which have impact upon or affect the national health, welfare, or safety."

Roth acknowledged that following announcement of the hearings (held in Washington, D.C., May 14th and 15th), he had received a "very large number of phone calls and letters from individuals who are very satisfied with the Herbalife products, and have lost large amounts of weight." Many of these correspondents, and an estimated 3,000 Herbalife distributors who marched on the second day, were obviously on the defensive. So was the Food and Drug Administration, for, as the Senator put it, the purpose of the hearings was "to find out if the public is being adequately protected when it buys and consumes diet products."

In his opening remarks, Roth made a distinction between "miracle pills and creams," tinted sunglasses, plastic ear forms and other "patently fraudulent products" and the very low calorie (VLC) products that can actually produce weight loss but may not be safe. His major concern with the VLC products, he specified, "is with what the Food and Drug Administration is doing and what it is not doing, particularly when serious questions have been raised both within the FDA and outside this agency about the safety of such products. . . . We are dealing with a multi-billion dollar industry which produces items ingested into the human body. Yet the FDA has been reticent to involve itself in low calorie diets. I want to know why, because I think the public deserves to know conclusively about the safety of individual products now in the marketplace."

On the first day Roth's subcommittee heard testimony from scientists and VLC product users, all of whom submitted written statements as well. Most of the scientists favored more regulation of such dietary products; the users were pro and con.

One scientific witness was Judith S. Stern, Sc.D., professor of nutrition and director of the Food Intake Laboratory at the University of California, Davis. She conceded that "the inadequacy of traditional medicine to provide a permanent cure for obesity has given rise to an entire industry of entrepreneurs who claim to be able to relieve the frustrations of the overweight. The ironic tragedy is that most diets work—at least initially—when they are followed. However, fad diets are usually quite restrictive in their food choices, may have unpleasant side effects, and most people cannot follow them for any length of time. In addition, when daily calories are restricted below 1,200, it becomes difficult to satisfy all other nutrient needs."

Dr. Stern also made the distinction between "miracle cures" and VLC products. Products in the former category include the hormone cholecystokinin (CCK), claimed to decrease hunger [see NF 2:38], and various amino acid pills, said to release growth hormone [NF 1:24]. Both have been promoted with false claims based on legitimate scientific discoveries that were overgeneralized and misrepresented, she noted.

Debunking claims that grapefruit or grapefruit extract can act in a catalytic manner enhancing breakdown of fat, Dr. Stern described her testimony last year which helped the U.S. Postal Service stop sales of Super Grapefruit Pills by a California company [NF 2:38]. Noting that these pills contained glucomannan, she reported that in 1980 she had conducted a double-blind study in which the test group received one gram of glucomannan while the control group was given a placebo. Both groups were placed on a behavior modification program. Both groups lost weight, she noted, but there were no statistically significant differences in

hunger ratings or weight loss between them.

Dr. Stern also zeroed in on kelp/lecithin/cider vinegar/vitamin B₆ combinations found in dietary products since 1974. Iodine-rich kelp is potentially harmful to a small number of individuals in whom high amounts of ingested iodine can cause thyroid trouble. The other three ingredients are worthless, she noted.

Another expert witness was Varro E. Tyler, Ph.D., professor of pharmacognosy (the science of medicines from natural sources) and dean of Purdue University's School of Pharmacy and Pharmacal Sciences. Here is my summary of Dr. Tyler's detailed analysis of various Herbalife products contained in the lengthy packet of written material released by Roth's subcommittee to the press:

- *Slim and Trim Formula #1* (46¢/day), described in the sales literature "as a balanced protein powder made from natural vegetable soy, casein and whey protein." Tyler said the product is falsely represented in company literature because there is nothing about a protein powder, per se, that will curb the appetite any more than an equivalent amount of protein derived from eating lean meat, nuts, or the like. Further, no protein powder will "cleanse the system" or facilitate "burning excess calories." It will supply needed daily nutrients, but no more effectively than a low-calorie diet, carefully balanced for carbohydrates, minerals, and vitamins—as well as protein.

- *Slim and Trim Formula #2* (21¢/day), described by the Herbalife organization as a special blend of 14 herbs plus kelp, lecithin, vitamin B₆, and cider vinegar designed to cleanse the digestive system and naturally help curb the appetite. Tyler said that, of its many herbal ingredients, none is actually present in sufficient quantity to produce significant physiological effects by itself. But he noted that four ingredients—senna, cascara sagrada, dandelion root, and kelp—might work together to exert a laxative effect in sensitive individuals.

- *Slim and Trim Multivitamin and Multiminerals Formula #3* (23¢/day) is a fairly standard vitamin/mineral preparation with some herbal products added in such tiny amounts that they exert no significant effect. Unless vitamin deficiency was present, Tyler noted, the product would be a complete waste of money.

- *Slim and Trim Linseed Oil Formula #4* (10¢/day) contains small amounts of linseed oil but has no advantage over less expensive vegetable oils ordinarily used in the kitchen of the average home. (Moreover, as noted by the next witness, the amount found in the formula will be obtained in food consumed in just one balanced meal per day.)

- *Cell-U-Loss* (43¢/day) is described in Herbalife literature as a product designed to attack cellulite, promote circulation, and eliminate excess fluids, is recommended for use with the Slim and Trim formulas. Tyler noted that its tiny amounts of herbs would at most cause

a slight diuresis (output of body water), but would have no effect whatsoever on appetite or body fat.

- *Herbal-aloe* is said to aid digestion and cleanse the system. Although uncertain of the type of aloe contained in this product—which may be a laxative—Tyler expressed deep concern over two of its other herbal ingredients. Comfrey, he said, is a known carcinogen, shown to produce malignant tumors in the livers of rats when included in their diet. And the active constituent of chapparal, nordihydroguaiaretic acid (NDGA), was removed from the FDA's GRAS (Generally Recognized As Safe) list many years ago after it was shown to cause cysts and kidney damage in rats.

- *N.R.G. (Nature's Raw Guarana)* (80¢/day), claimed to increase energy, aid in mental alertness and produce a nutritional lift, is sold in tablets that contain small amounts of granular guarana, the seed of a South American plant known to contain about 5% caffeine. The amount of caffeine in the recommended dose of N.R.G. is about the same as that in a cup of strong coffee—but the presence of caffeine is not revealed in product labeling or literature. Thus, individuals sensitive to caffeine might be unwittingly harmed.

- *Schizandra Plus* tablets are said to help combat stress and damage leading to premature aging. Although he suspected that the dosage of its ingredients was too low to exert pharmacological effects, Tyler indicated that tests are needed to determine whether chemicals extracted from schizandra can protect or harm the liver [see NF 2:29].

- *Tang Kuei* (50¢/day), said to help establish menstrual regularity and provide "herbal nutrition" for the whole body, contains dong quai (also known as dang gui and pinyan) and chamomile. These drugs—used in traditional Chinese medicine—have not been proved by Western standards. Tyler noted that even if they are effective, the amounts contained in Tang Kuei are far below those used in China. Moreover, under federal law, Schizandra Plus and Tang Kuei are unapproved new drugs that are not legal to sell in the United States.

Overall, Tyler objected that: 1) some Herbalife products may well be toxic, at least to some consumers; 2) Herbalife literature and word-of-mouth recommendations build up false hopes in consumers, most of whom are not able to benefit from the placebo effect; 3) it is particularly deceptive because they lead the public

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to believe that Herbalife products "contain a lot of wonderful herbs with marvelous health-giving properties when the amounts present in the products are too small to have any significant physiological effects in normal persons; and 4) consumers are thus paying good money for products which have no proven value.

Many of the same points were reiterated in an analysis of the various Herbalife formulas by F. Xavier Pi-Sunyer, M.D., associate professor of Medicine, Columbia University College of Physicians and Surgeons, and a division chief at St. Luke's Roosevelt Hospital Center, New York City.

"With very rapid weight loss, and particularly with diets low in carbohydrate, there is an early diuresis, that is, loss of water via the urine. This accounts for much of the weight loss of crash diets and much of this water is reaccumulated when the diet is stopped," said Dr. Pi-Sunyer. "With this water loss, great amounts of sodium, potassium, and chloride are lost, as well as lesser but substantial amounts of calcium, magnesium, and other minerals. These must be replaced. If they are not, the electrical integrity of biological membranes may be lost, and one outcome of this may be cardiac arrhythmias."

Because dieters wish "to get on with it," there may be a tendency to take only the protein preparation, without supplementing it, as sometimes recommended, by a meal to bring the daily intake to at least 800 to 1,000 calories (of which 300 to 400 may be provided by the dietary product). Consumers also may ignore the limited period, say four weeks, recommended by some diet purveyors, and incur added risk by consuming the preparation for a longer time, said Dr. Pi-Sunyer.

He also reported that a colleague, Theodore B. Van Itallie, M.D., had reexamined data of the victims of the liquid protein diets of 1977-1978 and found that "the less fat you are the more dangerous these diets are for you, the more likely you are to lose life-requiring protein, and the more at risk of dying you are. Since these preparations are bought without restriction, many people take them who are not very fat, and these people seem to be particularly at risk."

Two of the four laypersons who testified were constituents of Senator Roth's—one for Herbalife, the other against. Patricia Stombaugh, of Smyrna, Delaware, began taking Herbalife in August 1984. "After taking it

for two months, losing five pounds and feeling much better," she was asked by friends "for more information about Herbalife." She soon became a distributor. She and her representatives since have sold it to over 300 people. "Herbalife has worked for me and my customers," she told Roth and the subcommittee. "I believe the people who said they felt better using the Herbalife products are stating the facts: their health problems improved through weight loss and sound nutrition. They are not saying that Herbalife is like a medicine that cures a disease. No one I know has ever claimed this."

Another user, Greg Martin, of Dover, Delaware, lost about 13 pounds in three months and "felt better than I had in years," after starting on Herbalife products in September 1984. He and his wife began selling the products in October, eventually building a customer list of 100 with ten distributors. But most of his customers suffered from constipation when using Slim and Trim Formulas, and 10 to 15 percent had other problems, he reported. One man who had had two previous heart bypass operations was taking Herbalifeline because Martin "understood from the literature that it was good for heart problems. This man became extremely constipated."

Because he was unable to get answers to his questions from Herbalife headquarters, Martin stopped selling its products to retail customers at the end of February. "I do not want to be associated with a company who claims its products are safe for everyone to use and then will not deal with [health] problems," he testified. He expressed the conviction "that diet products and food supplements can do a lot of good. I would not want to see them prohibited." He suggested, however, that standards be established and that the FDA "enforce these standards so that the public can be confident that these products are safe."

The final two lay witnesses testified to personal tragedies. Bernard Lehman, of Anaheim, California, formerly from a town near Nashville, Tennessee, said that he is not able to work because he has Hodgkin's lymphoma, a form of cancer. A few months ago, while "basically bedridden," he claimed that a distributor in Tennessee told him and his wife that she could lose weight taking Herbalife products, that both could earn needed income, and that "the Herbalife products would help to cure my cancer."

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Lehman named the distributor and charged, "He told us this orally and showed us some brochures which said this" in writing. "However, he gave us different brochures without this information and said that he only had one copy of the special brochure, and he had to keep it for his use." Lehman summarized by saying that the distributor "basically said that the Herbalife products would act as a cure-all."

Although he and his wife had "bad reactions" to the Herbalife products, they continued taking them "because we believed that we could make lots of money and we thought our own bad reactions to taking the products were unusual." They spent about \$1,800 for inventory and publications and sold about \$100 worth of Herbalife products before asking to get out and get their money back. They eventually received \$1,000 from the distributor and still have \$700 worth of product they "would just like to get rid of . . . and forget about."

Cynthia Guillaume Lee, of New Orleans, told the pitiful story of her late husband, Bivian Lewis Lee, Jr., who had retired as a National Football League player in 1976. He became a Herbalife distributor in October 1984 because "the extra money sounded real good," said Mrs. Lee. Although he was not overweight and "was very much against taking any kind of diet product," he began taking a Herbalife product because "he said that if he was going to sell it, he would at least try it out."

Two weeks later, Bivian, age 35, was dead. His widow testified: "I know that I'm not a doctor. I know that I'm not qualified to give medical opinions. But I do know that my husband was a perfectly healthy man. I saw him deteriorate from the perfectly healthy man to his death. And it all began when he started taking Herbalife. I want to tell what happened to me—it's not easy for me to do this—because I want this subcommittee, or the Federal Food and Drug Administration or somebody to investigate why my husband was alive and well until he started on the Herbalife products and now he's dead. I want to encourage the subcommittee to look into this so that other young mothers won't find themselves in my position."

Mrs. Lee submitted an affidavit by Dr. Van Itallie, who had reviewed the autopsy protocol prepared by the Orleans Parish Coroner's Office and other records relating to Bivian Lee's death. The affidavit cites an article Van Itallie co-authored, entitled "Cardiac dysfunction in obese dieters: a potentially lethal complication of rapid, massive weight loss" [*American Journal of Clinical Nutrition* 39:695-702, 1984]. The article discusses the cases of 17 obese but otherwise healthy persons on VLCs who died of cardiac arrhythmia. "Basically," the affidavit says, "severe restriction of caloric intake causes the body to utilize and deplete its protein. The heart is a muscle, made of protein, and it is not spared . . . depletion of protein from the heart may be followed by car-

diac arrhythmia and death. I refer to this as the 'liquid protein syndrome', but it may develop from any drastic reduction in caloric intake. My thesis further holds that persons with lesser stores of body fat are more likely to experience the cardiac dysfunction. Fatter dieters seem to survive longer because they are better able to conserve their body protein."

Van Itallie found this thesis consistent with Bivian Lee's case, particularly because he was "persuaded by Lee's Body Mass Index, indicating that he had lesser stores of body fat."

The second day of the hearings, which featured the FDA Commissioner and the executive heads of Cambridge and Herbalife, will be discussed in next month's *Nutrition Forum*.

Mr. Fanning, formerly science writer for *The Atlanta Journal* and director of information for the Centers for Disease Control, is editor and publisher of *Consumer Newsweekly*.

QUESTION BOX

Q. Is it hazardous to swim after eating?

A. There is no need for healthy persons to restrict mild or moderate physical activity after eating. After you eat, your stomach muscles require increased blood supply while churning the food. During exercise, blood supply to the voluntary muscles must be increased. According to sports-medicine expert Gabe Mirkin, M.D., if you are reasonably fit and exercising moderately, your heart can handle both jobs at the same time. However, if you are exercising very vigorously or are in poor physical condition, the simultaneous demands will be too much, and the supply of blood carrying oxygen to the stomach may be inadequate, resulting in stomach cramps.

Q. Does the term "holistic medicine" have a specific meaning?

A. No. Orthodox practitioners use the term to mean treatment of the "whole patient," with attention to emotional factors as well as physical ones. But most people who refer to themselves as "holistic" utilize unscientific methods of diagnosis and treatment. Because the holistic label is a potential source of public confusion, knowledgeable observers have suggested that scientific practitioners abandon it.

COMING SOON

HERBALIFE, Part II
DENTIST and NUTRITION QUACKERY
BUTCHER'S BROOM

FDA MAY PERMIT HEALTH CLAIMS ON FOOD LABELS

The Food and Drug Administration has indicated that it will revise regulations concerning health claims made for foods. *The New York Times* has reported that details of the plan will be announced soon and that a committee of government scientists will then review available evidence, invite public comment and suggest health labels suitable for use on food products. According to Joseph P. Hile, Associate Commissioner of Food and Drugs (the FDA's top enforcement official), the agency's problem is "how to permit appropriate health claims without opening the door to outright fraudulent ones."

The Federal Food, Drug, and Cosmetic Act (FDCA) defines drugs as "articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals." This law also makes it illegal for sellers to make new drug claims without FDA approval (which requires proof of safety and effectiveness prior to marketing). Thus foods for which disease-related claims are made can now be regulated by the FDA as drugs.

Paul Sage, the FDA consumer safety officer who last year petitioned the agency to set up a more vigorous enforcement program against misbranded food supplements (see NF 1:1-2), believes that the "FDA cannot lawfully adopt a policy that sets aside a statute's definition and contravenes its intent—only Congress can change a law in this manner." Instead, he feels that a streamlined approval process can be designed in which manufacturers file "new drug applications" based on scientific data supporting their claims. But others think guidelines can be used.

Controversy in this area began last fall when the FDA objected to an advertising campaign begun for Kellogg's All-Bran cereal. One ad had listed four "preventative tips from the National Cancer Institute": 1) eat high fiber foods; 2) eat foods low in fat; 3) eat fresh fruits and vegetables; and 4) eat a well-balanced diet and avoid being over or under weight. Another had stated that no cereal has more fiber than All-Bran. The ads, which appeared on radio and television as well as on the backs of cereal boxes, had been designed with help from the National Cancer Institute (NCI) itself.

Federal Trade Commission officials expressed the belief that the ads are within their primary jurisdiction and have endorsed them as truthful food claims that can benefit the public. But FDA officials said that linking a specific food product to NCI's advice put the manufacturer in the position of making a "special health claim" that may make All-Bran a drug subject to premarket proof of effectiveness. Meanwhile, NCI was contacted

by other manufacturers who believe that their products fit within NCI's guidelines.

On May 22nd, Kellogg Company filed a 550-page petition asking the FDA to allow such claims in food advertising or labeling without making the foods "new drugs" that need FDA approval. Kellogg wants the FDA to change its policy so that foods shall not be considered misbranded or drugs because of labeling, advertising or other statements that refer to relationships between diet and health, provided that such statements: 1) are substantiated by studies generally recognized as valid by experts; 2) are made only in the context of a diet and refer only to a food that is an appropriate component of that diet; 3) specify the dietary property(ies) or ingredient(s) which make that food an appropriate component of the diet, and the amount in a serving of the food is disclosed on the label; and 4) are not false or misleading to consumers.

The National Food Processors Association—representing such companies as Del Monte, Campbell, Kraft, Beatrice, and Hunt Wesson—has also petitioned the FDA to relax its rules so that health claims supported by "unbiased authorities" can be made for foods. Other groups supporting relaxation of the rules are the Council for Responsible Nutrition (an association of supplement manufacturers) and the Center for Science in the Public Interest, which wants a moratorium on health claims until formal guidelines are adopted.

Seizing upon the controversy, the National Health Federation is promoting "Foods Are Not Drugs" bills to amend the FDA Act so that "foods for special dietary use" would not be classified as drugs. H.R. 1819, introduced by Representative Howard Nielson (R-UT), and H.R. 2583, introduced by Representative William Dannemeyer (R-CA), would exempt such products as encapsulated herbs, foods, and vitamins. Passage of either bill would virtually cripple the FDA's ability to protect the public against "food supplement" concoctions labeled as "dietary supplements" but promoted as effective against disease. Theoretically, the FDA could still act against false claims made for these products. But instead of merely showing that a company has not secured necessary FDA approval, the agency would face the impossible task of disproving false claims for hundreds or even thousands of products on a case-by-case basis.

Comments on the Kellogg petition (Docket #85-N-0061) can be sent to Dockets Management Branch, HFA-305, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857.

NUTRITION FRAUDS ATTACKED BY NEW YORK ATTORNEY GENERAL

A "holistic nutritional consultant," three testing facilities he utilized, and the school from which he obtained his "Ph.D." are the targets of five suits filed July 22nd by New York State Attorney General Robert Abrams. Assistant Attorney General Leslie E. Rossen of the Department of Law's Bureau of Consumer Frauds and Protection is managing the cases. The court papers, which encompass more than 500 pages, state:

- Gary Pace, 50, of Garden City, N.Y., "has engaged in a scheme to defraud consumers by repeated fraudulent and illegal acts and practices including the illegal practice of medicine and fraudulent misrepresentations. By virtue of this scheme, Pace has induced hundreds of consumers to each pay hundreds of dollars to him for improper physical examinations, worthless laboratory tests, bogus nutritional advice, and unnecessary vitamin, mineral, and herbal supplements."

- Herbal Tracers, LTD., of Hewlett, N.Y., and its president, David Fishman, have been: 1) operating a laboratory without possession of a valid permit; 2) accepting specimens from and rendering reports to persons not legally authorized to use the findings of a laboratory; 3) illegally billing providers of the tests rather than those who took the tests; 4) performing "herbal crystallization analysis," a test not approved by the New York State Department of Health; and 5) making false and misleading statements to promote the test to health professionals and the general public.

- Doctor's Data Laboratories, Inc., of West Chicago, Illinois, has been: 1) doing unauthorized business in New York State; 2) operating without a laboratory permit; 3) accepting specimens from unauthorized persons; 4) illegally billing providers of the tests; and 5) performing an unapproved laboratory test (hair analysis) which Pace used as a basis for nutritional advice to clients.

- The International Institute of Natural Health Sciences, Huntington Beach, California, and its president, Kurt Donsbach, have been: 1) doing business in New York State without authority to do so; and 2) engaging in a scheme to defraud consumers by means of a "Nutrient Deficiency Test," claimed to be useful in analyzing nutritional status and prescribing dietary supplements to correct supposed deficiencies.

- Donsbach University and its president, Kurt Donsbach, have been: 1) conducting business in New York State without legal authorization; and 2) violating state education laws by advertising unaccredited degrees to state residents.

Action in these cases was triggered by a complaint from the mother of a client of Gary Pace, whose "Ph.D." in nutrition is from Donsbach University. Pace is "certified" as a "nutritional consultant" by the Amer-

ican Association of Nutritional Consultants and is a member of the group's "national board of consultants," of which Donsbach has been chairman. Pace's ads also state that he is registrar of the American Nutritional Consultants Association, another group that promotes unscientific nutrition practices based on Donsbach's theories.

The case against Pace was supported by affidavits from thirteen aggrieved clients and two undercover investigators, all of whom were advised to take vitamins, minerals and/or herbs. Some of the female clients reported that Pace examined their breasts or genitals. A number of the clients underwent significant expense to obtain medical reassurance that they did not have various diseases that Pace said they had. One client was advised by her medical doctor to stop taking vitamin A supplements because her palms had become yellow as a result of vitamin A overdosage.

According to the Attorney General's office, at least 251 clients paid Pace an average of \$307 during the past four years. Many of them had been attracted by his 2"x4" ad in the Nassau County Yellow Pages, which claimed he would "determine your body's true vitamins, minerals, enzymes and glandular needs" with hair and diet analysis, nutrient deficiency testing, herbal saliva testing, metabolism testing, computerized urine testing, iridology, reflexology, kinesiology, herbology, homeopathic and allergy tests. The ad offered nutritional counseling for weight problems, diabetes, high blood pressure, insomnia, natal care, hyperactive children, ulcers, and other related conditions. The ad also offered a "free consultation," which, the investigators discovered, consisted of the brief telephone conversation he has before advising prospective clients to make an appointment.

The saliva test was performed by having the client lick a slide which was sent to Herbal Tracers for analysis. The lab would then issue a report based on crystal patterns that supposedly indicated organ dysfunctions and herbs that could be used to remedy them.

Doctor's Data, the largest commercial hair analysis lab in the United States, held a permit to operate in New York State for a short period in 1982 until state authorities discovered that its director lacked the credentials required by state law. The permit was revoked and the lab was ordered to stop accepting, testing or reporting on specimens received from New York State residents—an order that the company ignored. A recent Cable News Network report stated that Doctor's Data performs 200-400 tests per day for an average of \$28 per test.

Donsbach's Nutrient Deficiency Test is composed of 245 yes/no questions about symptoms. When fed into a computer, these data yield a printout of supposed nutrient deficiencies and medical conditions. The court papers indicate that experts who have evaluated the questions do not believe they provide a basis for evaluating nutritional status. Moreover, a scientist with the FDA's Buffalo district office who analyzed the test's computer program found that no matter how the questions are answered, the test finds several "nutrient deficiencies" and almost always recommends an identical list of vitamins, minerals and digestive enzymes. The ques-

tionnaire also contains a section with questions about the subject's food intake during the past week. However, the answers given do not affect the printout of supposed nutrient deficiencies!

Each of the above complaints asks the court to order a permanent injunction against the illegal acts as well as payment of costs, civil penalties, and restitution to consumers. In addition, to help protect consumers from other unqualified "nutrition consultants," Attorney General Abrams plans to ask his state legislature to pass a nutritionist licensing law.

BRIEFS

Hair analysis exposé. When 52 hair samples from two healthy teenagers were sent to 13 commercial hair analysis laboratories, the reported levels of minerals varied considerably between identical samples sent to the same lab and from lab to lab. The labs also disagreed about what was "normal" or "usual" for many of the minerals. Most reports contained computerized interpretations that were voluminous, bizarre, and potentially frightening to patients. Six labs recommended food supplements, but the types and amounts varied widely from report to report. Literature from most of the labs suggested falsely that their reports were useful against a wide variety of diseases and supposed nutrient imbalances. The 5-page report, published in the August 23/30 *Journal of the American Medical Association*, was summarized in the AMA's weekly press packet to more than 2,000 health and science writers and was widely reported through the media. A copy of the article can be obtained by sending a self-addressed 4"x9 1/2" envelope stamped with 39¢ postage to Hair Analysis Report, P.O. Box 1747, Allentown, PA 18105.

Herbalife layoffs. Negative publicity appears to have hurt Herbalife seriously. According to *Newsday* [June 6], enforcement action in California [see NF: 2:29] plus negative publicity from the recent weight-loss hearings have dampened sales so much that more than 500 employees (about one-third of Herbalife's work force) have been laid off. Another factor in the slump is competition: similar products are being marketed through health food stores and through Uni-Life, a multilevel sales company started by former Herbalife distributors.

Irradiated foods report. A free copy of the American Council on Science and Health's new 27-page booklet can be obtained by sending a self-addressed 4"x9 1/2" envelope with 39¢ postage to Irradiated Foods Report, A.C.S.H., 47 Maple St., Summit, NJ 07901.

Irradiation information center. The National Agricultural Library has created a clearinghouse to provide scientists and consumers with information about the potential uses of food irradiation. Information about the facility can be obtained by contacting Carole Shore, Food Irradiation Center Coordinator, National Agricultural Library, Room 304, Beltsville, MD 20705 (telephone: 301-344-4369).

Cholesterol labeling? According to an article in *The New York Times*, the FDA is considering allowing manufacturers to provide information about the amount of cholesterol in particular foods—perhaps with use of the terms "low cholesterol" or "reduced cholesterol" in labeling.

Consumer protection bill. S. 1313, introduced by Senator Howard Metzenbaum (D-OH), would enable state attorneys general to bring action under the Federal Trade Commission Act's provisions against unfair and deceptive practices. Currently, state agencies are generally limited to obtaining court orders to stop illegal practices within their own state. The new bill would enable them to initiate complaints in federal courts, and would allow the courts to make rulings with nationwide impact.

Antifluoridation propaganda exposed. The Ohio Department of Health has completed an analysis of *Lifesavers Guide to Fluoridation*, an 8-page pamphlet by John Yiamouyiannis, Ph.D. Painstaking research over a 2-year period by Coleen A. Wulf, R.D.H., and 13 colleagues showed that many of the references used to back up antifluoridation claims actually support fluoridation but were selectively quoted and misrepresented. Moreover, of 250 "references" cited in the pamphlet, 116 had no relevance to community water fluoridation.

Book Review

Title: Fluoride, The Aging Factor (1983)
 Author: John Yiamouyiannis, Ph.D.
 Publisher: Health Action Press, Delaware, Ohio
 Price: \$11.95
 Reviewed by: Stephen Barrett, M.D.

Dr. Yiamouyiannis, who considers himself "the world's leading authority on the biological effects of fluoride," has been working full time for more than ten years to defluoridate the world. Hired in 1974 by the National Health Federation (NHF) to "break the back of fluoridation," he served as the group's "science director" for six years. In 1980 he left NHF and founded the National Health Action Committee and the Safe Water Foundation. In 1984 these groups merged their assets into the Center for Health Action, "a union of virtually every effective anti-fluoridation group in the country" [see NF 1:7].

Fluoride, The Aging Factor accuses fluoridation of causing cancer and a wide range of chronic ailments from skin wrinkles to arthritis. Although the author cites valid scientific reports to back up his claims, reviewers at the Ohio Health Department have found that the actual articles either support fluoridation or are irrelevant to it. Unfortunately, the book may frighten laypersons and help delay implementation of fluoridation in communities exposed to its ideas. A second edition is expected soon.

Title: Arthritis and Common Sense #2
 Author: Dale Alexander
 Publisher: Witkower Press, West Hartford, CT
 Price: \$14.95
 Reviewed by: Alan A. Halpern, M.D.

This is a major revision of the highly popular book, *Arthritis and Common Sense*, first published in 1954. It is touted as the "best selling book on arthritis ever written," with over 1,200,000 copies sold. As I began reading it, I conjured up an image of a sincere and dauntless individual searching throughout the world for the mystical "answer" to arthritis. But at the end, it was clear that the author had somehow managed to bypass virtually every institution of higher learning and serious arthritis research. Along the way, I noted factual errors on most pages and an alarming tendency to endorse the work of other questionable promoters.

Mr. Alexander, who has no recognized academic or scientific credentials, says he began formulating his

ideas while serving as a medical technician in the Air Force. His "research" is nothing more than a compilation of anecdotal reports and uncontrolled projects.

According to Alexander, the basic cause of arthritis is "poorly lubricated joints." His central premise is that dietary measures—particularly the use of cod liver oil—are effective in preventing and/or curing arthritis. The book asserts that oils in the diet can act as lubricants in the joints if only the diet is correct, and furthermore that "diet can increase or enhance the quality of synovial fluid in arthritic joints." He postulates that while 90% of cod liver oil reaches the joints and other tissues, only 65-75% of oils from salad oil or meats do so—and that, "Even worse, if you drink ice-cold beverages or carbonated soda pop with meals, oil delivery will be reduced to only 5% or 10%."

Serious scientists have been examining the effects of different diets on the course of rheumatoid arthritis. The results so far are inconclusive and certainly don't support Alexander's global conclusions. But Alexander tells readers what many of them want to hear: that there is a simple answer to their problem. They do not have to understand their particular disease or its standard treatment, or to settle for their doctor's advice that most cases of arthritis can be controlled but not cured.

The book's commercial success is no doubt testimony to the fact that faced with a chronic and painful condition, desperate individuals, no matter how sophisticated and well educated, often grasp at unproven treatments. I read it with a mixture of envy and anger: admiration of the author's marketing skill, yet saddened by the American public's continued appetite for simple answers and easy home cures. Mr. Alexander is a master of his craft. Those who devote their energies to informing the public about arthritis might do well to learn from his style, so that perhaps reason could be communicated as effectively as fiction.

Alexander states in the book's first chapter that many people have reported long-lasting relief with his methods. It would be fascinating to see an objective study of Alexander's approach and what happens to those who read his book. Perhaps some day he or a member of the scientific community will undertake such a survey.

Dr. Halpern is an orthopedic surgeon who practices in Kalamazoo, Michigan. He is a clinical instructor in the department of surgery at the Michigan State University College of Human Medicine and is author of *The Kalamazoo Arthritis Book* and *Runner's World Knee Book*.

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“HERBALIFE HEARINGS,” PART II

Odom Fanning

May 15th was a sunny Spring day, ideal for a demonstration. About 8 a.m., an estimated 3,000 Herbalife supporters from across the country began gathering on Capitol Hill, each wearing a large button reading: “I lost X pounds. Ask me how.” They had been called to Washington for a rally whose main purpose was to grab media attention and get television reporters to ask, on camera, how they had lost their claimed poundage. The evening before, they had shared their enthusiasm in a ballroom at the Hyatt Regency Hotel, where they received buttons and instructions from a platoon of officials from Herbalife International headquarters in Los Angeles.

The 5-block walk from the hotel to the Dirksen Senate Office Building was covered by camera crews from the networks, alerted by the Washington offices of Herbalife’s public relations counsel, Rogers & Cowan, Inc., of Beverly Hills, Calif. Of the 100 or so demonstrators who gained entrance to the building, only about 50 could fit at any one time into the spectator section of crowded Room 342 where the U.S. Senate Permanent Subcommittee on Investigations held its 2-day hearing on weight reduction products and plans.

To the credit of the audience and chairman, Senator William V. Roth, Jr. (R-DE), decorum in the hearing room was maintained at all times. Nor did the Herbalife representatives who stood for hours in the hallway hoping that space inside would become available require anything of Capitol police other than normal crowd control.

At the first day’s hearing, Senator Roth had indicated that although many very low calorie (VLC) dietary products are being sold, his subcommittee’s review had focused on Cambridge and Herbalife, “largely because they have pervaded the market.” Reading from his staff’s report, Roth had noted that the FDA had collected 12 reports of deaths and 138 complaints of illnesses associated with use of the Cambridge diet. The agency had also received 90 complaints of alleged illness due to Herbalife products, four reports of death, and 32 allegations of fraud.

“While these numbers may pale in comparison to those persons who experienced no side effects or adverse reactions,” the report said, “they may nevertheless be significant enough to warrant more scrupulous attention by the FDA to better determine whether there is, in fact, a cause and effect relationship.”

Testifying for the FDA, Commissioner Frank E. Young, M.D., Ph.D., conceded that under provisions of the Federal Food, Drug, and Cosmetic Act, his agency has authority over food, drug, and medical device products that are specifically promoted for weight loss. Reading his 15-page statement, Dr. Young said, “FDA has attempted, over time, to modify its strategy to make the most effective use of resources for dealing with those products which represent a health fraud. Until the 1960’s, the most common tool used was criminal prosecution. A number of cases were successfully tried, and these achieved some deterrent effect. But because this is a more time-consuming and resource-intensive approach to the problem, the agency has expanded its enforcement program to include other judicial and administrative measures such as seizures, injunctions, and regulatory letters.”

With all seriousness, the nation’s highest-ranking health regulator declared, “I believe that public education is probably the most effective and cost-efficient way of combating health fraud, especially economic fraud. This is because the surest way to reduce health fraud is to reduce consumer demands for fraudulent products. In the weight loss product area, FDA has begun a public awareness campaign that includes a slide show, exhibit, and videotape focusing on diet books, low-calorie diets, body wraps, starch blockers, and other weight loss products and urges consumers to consult their physicians prior to beginning diets and to be aware of the general principles which apply to reduction diets.”

Regarding VLC diet products, Dr. Young said, “Some manufacturers and distributors are promoting herbal mixtures for a variety of weight control programs. The diet plans may replace one or more meals

a day with low-calorie product mixtures including herbs, vitamins and minerals, lecithin, senna leaves, kelp, chickweed, and dandelion, but no significant data have been provided to demonstrate that such ingredients do anything to control weight gain or ensure weight loss . . ."

"In addition to not being the magic answer to weight loss, herbs can be unsafe. No one would knowingly consume poisonous herbs, of course. And no responsible herb company would even consider putting such herbs in its products. But the fact is that poisonous herbs have been found in diet aids in low levels, and FDA has taken action against products in such cases. And although we know about the toxicity of some herbs, we do not know enough about many to conclude that they are safe as currently promoted in some weight reduction plans."

In response to a question, Dr. Young acknowledged that the FDA regards dietary products as drugs if any therapeutic claim is made for them. But he added that if the agency attempted to regulate them on the basis of more general claims, Congress might reduce its authority as it did in 1976 with the Proxmire Amendment (which ended FDA jurisdiction over the dosage and composition of ordinary food supplements).

That answer was not acceptable to Senator Warren B. Rudman (R-NH), who asked: "If a company encourages witnesses to make claims that the company can't make, and these claims are made on TV time paid for by the company, and the FDA has such evidence, how long is it going to take you to act?" (Rudman was obviously aware that the FDA has had sufficient evidence for more than two years to initiate criminal prosecution of Herbalife for making illegal therapeutic claims.) Dr. Young hedged, saying he didn't want to compromise his agency's investigation of the company. On advice of his accompanying legal counsel, he declined to go further—and the Senators did not press him to do so. But when Rudman asked whether the FDA had a timetable for deciding whether the evidence warranted enforcement action, FDA General Counsel Tom Scarlett replied, "It is going to be in the relatively near future. Another year."

Testifying for Cambridge Plan International of Pacific Grove, California, was its president, Vaughn Feather. He said he welcomed the subcommittee's investigation because it gave him the opportunity to explain how his company had made major changes in its products and programs since 1982, when sales and (adverse) publicity concerning the Cambridge Diet were at their peak.

Feather said his company had begun in 1980 with a single product composed of nonfat dry milk and soy flour enriched with 100% of the USRDAs of vitamins and minerals plus trace elements and electrolytes to create a nutritionally dense formulation providing 330 calories per day. "It was originally marketed as an exclusive source of nutrition for periods up to four weeks,"

he explained. Next was to be "a week of recommended low-calorie meals, followed if necessary by further use of the diet as a sole source of nutrition."

Feather also said that when Cambridge was only two years old, it was doing a little over \$390 million in Cambridge Plan dietary products. Then its sales fell just as steeply in late 1982 and early 1983, and in September 1983 the company filed for reorganization under Chapter 11 of the Federal Bankruptcy Act. Its 1985 sales are expected to be about \$15 million.

When asked to explain the downturn in the company's fortunes, Feather replied, "We ran out of money. We had thought matching up a good product with a network of peer support, copied after Mary Kay cosmetics, was a good idea. But pyramiding didn't work with us. Rather than selling the diet, we had people circling the United States signing up new counselors. They were selling opportunities to make a lot of money."

Late in 1982 Feather met with the director of FDA's Bureau of Foods, who suggested improved quality assurance, a dialogue with critics of the plan, and research in this country—all of which the company did, Feather said. The original 330-calorie/day program was abandoned in favor of three new plans which provide 800 or more calories per day and which advise medical consultation prior to use. Feather also said that proceedings of a 1983 scientific symposium on VLC diets will soon be published in book form. Though sponsored by Cambridge, the meeting was organized by three prominent nutritionists: Drs. George Blackburn and Fredrick Stare of Harvard University, and Dr. George Bray of the University of Southern California. (Curiously, Dr. Blackburn was one of the experts against Cambridge in the court case described in the editor's note accompanying this article.)

When called by Senator Roth, Mark Reynolds Hughes, 29, Herbalife's founder and president, bounced forward with a retinue of corporate officials and consultants. Accompanying them to the witness table was Representative William E. Dannemeyer (R-CA), whose district contains a manufacturer of Herbalife products which employs 200 people.

"Consumers should be allowed a maximum of freedom of choice to make decisions for themselves," the Congressman said. "Those that make false claims or otherwise violate the law must answer at the bar of

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justice. We must not, however, indict a health program generally, or particularly weight control products, merely because they are 'unconventional' or 'nontraditional' by the standards of the established medical profession."

"Before coming to Congress, I was involved in matters of this nature," Dannemeyer said, referring to his former role as legal counsel for the Alta-Dena Certified Dairy, the nation's largest marketer of certified raw milk. Last October, Dannemeyer testified on behalf of Alta-Dena against federal regulation of raw milk at an FDA hearing [see NF 2:1-4].

After introduction by Dannemeyer, Hughes said that practically everybody in his family has had a weight problem and that he became interested in doing something about this after his mother got "hooked" on a prescription weight control product. Thus inspired, he founded Herbalife International in February 1980 when he was 23 years old and built it to gross sales of almost \$500 million last year.

Hughes himself, elegant and trim, "welcomed the opportunity to be a part of this Subcommittee's effort to inform the American consumer about the worthless products which are threatening the reputations of the responsible companies." After further remarks, he presented a company consultant, David Brandeis Katzin, M.D., Ph.D., a private practitioner from Los Angeles, who said that during the past five years he had personally treated well over 1,000 individuals, many with weight-related problems. Herbalife's program is nothing more than sound basic nutrition, Dr. Katzin asserted.

Diets that contain less than 500 calories per day and consist exclusively of formula drinks "can be potentially extremely dangerous and must, under all circumstances, be supervised medically. Even then serious side effects may occur; however, medical supervision reduces the risk of prolonged or permanent complications," Katzin said. "Herbalife does not have 500 calories, it has 1,000 or more . . . In addition, the balance of protein, carbohydrates and fat is entirely different. Very low calorie diets are deficient in potassium, whereas the Herbalife nutritional program contains adequate potassium according to RDA recommendations. In addition, the Herbalife nutritional program contains a balance of vitamins and minerals which meet or minimally exceed the RDAs for these nutrients."

Katzin declared: "Literally billions of portions of the product have been served to more than a million

individuals with only minimal transient side effects. I know of no other nutritional program which has been used as widely as the Herbalife program or as safely."

Katzin presented a series of charts and graphs. One, he said, was based on evaluation at the University of California, San Diego, of seven Herbalife consumers who had used the products for one to four years and showed "no deficiencies of serum potassium, magnesium, calcium, iron, zinc and copper." From this he concluded that the Herbalife nutritional program is safe." (Under questioning he listed as exceptions: "individuals on dialysis, with intestinal bypass, and others under a doctor's care.")

"How about for a pregnant woman?" Roth asked.

"If told to reduce by a physician, then it would be safe for her," replied Dr. Katzin. However, he added, he wouldn't recommend that a pregnant woman lose weight. Hughes later agreed with a suggestion by Senator Roth that such products be labeled to warn pregnant women that they should consult a physician before taking them.

Other charts Katzin presented were based on a retrospective study of 428 users, including one chart of "transient side effects" which indicated that of 428 Herbalife users, 18.6% had experienced headache, 12.5% had constipation, 11.3% had diarrhea, 9.7% had nausea, 9.6% reported lightheadedness, 2.6% had heart palpitations and 10.1% had other symptoms. Altogether, about 40% of those surveyed had some symptoms that might be attributed to taking Herbalife products, Katzin said. (The above numbers add to more than 40% because individuals can have more than one symptom.) Hughes, basing his estimate on feedback from distributors had said earlier that roughly 10-15% of users have such side effects, which usually last only a week.

Senator Rudman was relentless in questioning both Herbalife witnesses. To Dr. Katzin:

"You were hired about three months ago?"

"Yes."

"That was about the time Mr. Hughes learned that Herbalife would be invited to testify," said the Senator. After more exchanges in which Katzin was evasive, he insisted on a yes-or-no answer to the question: "Weren't you hired to come to this hearing?"

"Yes," replied Dr. Katzin.

Senator Rudman asked Hughes why Richard Marconi, the manufacturer of Herbalife products, was not present for the hearings.

EDITORIAL BOARD

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"Doctor Marconi is in China," said Hughes. (Marconi claims to have a Ph.D. in nutrition from Donsbach University, which is a correspondence school located in Huntington Beach, California.)

"... This doctorate this man allegedly has is from a totally unaccredited university... he, in fact is really not a Ph.D. in nutrition. Do you know that?" Rudman asked.

"I don't know about that..." Hughes came back. "Dr. Marconi is one of the most brilliant guys I know."

"Isn't it true that you have no college degree?" Rudman then asked Hughes. "You completed the ninth grade in school, but consider yourself an authority on nutrition?"

"I know that this plan works," responded Hughes. Later he called himself "an authority on helping people lose weight."

Rudman focused much of his questioning on an early edition of Herbalife's *Official Career Book*, a training manual for distributors, and read statements of claims for cures of cancer, arthritis, and other diseases. Hughes replied that the copyright laws required picking up significant amounts of material where Herbalife products are endorsed—"in order not to take statements out of context." Therefore, said Hughes, the *Career Book*

had reproduced many pages from magazines, in which the authors may make unrelated claims.

"Because some quack somewhere said something might cure cancer, you thought it all right to publish?" Rudman exploded.

"No, I am not saying that," insisted Hughes.

"That's one of the most incredible bits of snake oil I've ever heard!" the Senator declared.

Rudman's final line of questioning had to do with Herbalife's cable television broadcasts. "People come up on your cable program and give testimonials about being cured of cancer, don't they?" he asked.

Hughes admitted that that had happened, but insisted. "After two live shows, when we found out that happened, we went to the tapes and edited out any health claims."

"The representatives, might they not make health representations?" Rudman pressed him.

"No, we have three categories for representatives being suspended, and 358 representatives have been terminated for misadvertising, failure to make refunds, etc. I terminated one representative who was making \$30,000 a month."

"Do you believe it's safe to use your products without consulting a doctor?" Roth asked.

EDITOR'S NOTES

- Dr. Young's claim that the FDA "expanded" its enforcement program during the 1960s is preposterous. A tabulation by FDA Historian Wallace Janssen shows that between April 15, 1960 and September 30, 1963, the agency successfully concluded about 150 civil and 12 criminal cases involving misbranded food supplements. During the next 20 years, only one such criminal prosecution was filed (and settled by a guilty plea). Moreover, the FDA has no data to demonstrate that criminal prosecution is more "resource intensive" than civil actions. Dr. Young's idea that education is "most effective" against health frauds is simplistic. Although education can protect many people, enforcement actions will always be needed to protect individuals who look for "miraculous" solutions to their health problems.

- The Cambridge Diet actually began marketing as a mail-order product with advertised claims that it could produce weight loss of up to 15 pounds in 1 week and 48 pounds in 6 weeks, and that it would reduce body fat as rapidly as fasting or complete starvation. After the Postal Service complained that these claims were false, a U.S. District Court Judge temporarily halted sales through the mail and commented that the diet appeared to be deadly. The company then signed a consent agreement to discontinue the claims and to label the product with a statement that it should not be used as a sole

source of nutrition for more than four weeks. The switch to person-to-person sales began soon afterward.

- The questionable credentials of Richard Marconi were exposed prior to the hearings in a 4-part investigative report on Herbalife that was aired nationally by Cable News Network. CNN revealed that although Hughes claimed that Herbalife products had been formulated with the help of Marconi and his "research staff," no research on effectiveness had actually been done before the products were marketed. And Herbalife's supposed "research laboratory" turned out to be a conference room that housed a large table and books on herbs, located at one of Marconi's factories. Marconi told a CNN interviewer, "We employed hundreds... even thousands of Ph.D's in the research program for our products." But when asked who they were, he replied, "Why, the research papers that are published and printed that we have access to on our computer..."

The CNN report also demonstrated that Herbalife's *Official Career Book* once claimed that ingredients in Herbalife products were effective against arthritis, bronchitis, emphysema, gangrene, snake bites, ulcers, venereal disease and a wide range of other serious health problems. Vigorous FDA enforcement action at that time might well have stunted Herbalife's growth.—Stephen Barrett, M.D.

"Sure," replied Hughes. "Everybody needs good, sound basic nutrition. We all know that."

Senator William S. Cohen (R-ME) asked Hughes about the use in Herbal-aloe of comfrey and chaparral, which witnesses on the previous day had testified have cancer-causing properties. Hughes said that neither he nor the FDA was concerned because quantities in the formula were well below the unsafe level. Although Commissioner Young had indicated a few hours earlier that the agency was still considering action against the company for unfounded medical claims made on behalf of its products, Hughes also said Herbalife was cooperating with the FDA.

Regarding side effects, Senator Roth asked, "Shouldn't there be warnings . . . on the labels?"

Warnings are made "basically by word of mouth" through the distributors, Hughes replied.

"But isn't the public entitled to know about these?" Senator Roth pressed him.

"Yes," conceded Hughes. "This company is open and willing to consider labeling."

Senator Rudman closed the questioning of Hughes: "Last night there was a rally of 3,000 to 4,000 Herbalife representatives at the Hyatt Regency/Capitol Hill Hotel. Towards the end, Larry Thompson, executive director of sales for Herbalife International, solicited tes-

timonials and obtained them from three people. One said she was told by a doctor that her child was dying, put the child on the product, and the child didn't die. Another was supposedly cured of diabetes. And the third supposedly was on crutches for some time, took Herbalife, and no longer had to use them. If you were running a first-rate company, do you think you should allow such testimonials?"

Before Hughes could respond, Rudman added a final question: "Don't you think you ought to clean up your act?"

"I think we should," Hughes agreed, "and we're trying to do that right now."

The hearing was adjourned at 3:00 p.m., too late for a 1:30 press conference Herbalife's public relations firm had planned for Hughes at the Hyatt Regency.

Mr. Fanning, formerly a science writer for *The Atlanta Journal* and director of information for the Centers for Disease Control, is editor and publisher of *Consumer New\$weekly*. A complete transcript of the hearing may be requested by sending a self-addressed mailing label to Weight Reduction Hearings, c/o Mr. Howard L. Shapiro, Staff Counsel, Permanent Subcommittee on Investigations, U.S. Senate, Washington, DC 20510.

BOOK REVIEW

Title: *Cancer & Nutrition*

Author: Charles B. Simone, M.D.

Publisher: McGraw Hill Book Company, New York

Price: \$15.95

Reviewed by: Stephen Barrett, M.D.

The author is described on the jacket as a former researcher at the National Cancer Institute and belongs to the radiation therapy department at the University of Pennsylvania Hospital. The foreword is by Robert A. Good, Ph.D., M.D., former president and director of Memorial Sloan-Kettering Cancer Hospital. Seeing credentials like these you might think this book is well reasoned. But even superficial inspection reveals otherwise.

Simone's grasp of vitamin facts appears grossly deficient. He states, for example, that "the RDAs represent the minimum nutrient levels needed to prevent obvious signs of vitamin deficiencies" and suggests (based on claims by Linus Pauling) that the levels of vitamins required to maintain good health vary by as much as 2000% from one person to another. He cites a published claim that daily doses of 100,000 IU of vitamin

A have been given to adults for many months without serious side effects. And he claims erroneously that no case of vitamin E toxicity has ever been recorded. Presumably ideas like these induced Rodale Press to pick this book for its Prevention Book Club.

Simone's advice is summarized in a "ten-point plan for risk factor modification." Some of the advice is standard and appropriate (e.g., don't smoke or chew tobacco, moderate alcohol intake, be alert to cancer's early warning signs, use sunscreens). But his lists of dietary don'ts—which include salad dressings, pickle relish, whole eggs, cooked, canned, or frozen fruit with added sugar, all jams, jellies, and bleached white flour—strike me as irrational.

Most curious is his claim that "Risk Modifier," a vitamin/mineral supplement he formulated for General Nutrition Corporation (GNC), should be taken by everyone. This product was one of 14 GNC products accused by the Postal Service of being falsely advertised. In February 1985, the company signed a consent agreement promising to discontinue unproven claims that any food supplement consisting of vitamins and minerals will decrease the risk of cancer [see NF 2:47].

THE DENTIST AND NUTRITION QUACKERY

John E. Dodes, D.D.S.

In the good old days, the only nutritional counseling a dentist provided was advice to avoid sugary snacks between meals. Today "holistic" dentists are promoting a wide variety of ideas that have no scientific foundation. Recent topics in *The Mittelman Letter*, a popular holistic newsletter published by Jerome S. Mittelman, D.D.S., of New York City, illustrate the nature of these ideas:

"How a D.D.S. uses Vitamin C powder for hemostasis and why it's better in restorative dentistry."

"Food intolerance can lead to bleeding gums"

"A food supplement to help eliminate mercury from your body . . . a must for the intelligent dentist"

"Using semantics in nutritional counseling"

"Stress, ulcers and Vitamin A"

"About research that shows cholesterol may help body's defense cells to fight cancer"

Nexus is another popular dental newsletter that often promotes holistic concepts. Its October 1983 issue tells how hair analysis can help to predict personalities prone to extreme violence.

Emanuel Cheraskin, M.D., D.D.S., and William Ringsdorf, D.D.S., have also been active in attempting to convert dentists to questionable nutrition. Their books, *New Hope for Incurable Diseases* and *Psychodietetics*, make many scientifically unsupported claims that nutritional methods have exceptional value in the treatment and prevention of diseases—particularly incurable ones. They claim, for example, that a diet low in sugar and processed carbohydrates will demonstrably tighten loose teeth in less than 10 days. Drs. Cheraskin and Ringsdorf lecture widely and are quoted in "holistic" journals. They have made serious inroads into dentistry because until recently both taught at the University of Alabama's dental school. Their books, although scientifically discredited, are cited to support the dubious claims of others.

"Applied kinesiology," founded in 1964 by George Goodhart, D.C., is a system of diagnosis and treatment based on the theory that every organ dysfunction is accompanied by a specific weak muscle. Kinesiologists also claim that nutritional deficiencies, allergies and other adverse reactions to food substances, can be detected by placing substances in the mouth so that the patient salivates. "Good" substances will make specific muscles stronger, whereas "bad" substances will cause specific weaknesses. Treatment of muscles diagnosed as "weak" may include special diets, food supplements, acupressure, and/or spinal manipulation. "Dental kinesiology" is concerned with connecting supposed muscle weakness with problems of the head and neck, particularly the temporomandibular joint (TMJ).

Harold Gelb, D.D.S., former director of the Temporomandibular Joint Clinic of the New York Eye and Ear Infirmary and currently a professor at the College of Medicine and Dentistry of New Jersey, believes that failure of the teeth to fit together properly can have far-reaching effects on the rest of the body. He believes that the TMJ can cause weakness and disease far from the joint itself and vice versa. Dr. Gelb uses applied kinesiology to diagnose and treat TMJ problems.

Kinesiological concepts do not conform to accepted scientific beliefs about the cause of disease; and critics cite studies showing that apparent results are due to patient suggestibility and the fact that 80-90% of patients with facial pain not due to tooth or gum infection will recover spontaneously. However, despite its absurdity, many insurance companies pay for "TMJ therapy" based on applied kinesiology.

Actual tests of several kinesiological techniques on college students were reported in the March 21, 1981 *Journal of Prosthetic Dentistry*. Each student, seated behind a screen with one arm exposed, was instructed to hold an arm parallel to the floor and resist the examiner's downward force. In the first test, muscle strength was measured before and after decreasing the overlap of front teeth. In the second, muscle strengthening and weakening techniques were performed on a shoulder muscle using kinesiologic techniques. In the third study, subjects were tested after ingesting a small amount of candy and retested after ingesting 400 IU of vitamin E. In the final test, students were told that the candy would give them instant energy and that they would probably test stronger. In the first two tests, techniques which kinesiologists claim will increase or decrease muscle strength produced no overall change. In the second two tests, while ingestion of sugar caused a majority of students to test weaker, simple suggestion reversed this trend.

Two others who support a "holistic" approach to dental problems are Lendon Smith, M.D. and Carlton Fredericks, Ph.D. Smith acknowledges that fluoridation is helpful while Fredericks feels that it leads to increased use of sugar and can cause dangerous vomiting. In his *New and Complete Nutrition Handbook*, Fredericks proposes instead an "anti-tooth-decay diet," high in fiber, low in sugar and carbohydrates and supplemented with vitamins and minerals. Fredericks uses Dr. Cheraskin as one of his authorities. Recently, Fredericks has been advising his radio listeners that their silver fillings may be the cause of many diseases. According to a report from the Food and Drug Administration, Fredericks has no formal training in nutrition and obtained his doctoral degree in the field of communications. Dr.

Smith, a pediatrician, was placed on probation from 1973 to 1981 by the Oregon State Board of Medical Examiners for prescribing medication that was "not necessary or medically indicated" for six adult patients.

Another prominent promoter of questionable nutrition is Hal E. Huggins, D.D.S., of Colorado Springs, Colorado, a leading exponent of "balancing body chemistry." He appears to believe that most diseases are caused by "imbalances" that can be cured by dietary practices. Special diets and food supplements are recommended in order to become "balanced." Various laboratory tests, especially hair analysis [see NF 1:12], are used to determine the supposed biochemical health of the patient. Dr. William Jarvis calls this approach a form of "simpleton science."

Dr. Huggins is also deeply involved in the "silver-amalgam toxicity" issue. "Silver" fillings are made from a silver/tin/copper/zinc alloy mixed with mercury. Huggins and his followers claim that silver amalgam fillings can cause multiple sclerosis, Parkinson's disease, arthritis, headaches, etc., and many other chronic conditions. Dentists who espouse this idea are advising their patients to have all of their silver fillings replaced with either gold or plastic ones and are prescribing vitamins, "chelating agents," and sometimes vitamin-enriched "purifying diets."

Since mercury was introduced over 150 years ago, its possible dangers have been considered, debated, and thoroughly investigated. Many studies have shown that amalgam fillings are safe. This conclusion is now being questioned, not within the refereed journals and respected research facilities of the dental profession, but in the media and in "holistic dentistry" courses. For example, on April 6, 1984, *The CBS Evening News* in New York aired a poorly investigated and highly distorted story which included an interview with a dentist who has a "degree" in nutrition from Donsbach University, an unaccredited correspondence school. Early this year, the Colorado State Board of Medical Examiners began investigating Dr. Huggins to determine whether his involvement in diagnosing and treating "mercury toxicity" constitutes practicing medicine without a license.

Perhaps the most alarming thing about the practices described in this article is that they are being presented at dental meetings and occasionally even at dental schools and in dental journals. For example, the July 1983 *Dental Clinics of North America*, which dealt with temporomandibular joint dysfunction, contained a chapter in which chiropractor Goodheart advocates

chelated iron and raw veal bone tablets as appropriate treatment.

In another chapter, osteopath Viola Frymann claims that skull bones can move and that the "integrated activity of central nervous system, cerebrospinal fluid, dural membranes, cranial bones, and sacrum made up the primary respiratory mechanism, the physiologic function in the body, the primary expression of life itself." Although these ideas contradict established anatomical and physiological facts, Dr. Frymann teaches them to postgraduate students at Georgetown University's school of dentistry.

At Boston University's Henry M. Goldman School of Graduate Dentistry, a course on the diagnosis and prevention of amalgam intoxication was given on March 10, 1984 and again on November 3, 1984. This course is taught by Victor Penzer, D.M.D., who also teaches courses titled "Acupuncture for the Dentist" and "Adventures in Dental Hygiene" for hygienists. In this course hygienists are instructed in acupressure and reflexology, systems of treatment which claim that pressure on the hand or foot can cure diseases throughout the body. This course description states that "the benefits of comprehensive oral health include: for hygienists—enlarged therapeutic scope, enhanced status; for dentists—escalated utilization of personnel, increased income."

Dr. Penzer belongs to the International Academy of Preventive Medicine. Other "holistic" dental associations are the American Society for Preventive Dentistry, the American Academy for Functional Prosthodontics, the American Academy of Physiologic Dentistry, and the Holistic Dental Association International. These organizations and their spokespeople seem unable to correctly assess the scientific validity of a study, and promote unproven theories as though they are facts. Dr. Penzer has written that "holistic dentists not only use orthodox knowledge but also look for new horizons towards optimal health." So do true dental scientists, but they don't market methods based solely on personal philosophy and anecdotal reports. The "holistic dentists" appear to have become so "open-minded" that their brains have fallen out.

Shaklee Corporation, according to its brochure, is "the number one nutrition company in America," with annual sales of food supplements in the hundred of millions. June Stone of the Markstone Shaklee Center in N.Y.C. told me that my dental assistant, although untrained in nutrition, could increase my income up to \$50,000 per year with part-time counseling. Shaklee then sent me a pamphlet entitled "Why Food Supplements" by Bruce Miller, D.D.S., who advises the use of only "natural" vitamins.

Dental education does not include courses on skeptical thinking or the scientific method. Like the general public, dentists are inundated with pseudo-scientific articles, and massive advertising campaigns. Special vitamins to "support the body's natural mecha-

COMING SOON

The American Association of
Nutritional Consultants—
Who and What Do They Represent?

nism for the elimination of mercury" are promoted and sold to dentists, and many dentists and their families take megadoses of vitamins.

The increase in quack dental practice may also be related to the fact that during the past 15 years, water fluoridation has caused a major reduction in tooth decay while dental schools have increased their enrollment. Together these mean less work per dentist. Economics has always been a factor in the acceptance of pseudoscience, and even many years of graduate and postgraduate education do not appear to prevent irrational behavior.

The problem has become so serious and pervasive that the lead article in the July 1984 *Journal of the American Dental Association* was "Diet, Nutrition, and Oral Health: a rational approach for the dental practice." Written by a panel of qualified health, dental and nutrition experts, it begins with this statement:

"Hair analysis, megavitamin therapy, cariogenicity of foods [and] nutrition counseling—all are issues relating to diet and nutrition that dentists are increasingly being called upon to address in their prac-

tices. Dentists' ability to separate fact from fiction in nutrition and diet is essential in a time when consumer magazines are filled with articles touting the therapeutic effect of vitamins or outlining the latest health fads. Patients naturally turn to their dentists for sound, scientific, and rational advice on questions of nutrition, diet, and oral health."

Concerned dentists are requesting that dental schools, dental meetings and dental journals become more stringent in upholding scientific standards. *Courses in skeptical thinking are needed at every dental school.* Dental insurance companies and malpractice carriers should become better informed about the problems created by quack dentistry. Most important, the American Dental Association should warn the public about unscientific practices and try to discipline dentists who use them.

Dr. Dodes practices general dentistry in Woodhaven, New York, and lectures on quackery vs. quality in dentistry.

BRIEFS

Anti-mercury dentist under investigation. The Colorado State Board of Medical Examiners has been investigating Hal A. Huggins, D.D.S., to determine whether he has been practicing medicine without a license. According to a report in the *Denver Post*, Huggins began restricting his dental practice two years ago to working with patients he believes may be suffering from toxic effects of mercury-based fillings—which he believes can cause such illnesses as arthritis, multiple sclerosis, epilepsy and severe depression. His \$1,200 fee (recently raised to \$1,500) covers a lengthy consultation and laboratory analyses of hair, blood and urine. He then recommends dietary changes, use of vitamin and mineral supplements, and removal of mercury fillings.

Contempt ruling in cancer case. On April 24th, M.T. Products, of Tulsa, Oklahoma, was fined \$50,000, and its owner Mildred Trumbull, was placed on three years' probation for violating a 1980 consent decree prohibiting interstate shipment of Lilverum, an Easter lily extract that has been claimed to "surround and neutralize cancer within 30 minutes after use." Although an Oklahoma law allows its sale within the state, shipment across state lines still violates the federal Food, Drug and Cosmetic Act. According to the prosecuting attorney, the highest penalty levied previously in an FDA-sponsored contempt case was \$1,000. Further violation can lead to imprisonment.

AMA action against drunk drivers. Modifying a 25-year-old policy, the American Medical Association House of Delegates recently voted to ask states to establish a blood alcohol concentration (BAC) of 0.05% (40 mg alcohol per 100 ml blood) as conclusive evidence of drunk driving. The vote occurred in response to a report from the AMA Council on Scientific Affairs that deterioration of driving skills begins at that level and progresses rapidly as the level rises. The report also noted that drivers with BAC's between 0.05 and 0.10 are significantly represented in road crash statistics and that 55% to 65% of drivers fatally injured in single vehicle accidents have BAC's of at least 0.10, the level previously recommended as conclusive evidence of intoxication.

Update on Weider case. Joseph Weider and Weider Health and Fitness have agreed to pay a minimum of \$400,000 to settle FTC charges that they misrepresented two mineral supplements, Anabolic Mega-Pak and Dynamic Life Essence [see NF 1:13]. Weider and the company agreed not to falsely claim that these products can help build muscles or are effective substitutes for anabolic steroids. They also agreed to make refunds to anyone who purchased these products. If the amount refunded is less than \$400,000, the difference will be donated to fund research on the relationship of nutrition to muscle development.

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BE WARY OF THE PEOPLE'S MEDICAL SOCIETY

Stephen Barrett, M.D.

The People's Medical Society (PMS) is engaged in a wide variety of projects that may affect medical practice and consumer protection against nutritional quackery. Some of its aims are laudable, but make no mistake about it: the organization is rooted in deep antagonism to the medical profession and to medical science itself.

PMS is the brainchild of Robert Rodale, board chairman of Rodale Press (reported gross income \$140 million/year), which publishes *Prevention* magazine, *Organic Gardening and Farming*, and many books that recommend unscientific nutrition practices. During 1982, Robert ran a series of editorials in *Prevention*, criticizing the medical establishment and promising "a grassroots campaign that will turn America's medical system on its head."

Prevention, published monthly, contains easy-to-read articles on health topics. Many present practical tips, but the editors preach that everyone should supplement with extra nutrients. Articles that concern nutrition are usually slanted to suggest that supplementation is useful in the prevention or treatment of disease, and each issue contains letters from readers telling how nutritional remedies have supposedly helped them. Vitamins and other "food supplements" are heavily advertised, and ads for unproven remedies and for unaccredited courses that can lead to questionable nutrition credentials appear regularly in the classified section.

Although water fluoridation is an extremely valuable and real way to use dietary supplementation to prevent disease, Rodale Press has never recommended it. Before founder J.I. Rodale's death in 1971, almost every issue of *Prevention* contained a vicious attack on fluoridation. Rodale Press has also engaged in unfair criticisms of pesticides and other agricultural chemicals.

In 1980, an article by Walt Harrington, top investigative reporter for the *Allentown Call-Chronicle*, revealed that *Prevention's* executive editor, Mark Bricklin,

knew that fluoride prevents tooth decay. When asked why the magazine has never admitted this to its readers, Bricklin replied, "It would only confuse them." Harrington also surveyed four medical school professors who had been quoted in *Prevention* articles. All four indicated that although they had been quoted accurately, the articles were slanted to promote unnecessary supplements.

In 1984 the American Council on Science and Health evaluated nutrition articles in 30 popular magazines to determine whether they were scientifically sound and factual. *Prevention* came in 28th, with an accuracy rate of 31%—less than half that of the *National Enquirer*. Not long afterward, *Prevention* began asking prominent nutritionists and medical groups to help prepare some of its articles. But its overall thrust remains misleading. Rodale Press also operates the *Prevention* Book Club, many of whose selections promote unscientific and unproven nutrition practices.

The People's Medical Society, located in a separate building near the editorial offices of Rodale Press in Emmaus, Pennsylvania, was officially launched on January 1, 1983. It has been supported through dues payments (now \$15 per year) plus a large initial loan and continuous publicity from Rodale Press. Robert Rodale heads the group's board of directors, which also includes Mark Bricklin and seven other persons presumably handpicked by Rodale. In October 1985, the group reported a membership of 85,000.

It is clear that PMS is very antagonistic to doctors. Most articles in its newsletters imply that doctors cannot be trusted, and cartoons in every issue ridicule medical care as expensive, unnecessary, dangerous or impersonal. Executive Director Charles B. Inlander has informed members that "PMS is determined to put an end to the medical and health-care abuses that have caused millions of Americans to suffer." Inlander reported that during a PMS publicity tour in Florida last year, "we gave out the telephone number of the licens-

ing board. They had more complaints filed during the next two weeks than in the history of the entire department." A doctor who attended the meetings held during the tour told me that PMS representatives made unfounded criticisms of medical care, both local and nationwide.

In June 1984, PMS announced that it had asked all members of Congress their positions on 1) freezing all doctor fees for one year, 2) requiring all doctors to accept Medicare assignment, 3) including all doctor fees in the DRG program, and 4) federal limitation of the number of doctors licensed. PMS members were subsequently asked to promote legislation to force Medicare to round down payments to doctors to the next lower dollar, which supposedly will save Medicare \$45 million per year (out of doctors' pockets).

PMS members have been given forms to report their experiences with doctors so that this information can be computerized and published. In addition, members are being encouraged to form local "Health Action Groups" to carry out projects designed by PMS leaders.

PMS members have also been asked to have their doctors sign a 10-point Code of Practice which would make them eligible for a directory of those who sign. It is not clear, however, how well this project is proceeding. By August 1984, the last time a list was published in the *PMS Newsletter*, there had been only 199 signers nationwide, including 52 chiropractors and 7 naturopaths.

In 1983, during a talk in Allentown, Inlander indicated interest in: 1) gathering data so consumers can compare hospitals on the basis of cesarean section rates, staph infections and medical disciplinary actions; 2) lobbying for state laws to require all doctors to accept Medicare assignment; and 3) filing lawsuits to help alternate practitioners gain more freedom to practice. "You and I," Inlander told the audience, "should control the system."

The group's national office (which Inlander claims is independent from Rodale Press) is orchestrating a "Campaign for Medical Honesty" which, among other things, is generating complaints to Congress, state legislators, hospital administrators and other officials about the difficulties PMS members have encountered with the health care system. The "People's Medical Hour" radio program is being syndicated nationwide. And PMS plans "massive public information campaigns" and lobbying in states whose legislatures are considering proposals to solve the malpractice insurance crisis (in which premiums for some doctors are so high that they cannot afford them or must stop doing "high-risk" procedures).

PMS has also been involved in promoting unscientific nutrition practices. One issue of its newsletter referred readers to the Hearing and Tinnitus Help Association (HTHA), whose executive director, Paul Yanick, Jr., claims to have helped thousands to overcome tinnitus and other forms of hearing and balance disorders through nutrition methods. Contributors to HTHA are

eligible for a discount on the \$200 price of "The Comprehensive Nutrient and Lifestyle Program," which Yanick helped design. According to a flyer distributed by HTHA, this is a computerized analysis that recommends nutrition supplements after analyzing information on dietary and exercise habits, "tissue mineral analysis," tests on pH, urine, stool and saliva, and "over 400 questions relating to changes that take place in your body when a nutrient becomes deficient."

The 48-page PMS report on high blood pressure contains sound advice but also suggests that practitioners of chiropractic, acupressure, homeopathy, herbal therapy and megavitamin therapy may have something to offer: "While many of these practitioners can't produce the years of studies and double-blind experimental results that the medical professionals can, they nonetheless provide treatment—often less invasive, less costly and with fewer side effects than traditional medicine's—that has its adherents and success stories."

Another PMS booklet encourages members to start a People's Medical Library in their community. However, along with such authoritative references as the *AMA Family Medical Guide*, *Cecil's Textbook of Medicine*, *JAMA* and *The New England Journal of Medicine*, the kit recommends *Prevention*, Rodale encyclopedias on natural healing and natural home remedies, and a few other highly questionable publications.

A third PMS booklet, *Deregulating Doctoring*, suggests that medical licensing laws be substantially limited in scope or even repealed. Written by Attorney Lori B. Andrews, vice-chairman of PMS' board of directors, the report suggests that all persons should be free to engage in "such nonhazardous, relatively innocuous activities like advising, giving tips on prevention, making recommendations and offering simple treatments." It recommends that "as a minimum, the definition of the practice of medicine should be restricted so that only inherently dangerous health care activities require a medical license."

PMS also publishes bibliographies on various health topics. Like the People's Medical Library lists, however, these lists include unscientific publications as well as reputable ones. For example, the bibliography on arthritis includes a book which claims that food allergy is a major cause of arthritis; the cancer bibliography includes one boosting macrobiotics [see NF 1:14];

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and the diet and nutrition bibliography includes questionable books—and refers readers to the Academy of Orthomolecular Psychiatry, a Canadian group that promotes megavitamin therapy for mental problems.

PMS has engaged in political activities which, in my opinion, are antagonistic to consumer protection. One was to support legislation to provide funds for research into organic farming [see NF 1:6]. Another was a petition drive against the bills introduced last year by Representative Claude Pepper to increase government efforts against quackery. (One would increase criminal penalties for certain health frauds, another would establish a government strike force against quackery, and the third would create a government clearinghouse for information on unproven methods.)

Early this year Inlander sent members a letter claiming that these bills were “just the first of what may be a long line of legislation to take away our ability to choose the health care we want.” The letter also urged members to return an enclosed petition with a special donation and assured members that PMS would be “doing everything we can to defeat these bills—and to fight for real protections against medical fraud.” Subsequently he announced that “thousands and thousands of PMS members sent letter . . . By early March, we were

receiving calls from members of Congress telling us they would not support this legislation if it were re-introduced. We are told that the volume of mail we generated was enormous. While members of Congress knew that many nontraditional practitioners were opposed to these bills, they had no idea of the enormous opposition of the public. Just three weeks after we asked for your help, Pepper's office told us the bills would not be introduced.”

Properly directed, organizations of medical consumers can accomplish a great deal by educating their members and working constructively to reduce health care costs and increase consumer protection. But in my opinion, the People's Medical Society is doing neither, and will do more harm than good in the long run.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is editor of *Nutrition Forum* Newsletter and co-author/editor of more than 20 books including *Vitamins and “Health” Foods: The Great American Hustle*. In 1984, he received an FDA Commissioner's Special Citation Award for Public Service in combatting nutrition quackery.

Briefs

Health food industry rift? Raw milk enthusiast William Campbell Douglass, M.D. [see NF 2:2], has written a blistering attack on *Prevention* magazine. In the National Health Federation's *Health Freedom News*, he accuses *Prevention* of selling out to the establishment and betraying everything its founder (J.I. Rodale) stood for by accepting ads for nonprescription arthritis medications. Campbell, a member of NHF's board of governors, is also upset that columns by Carlton Fredericks and Jonathan Wright, M.D., no longer appear in the magazine. Unmentioned is the fact the *Prevention* was very critical of raw milk in its March 1985 issue [p. 45].

Total food costs. According to a Food Institute report, Americans spent \$270 billion at food stores and \$124 billion at commercial eating and drinking places last year. The percentage of after-tax income spent for food at home has been dropping slowly and reached a new low of 10.8% in 1984. Comparable figures were 16% in 1960, 13.2% in 1970 and about 12% in 1980. The portion of after-tax income spent for food away from home in 1984 was 4.3%, a figure that has held fairly steady in recent years.

New Sweetener on horizon. Chemists at the Triangle Research Institute have developed a new artificial sweetener, DL-amino-malonyl-isopropyl ester. The new compound—called RTI-001—contains neither phenylalanine nor methanol and is said to have longer shelf life than aspartame. An Institute spokesman said it will probably take five years to complete the necessary safety tests and get FDA approval for marketing.

Final report on salmonella epidemic. The 21-member task force formed to examine possible causes of the salmonella outbreak in Midwestern states last Spring is unable to pinpoint what caused it. At first it was thought that the cause was a faulty pipeline [NF 2:46] at the Hillfarm Dairy in suburban Chicago. However, despite a massive 5-month study, the panel is unable to rule out other possibilities. The outbreak is the largest ever recorded in the United States. *American Medical News* has reported that 16,000 to 18,000 people became ill, thousands of lawsuits were filed by victims and their families, and 6,000 of the suits have already been settled out of court. The dairy—reportedly the largest in the Midwest—shut down voluntarily on April 9th.

More B₆ toxicity reported. Two doctors have reported on 16 patients who developed neurological damage associated with use of high doses of pyridoxine (vitamin B₆). Eight were examined by the doctors and eight were interviewed by telephone after a local television report publicized the problem. All 16 experienced "pins and needles" and numbness of the hands. 13 had difficulty walking, and many experienced various other symptoms. The pyridoxine dosage ranged from 200 mg to 5 grams daily, with most of the victims starting on lower doses and increasing gradually. Symptoms appeared from one month to three years after starting pyridoxine, but always appeared less than one year after reaching the 2 gram/day level. One patient claimed to have been taking only 200 mg daily, but did so for three years. All of the 13 patients who could be reached for questioning 3 to 18 months after stopping the vitamin had improved, but none had recovered completely. Reprints of the report, which appeared in the October 1985 *Neurology* [35:1466-1468], can be obtained from Dr. Gareth J. Parry, UCSF Department of Neurology, M-794, San Francisco, CA 94143.

New report on premenstrual syndrome. The American Council on Science and Health advises women seeking treatment for premenstrual syndrome (PMS) to be skeptical of clinics or practitioners who: 1) claim 100% success rates; 2) claim to be able to diagnose the condition with tests on blood, urine or hair; 3) offer a "secret formula"; 4) charge inordinately high prices; 5) fail to warn about possible risks or side effects of a particular therapy; or 6) fail to inform that treatment with progesterone, other steroid hormones, bromocriptine, spironolactone, pyridoxine (vitamin B₆), vitamin E, evening primrose oil, or magnesium are still experimental and that some of these approaches have not been proven safe. A free copy of the report can be obtained by sending a self-addressed 4"x9½" envelope with 39¢ postage to PMS Report, ACSH, 47 Maple St., Summit, NJ 07901.

Plans brewing to boost herb claims. According to *Natural Foods Merchandiser*, members of the American Herbal Products Association (AHPA) have donated \$20,000 to launch a campaign to "upgrade the regulatory status of herbs at the federal level." A newly formed AHPA committee hopes to: 1) develop a panel of industry experts and FDA scientists to review and revise federal regulations dealing with herbs; 2) have herbs evaluated for possible inclusion in over-the-counter drug products; and 3) eventually establish regulations to permit truthful claims that herbs can prevent disease—a proposal one committee member likened to Kellogg's desire to make preventative claims for its bran products [see NF 2:69].

Free USDA handbook. *Agriculture Policy: A Citizen's Guide to the American Food and Fiber System*, is available free of charge from Christina Mosher Wilson, Office of Public Liaison, Room 102A, U.S. Dept. of Agriculture, Washington, DC 20250. Designed to help consumers understand agricultural policy, the handbook contains a glossary of agricultural and food policy terms and explains farm price and income support programs, domestic food and nutrition programs, soil conservation, the global food system, international trade, and other issues.

Cytotoxic setback. The Health Care Financing Administration (HCFA) of the Department of Health and Human Services, which administers Medicare, has decided that cytotoxic testing will not be a covered service. HCFA proposed this policy in 1983 because the test "lacks an acceptable rationale" and does not correlate with clinical evidence of food allergy [see NF 1:17-19].

More diet and cancer studies. *Medical Tribune* [Sept. 26] reports that the National Cancer Institute is funding 26 clinical trials to assess possible preventive effects of dietary manipulation, retinoids, beta-carotene, vitamins C and E, and trace minerals against various cancers. Included are two studies to see whether diets low in fat (under 20% of calories) can prevent or retard breast cancer and five studies to see whether vitamin supplementation can reduce the incidence of lung cancer in high-risk populations.

Sulfite regulations proposed. On August 9th, the FDA proposed to ban all use of sulfites on raw fruits and vegetables in supermarkets and in restaurants, where the preservatives have been used to keep salad bars looking fresh. In announcing the ban, HHS Secretary Margaret Heckler said that FDA review of the hazards had included consideration of reports of "about 500 alleged adverse reactions including 13 deaths." FDA regulations already require that the presence of sulfites must be noted on the labels of certain finished packaged foods, including lemon juice, dried fruits and vegetables, some canned soups, and some packaged fresh mushrooms. The agency had previously proposed to require sulfite labels on other foods where sulfites were used during processing and are detectable in the final product. This would apply, for example, when sulfites are used as dough conditioners in making cookies. The Bureau of Alcohol, Tobacco and Firearms has proposed that wine and beer containing sulfites also be so labeled. (See NF 2:49-51 for background information.)

Health fraud conferences. A national conference on health fraud, sponsored jointly by the FDA, FTC and Postal Service, was held on September 11th at the National Press Club in Washington, DC. Twenty-one speakers (four of whom were *Nutrition Forum* editors) addressed the audience of more than 350 persons, including journalists, local, state and federal government officials, and representatives of about 100 consumer groups. The FDA plans to host regional health fraud conferences in 18 large cities during the coming year. The national conference will probably become an annual event.

Ad standards. The *Louisville Times and Courier-Journal* and the *St. Petersburg Times* have active programs to protect their readers from misleading advertising. At the National Health Fraud Conference, officials from both papers distributed copies of their published standards and described how they are enforced. Ads with "miraculous" claims are immediately rejected, and other questionable types of health claims may be judged with the help of outside medical consultants. Both papers also try to prevent distribution of misleading ads through inserts. When *Parade Magazine* included a fraudulent 2-page ad for a CCK "fat cure" in its December 24, 1984 issue, the *St. Petersburg Times* published a front-page notice that the ad did not meet the paper's ad standards and contained unsubstantiated claims. The Times Publishing Company also informed *Parade* that it would refuse to distribute future issues that did not comply fully with the paper's advertising standards. Times' advertising manager Andrew Kohut, Jr. said that he had observed no misleading ads in *Parade* since that time.

Alcohol advertising. PROJECT SMART (Stop Marketing Alcohol on Radio and Television), a coalition led by the Center for Science in the Public Interest (CSPI), wants Congress to mandate equal time for health and safety messages to balance the views of drinking created through more than \$900 million spent each year on alcohol advertising. The Fairness in Alcohol Advertising Act (H.R. 2526), introduced by Rep. John Sieberling (D-Ohio), would require broadcasters to match alcoholic commercials with an equivalent amount of information about the consequences of alcohol use. Testifying for the bill before the House Energy and Commerce Subcommittee on Telecommunications, CSPI Director Michael Jacobson presented a 950,000-signature petition and called for elimination of ads that connect drinking with sports or other activities that require a high degree of alertness.

New antiquackery programs. According to a recent FDA press release: 1) the FDA has contracted with Louis Harris and Associates to undertake a comprehensive poll on health fraud; 2) the U.S. Council of Better Business and the FDA will distribute a new consumer publication about weight loss frauds; 3) the Association of Food and Drug Officials (an organization of state officials) is proposing state surveillance and action teams to deter the distribution of health fraud products; 4) the National Association of Consumer Agency Administrators plans to develop a demonstration project for the exchange of health fraud resources; 5) the United States Pharmacopeia plans to examine unproven remedies for cancer in a program similar to their system for developing information about recognized medications; 6) anti-quackery ads developed through joint efforts of the FDA and the Pharmaceutical Advertising Council will soon be distributed to the media; and 7) the FDA is developing a speakers bureau to make experts on health frauds available for meetings, workshops and talk shows.

Aspartame suit loses another round. A 3-member panel of the U.S. Court of Appeals has ruled that the FDA was not obligated to hold public hearings on complaints that aspartame causes health problems. The Community Nutrition Institute, the Arizona Dietetic Association and others had asked the appeals court to order such hearings and to ban use of the sweetener until further tests were performed. Aspartame now has FDA approval as a sweetener in diet soft drinks and chewing gum and for tabletop use. Senator Howard Metzenbaum (D-OH), who filed a friend-of-the-court brief supporting CNI's suit, has introduced legislation for a moratorium on expansion of aspartame's use. (See NF 1:2-4, 2:16 and 2:63 for background information.)

Future GNC gimmick? According to the July 8th Business Week, General Nutrition's new chief executive Jerry D. Horn wants to portray GNC as "the voice of authority" on health and nutrition. Toward this end, the company is testing a computer terminal for answering questions about nutrition in stores.

More supermarkets carry "natural" foods. *Natural Foods Merchandiser* reports that over 3,000 supermarkets now have "natural foods" sections. Among the ten largest chains, the number has doubled from 1,200 two years ago to 2,400 today. K-mart reportedly expects to have large "vitamin-oriented units" in about 1,200 of its stores by the end of 1985. Safeway has 950 units now with total annual sales of \$150 million and expects to reach 1,000 units by the end of the year.

BOOK REVIEW

Title: Hypoglycemia, Fact or Fad? (1985)

Author: Lynn J. Bennion, M.D.

Publisher: Crown Publishers, Inc., One Park Avenue, New York, NY 10016

Price: \$12.95

Reviewed by: Harvey L. Katzeff, M.D., and Barbara S. Katzeff, M.D.

Almost everyone knows people who believe they have symptoms indicative of hypoglycemia (low blood sugar), and virtually every practicing dietitian, nutritionist and physician encounters many of them—often with frustrating results. At last, help has arrived! *Hypoglycemia: Fact or Fad?* is by far the clearest and most reliable discussion of this subject ever published. The author, an endocrinologist with a special interest in diabetes and metabolism, reveals why most people who think they have this condition are mistaken. He tells when to suspect its presence and how this possibility should be properly investigated. And he explains why the commonly used glucose tolerance test is not usually reliable for diagnosing hypoglycemia.

Hypoglycemia: Fact or Fad? is a model of organization, making it a delight to read. Each chapter ends with a summary of salient points and an introduction to the following chapter. Medical terms are explained simply in the text and also in a glossary. Concepts are developed from easily understood basics so that a scientific background is not needed to understand the material presented. Yet there is enough detail for the book to be of great value to health professionals.

Dr. Bennion does not burden the reader by listing every symptom that can be seen with low blood sugar. Instead, he stresses that its symptoms are nonspecific and can be produced by many other conditions. The diagnosis of hypoglycemia cannot be made on symptoms alone but by proving that the blood sugar is abnormally low while symptoms are occurring. Moreover, symptoms caused by hypoglycemia should disappear rapidly when the blood sugar is raised.

It is likely that laypersons reading this book will be seeking to learn whether they themselves have hypoglycemia. For these individuals, the chapter on "How to Find Out Whether You Have Hypoglycemia" should provide the answer. Indeed, someone in a hurry might find the answer just by reading the excellent summary at the chapter's end.

Just as a major problem with self-diagnosis of hypoglycemia by laypersons is related to its nonspecific symptoms, misdiagnosis by medical professionals is due to misinterpretation of the oral glucose tolerance test (OGTT). This test involves the administration of a large dose of glucose followed by measurements of blood glucose at intervals over the next 3 to 5 hours. In the chapter, "Beware the Glucose Tolerance Test," Dr. Bennion characterizes the test as a "six-hour bleeding session at a clinical laboratory where white-clad leeches sweeten the experience with an initial bottle of glucose syrup." He makes a strong scientific argument that the OGTT is at best useless and at worst misleading for evaluating most cases of suspected hypoglycemia.

Dr. Bennion has three main criticisms of the test: 1) injection of 50-100 grams of almost pure concentrated sugar is an abnormal situation and is unrelated to the circumstances of most patients' symptoms; 2) during the unnatural stress of the OGTT, up to 25% of normal individuals will develop low blood sugar; and 3) the OGTT is not reproducible, meaning that results may vary widely when the test is done repeatedly.

In addition to information on hypoglycemia, the book contains some excellent advice on consumer health strategy:

1. Reliable research is likely to be published first in carefully edited, scientific or medical journals where it can be duplicated and corrected rather than in such publications as the *National Enquirer*.

2. Intelligent treatment requires intelligent diagnosis.

3. Many people with symptoms are relieved when given a socially acceptable diagnosis which appears to be easily and painlessly treatable. But before you take the treatment, make sure you have the disease.

4. Avail yourself of the advantages of modern medicine.

5. When a doctor asks about your symptoms, it is more important to describe what you have been experiencing than it is to explain your theories of what is causing your symptoms.

6. Take steps to promote your general health.

Since most people who read this book will not actually have hypoglycemia, it would have been helpful if more attention had been given to common factors which may cause symptoms similar to those of hypoglycemia, particularly the ingestion of too much caffeine. Regarding the rare causes of hypoglycemia, there may be more information than necessary. However, these criticisms are minor and do not detract from the book's overall high quality.

Dr. Harvey Katzeff is an assistant professor of medicine at New York Hospital/Cornell University Medical College. His wife, Barbara, is an instructor in geriatrics at Mount Sinai School of Medicine in New York City.

COMING SOON

**Suits Aimed At
Anti-Quackery Laws
Index To Volumes 1, 2.**

CLASS ACTION SUIT AGAINST HERBALIFE

Seven Florida residents filed suit on behalf of themselves and "all others similarly situated" against Herbalife International, Mark Hughes (Herbalife's chief executive officer), and Lawrence Thompson (company vice president). Allegations in the suit include:

- "As a direct consequence of using the Herbalife products as advertised and directed," all seven plaintiffs "experienced . . . great mental and physical pain and injuries, including emotional trauma, depression, anxiety, rashes and skin irritation, headaches, nausea and diarrhea."

- Several of the plaintiffs experienced painful swelling of the breasts, severe vomiting, painful menstrual periods and rectal bleeding.

- One plaintiff had two cardiac arrests and was left with permanent cardiovascular damage.

- Herbalife failed to properly and adequately test and/or evaluate its products and should have stopped marketing certain ones when adverse effects were first reported.

- The company made false claims about the efficacy of its products and failed to properly instruct consumers and sales representatives in their use.

- Herbalife failed to warn of possible adverse effects of its products and "deliberately taught" distributors to deceive potential customers by falsely claiming that the products were safe.

- The company didn't put anything in writing as to the safety or effectiveness of its products because "if we put it in writing we might be violating federal law. We can't put it in writing because the government would come back to us and say 'prove it.' When you are doing something live, you can say anything you want under freedom of speech."

- The company instructed distributors: "No matter what you are asked about the products, do not answer directly. Just say, 'I don't know about that. The only thing I can tell you is that it worked for me (or some other testimonial) and that it will work for you too. If it doesn't, I will give you your money back.'"

The suit, filed on July 15th by attorney Ellis Rubin of Miami, Florida, asks for a total of \$4.5 million in compensatory damages and \$9 million in punitive damages.

INJUNCTION AGAINST RAW MILK CLAIMS

On September 23, a California Superior Court judge issued a preliminary injunction ordering Alta-Dena Certified Dairy to stop advertising its raw milk as safe and suitable for infants and invalids without also warning consumers that raw milk may contain dangerous bacteria that can cause disease and even death to babies, young children, pregnant women, the elderly, and other vulnerable groups. The injunction also directed the dairy to stop circulating an ad recommending that infants be fed a mixture of raw milk and honey.

The lawsuit, filed August 27 by Consumers Union, the California Gray Panthers, and the American Public Health Association, charged Alta-Dena with false and deceptive advertising of its raw milk products. The disputed ads claim that the dairy's raw milk is the "safest, purest, most wholesome milk money can buy" and

is "the ideal formula-milk for babies" as well as "a basic food for invalids." The suit charged that, in fact, Alta-Dena's raw milk products "frequently contain harmful bacteria, including *Salmonella dublin*, a virulent form of bacteria that can cause serious illness and even death to the very young, the very old, and the infirm."

The judge's order will remain until the court issues a final decision after trial, which is expected to take place in about six months. An editorial in the *Oakland Tribune* called the order "well advised" and urged the California legislature to make health warnings mandatory for all raw milk products. Other press reports indicate that publicity in the case may have caused a sharp drop in sales and that the dairy intends to appeal the preliminary injunction to a higher court.

CARNIVORA

Varro E. Tyler, Ph.D.

The desire of seriously ill people for hope rather than facts leads every few years to intensive promotion and temporary widespread popularity of a new quack remedy for cancer. In the 1950s, Dr. Andrew Ivy advocated Krebiozen with such enthusiasm that it became almost a household word. Laetrile, developed by Dr. Ernst T. Krebs, Sr., in the 1920s and nearly forgotten, blazed like a brush fire through the 1970s. Today, Carnivora, a remedy promoted by a German country doctor named Helmut Keller, is taking Western Europe by storm, and inquiries concerning it have become increasingly frequent in the United States.

Carnivora is a 30% (60-proof) alcoholic extract of an insectivorous plant, *Dionaea muscipula* Ellis, commonly known as Venus's-flytrap. Probably because of its relative scarcity, the plant had not previously been used as a therapeutic agent or herbal remedy. However, just a few years ago, Dr. Keller began using an extract to treat cancer patients and obtained some seemingly favorable results. Recently, the widely read German newspaper *Bild-Zeitung*—describable in American terms as a daily *National Enquirer*—featured Dr. Keller and his Carnivora results in an article headlined "New Anticancer Drug Frees 34 Patients from Tumors." The article implied the drug was also the secret plant juice that supposedly cured American film and stage star Yul Brynner of lung cancer during some visits to Germany. (Brynner, who at one time smoked five packs of cigarettes per day, died last month.) All of these factors have combined to stimulate a demand for Carnivora treatment that is unparalleled in recent years.

Germany's most notable cancer specialists have been unable to stop or even diminish this tidal wave of interest. Professor Rolf Sauer of the University Clinic in Erlangen noted that the drug "is not recommended at this time." Professor Dietrich Schmähl of the German Cancer Research Center called it a "phantom drug." The most critical comments were those of Professor Gerhard Nagel, representing the German Cancer Society, who characterized claims for the product as a "lie."

Due in part to the scarcity of Venus's-flytrap plants, treatment with Carnivora is expensive. One liter

of the extract costs more than 3000 DM (approximately \$1,200), and six weeks of treatment costs more than 15,000 DM (\$6,000). One critic in Berlin has characterized the extract as "the most expensive herb-flavored liqueur in Germany."

Dr. Keller's initial studies with Carnivora involved 195 cancer patients over a five-year period. Of these, 34 experienced a remission, 14 had complete disappearance of tumors, 84 patients found their tumors had stopped growing, and 63 patients died. The study was labeled by Professor Gerd Schönhöfer of the Bremen Central Hospital as "simply a description of the fate of the cancer patients." Because the patients were also treated with radiation, chemotherapy and/or surgery in addition to Carnivora, it is impossible to make any scientific judgment regarding the effectiveness of Carnivora alone from this report.

The fact that no satisfactory evidence exists has not prevented so many patients flocking to Nordhalben, the small town in Germany where Dr. Keller has his practice, that it has been necessary to erect a sign at the city limits directing them to his clinic. And according to the German weekly news magazine *Der Spiegel*, the mayor of Nordhalben is dreaming of erecting a magnificent cancer clinic that would turn the previously godforsaken town into a German Lourdes.

It seems just a question of time before news of Carnivora reaches herbal medicine producers in the United States. When that happens, we can only hope that the proper authorities will not only act to protect cancer patients from being victimized but will also try to prevent extinction of the very limited native stand of Venus's-flytrap in the coastal bogs of North and South Carolina. It would be a shame to sacrifice this intriguing but delicate plant on the altar of medical quackery.

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs.

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SUITS AIMED AT ANTIQUACKERY LAWS

Grace Monaco, J.D.
Rebecca Burke, J.D.

Despite an adverse ruling by the U.S. Supreme Court six years ago, 82-year-old federal judge Luther Bohanon is still permitting individuals to evade federal drug laws by importing "personal supplies" of laetrile provided they obtain a physician's affidavit that they have had cancer and understand that the FDA disapproves the drug's use. Bohanon's policy was a response to a class action suit brought against the FDA by Glenn Rutherford, a Kansas seed salesman who claims that laetrile cured him of cancer and is keeping him alive. In March 1984, Bohanon finally acceded to an order from the federal appeals court for the 10th circuit to dissolve the injunction supporting the affidavit system. But in May 1984, he restored the injunction after Rutherford's attorney filed an amended complaint based on a claim that laetrile can reduce pain.

In July 1984, a group called the Committee for Freedom of Choice in Medicine requested permission to intervene in the Rutherford suit on behalf of "physicians who practice medicine, using the systems of Eclectic, Homeopathic or Holistic Schools of medicine rather than the system of 'orthodox' Allopathic School of Medicine." The action also sought to block interference with manufacturers, sellers and distributors of supplies to unorthodox physicians, to cancer patients, and to others suffering from "chronic degenerative disease."

The intervening group (formerly called the Committee for Freedom of Choice in Cancer Therapy) was led by Robert Bradford, who in 1977 was convicted and fined \$40,000 for conspiring to smuggle laetrile into the United States. Bradford is president and administrator of American Biologics Hospital in Tijuana, Mexico, which offers a broad spectrum of unorthodox treatments, including laetrile. He also directs the Bradford Research Institute, which, according to its literature, "is able to 'rescue' for therapeutic use overlooked, abandoned or thwarted metabolic/nutritional disease management approaches discovered in the United States but not allowed to be developed because of an interlock of stifling political, economic and bureaucratic interests."

The Bradford Institute, the administrative office of American Biologics, and one office of the Committee

for Freedom of Choice in Medicine, are all located at 111 Ellis Street, Suite 300, San Francisco, CA 94102. American Biologics sells a wide variety of vitamin products, enzymes, "glandulars" and specialty products (including laetrile and DMSO) to professionals and health food stores, while Choice Metabolics (same address) offers many of the same products by mail to the public.

Another intervener in the Rutherford case was Bruce W. Halstead, M.D., a California physician, one of five persons charged by state authorities with conspiracy and grand theft for marketing an herbal tea called ADS as a cancer treatment [see NF 1:5]. (He was found guilty in October 1985 and is awaiting sentencing.) Other individuals involved in the action included John Richardson, M.D., Michael Gerber, M.D., and several other physicians whose licenses had been revoked by their state medical boards. (Richardson and Gerber are now practicing as "homeopaths" in Nevada, which in 1983 passed a homeopathic licensing act and set up a separate board to license homeopaths.) The interveners' concept of "chronic degenerative disease" was quite broad, and their action appeared to be intended to virtually end enforcement of FDA laws against use of unproven remedies such as DMSO, chelation therapy, megavitamin therapy, and other "nutrition" therapies.

The defendants in the suit were Health and Human Services Secretary Margaret M. Heckler, FDA Commissioner Frank E. Young, M.D., Ph.D., and their agents. Listed as "co-conspirators" were the American Medical Association, state and county medical societies, several state boards of medical licensure, the American Cancer Society, the American Heart Association, the Cystic Fibrosis Foundation, the Multiple Sclerosis Foundation, the National Council Against Health Fraud (which the interveners call "an AMA front organization"), the U.S. Postal Service, the Internal Revenue Service, the U.S. Veterans Administration, Dr. Victor Herbert and others claimed to be conspiring to restrict the practices of the interveners. The suit sought a court order restraining all "anticompetitive activities" of these parties, including law enforcement activities, license revocations, and public criticism of unorthodox practices.

Surprisingly, Bradford's efforts to expand the

Rutherford case to include therapies other than laetrile was opposed by Glenn Rutherford's attorneys as well as the National Health Federation, a health food industry group that characteristically supports legal actions to protect unproven methods. (Rutherford's chief attorney and several of the intervenors are past or present NHF board members.) The suit was withdrawn in September 1984 and has not been refiled as an independent action.

Mrs. Monaco, a partner of White, Fine and Verville, of Washington, D.C., specializes in health law as it applies to unproven methods of medical management. She is also a founder and current board chairman of the Candlelighters Childhood Cancer Foundation, an international peer support group for parents of children with cancer. Ms. Burke is an associate of White, Fine and Verville.

BRIEFS

Safety tips for roasting turkeys. The American Council on Science and Health recommends the following precautions to minimize the occurrence of food poisoning: 1) Frozen turkeys should be prevented from getting too warm while thawing. Thawing overnight in a refrigerator is a good technique. 2) Stuffing a turkey the night before cooking gives bacteria from the raw meat an opportunity to grow in the stuffing. It is safest to stuff immediately before roasting. Stuffing can be prepared a day in advance and stored in the refrigerator. 3) Stuffing should reach a temperature of at least 165°F during roasting. Heat penetrates most easily if stuffing is not packed tightly. 4) It is not safe to partially cook a turkey on one day and complete the cooking the next day.

Fast-food report. The American Council on Science and Health believes that individuals can incorporate "fast foods" into a prudent and balanced diet by varying their selections, choosing menus that contribute to nutrient needs, and choosing meals of appropriate calorie content. The third (1985) edition of its report, *Fast Food and the American Diet*, summarizes the nutrient content of more than 100 popular items, gives tips on selection, and provides the addresses of major chains for those who wish to obtain more information about ingredients. A free copy can be obtained by sending a self-addressed 4"x9½" envelope stamped with 39¢ postage to Fast Food Report, ACSH, 47 Maple St., Summit, NJ 07901.

Soviets to attack health problems. According to *Medical Tribune*, Soviet leaders have launched a campaign against obesity, smoking and excessive drinking. During the past 20 years, life expectancy in the Soviet Union has fallen from 66 to 62, cardiovascular mortality has doubled, and the alcoholism rate has been high.

Important new book. *The Smoke-free Workplace*, by William Weis, Ph.D., and Bruce Miller [Prometheus Books, 1985] provides a step-by-step guide to employers and employees interested in improving their work environment. It also gives tips for dealing with drifting smoke in restaurants and other public places. Copies are available for \$10 each plus \$1 postage per order from the Lehigh Valley Committee Against Health Fraud, Inc., P.O. Box 1747, Allentown, PA 18105.

Antiquackery publications. William Jarvis, Ph.D., president of the National Council on Health Fraud, has written two 32-page booklets useful to health educators and laypersons. *Food: Facts & Fallacies, A-Z* contains capsule analyses of more than 100 food myths and "health food" products. *Quackery & You* summarizes facts and myths about common forms of quackery. Both are available for \$1 per booklet plus \$1 postage per order from LVCAHF Inc., P.O. Box 1747, Allentown, PA 18105.

Fluoridation pamphlet. Free single copies of the American Academy of Pediatrics' new 10-page pamphlet, *Fluoride and Dental Health*, are available on request from Dental Disease Prevention Activity, Center for Prevention Services, Centers for Disease Control, Atlanta, GA 30333.

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Fluoridation may prevent osteoporosis. A Finnish study has found that elderly individuals sustain fewer hip fractures (an indicator of bone fragility) in Kuopio, which has been fluoridated since 1959, than in Jyväskylä, which has only traces of fluoride in its water [*Lancet* Aug. 24, 1985]. The lower incidence in Kuopio suggests that fluoride is an essential mineral for strengthening bone tissue and that the incidence of fractures due to osteoporosis can be reduced by community water fluoridation at 1 mg/liter. Exposure to this level varied from 7 to 17 years in the population studied, apparently long enough for a beneficial effect. Previous epidemiological studies have found no beneficial effect on bone fragility of fluoridation at similar levels, but the Finnish study appears to be better designed.

Supplement promotion. According to a recent ad in *Health Foods Retailing*: "Informative books mean more profit to you. When you sell Larchmont Books you are informing your customers about the products you sell. Studies show that for every \$1 in health food book sales there is an estimated \$200-\$500 return on vitamin and supplement sales. It's no coincidence . . . information sells products!" Larchmont's line, composed of paperbacks retailing for \$1.25 to \$3.95, includes *Megavitamin Therapy, Improving Your Health with Vitamin E, All You Should Know about Health Foods* and *The Compleat Herbal*.

Pennsylvania outlaws cytotoxic testing. Reacting to false advertising claims that cytotoxic testing can reveal an allergic basis for a long list of medical problems, the Pennsylvania Department of Health's Bureau of Laboratories ordered such testing ended within the state by July 23, 1985. The action was taken after the Health Department determined that "the cytotoxic test is not an accepted procedure since it is an unproven diagnostic test lacking an acceptable scientific rationale, specificity, sensitivity and evidence of clinical effectiveness." The Department also concluded: "Cytotoxic testing poses a dangerous threat to the health and safety of individuals, especially those with serious health problems who may postpone seeking proper medical attention based upon the unsubstantiated claims made for cytotoxic testing."

Mountain climbers to attack hunger. A 15-person group led by three physicians plans to ascend 19,340 feet to the summit of Mt. Kilimanjaro, Africa's highest mountain, to symbolize their belief that resources exist to end world hunger—said to kill 25,000 children daily. Money raised—expected to exceed \$100,000—will be given to The Hunger Project and Save the Children.

Gift food precautions. Americans now spend about \$1 billion a year for mail-order foods, with 75% of sales taking place between Thanksgiving and Christmas. Food marketers say yuppies are the prime purchasers of gift foods from some 400 catalogues now available. According to an article in USDA's *Food News for Consumers* [2(4):6-9], mail-order foods enjoy an excellent safety record. However, a product should be rejected if any of the following occur: 1) bad odor; 2) food marked "keep refrigerated" doesn't arrive cold; 3) food supposed to be frozen on arrival is not; or 4) food shipped at room temperature arrives in a broken container. Because of the risk of botulism, Agriculture Department experts suggest that suspected food should never be tasted. Instead, refrigerate it immediately—preferably in the original container—and contact appropriate government officials who may wish to inspect it to see whether a product recall is necessary. Meat or poultry problems should be reported through USDA's hotline (1-800-535-4555, or 447-3333 in the Washington, D.C. area). Problems with other foods should be reported to the nearest FDA office, whose number will be found in the telephone directory under U.S. Government, Dept. of Health and Human Services.

Vitamin E and lumpy breasts. Two double-blind studies have found no significant benefit from administering vitamin E to women with mammary dysplasia (commonly called benign fibrocystic disease of the breast). In one study, Robert S. London, M.D., and colleagues at Sinai Hospital of Baltimore treated 128 patients for two months with either a placebo or 150, 300 or 600 IU of vitamin E. Although slightly more than half the patients improved during the trial period, those receiving vitamin E did no better than those receiving the placebo [*Obstetrics & Gynecology* 65:104-106, 1985]. In the other study by Virginia Ernster, Ph.D., and colleagues at the University of California in San Francisco, 62 women took either 600 IU of vitamin E or a placebo for 2½ months [*Surgery* 97:490-494, 1985]. These studies contradict earlier ones that had promising results but were smaller and not done double-blind. Hoffmann-La Roche provided financial support for both studies.

COMING SOON
What Happened to the RDAs?
Aluminum: Facts, Fears and Fantasies
The Gerson Clinic
"Strengthening the Immune System"
—A Growing Fad

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WHAT HAPPENED TO THE 1985 RDA'S

Stephen Barrett, M.D.

On October 7, 1985, claiming that too many changes had been proposed, Frank Press, Ph.D., president of the National Academy of Sciences (NAS), cancelled publication of the 10th Edition of the Recommended Dietary Allowances (RDAs). The action followed controversy between the Academy's Committee on Dietary Allowances, which had drafted the report, some members of the NAS Food and Nutrition Board, and outside reviewers.

Speaking a few days later at the American Dietetic Association's annual meeting in New Orleans, Henry R. Kamin, Ph.D., chairman of the RDA Committee, indicated that many important refinements in the RDA tables had been proposed. "This is a sad day," he concluded. "There is no scientific justification for the rejection of our report, which was put together by a superb and distinguished committee which worked harder and more carefully than any of its predecessors."

The proposed report—one version of which had been leaked to the press—had called for lower levels for vitamins A, C and B₆, magnesium, iron and zinc, and higher amounts of calcium for women. The Committee had also wanted to redefine the RDAs from the amounts needed "to meet the known nutritional needs of practically all healthy persons" to the amounts needed "to protect practically all healthy persons from nutritional deficiencies."

According to Dr. Kamin, the dispute really centered on vitamins A and C. The Committee had proposed lowering the RDAs for vitamin A for men from 1,000 retinol equivalents to 800 and for women from 800 to 700. (A retinol equivalent equals 5 International Units.) For vitamin C, the values would have been lowered from 60 mg for men and women and 35 mg for infants to 40 mg for men, 30 mg for women, and 25 mg for infants. "Correspondence between me and Dr. Press makes clear that all other issues had . . . been resolved, and that publication would have proceeded had our Committee agreed to the older [1980] figures for A and C preferred by the Food and Nutrition Board," Kamin said

in his American Dietetic Association talk. He also indicated that "despite repeated requests for scientific justification for this preference, it was not forthcoming."

The work of the RDA Committee was funded under a contract between the National Academy of Sciences and the National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases, a branch of the National Institutes of Health (NIH). On October 29th, in a strongly-worded letter to NIH Director James B. Wyngaarden, M.D., Dr. Kamin referred to "the sad history of inept communication and of the inability of the Academy staff and structure to give sophisticated advice in nutrition to a president who is an eminent geophysicist but needs good in-house guidance in this area. It is, of course, the inescapable duty of the NIH to evaluate the competence of the present nutrition establishment within the NAS in the course of making funding decisions."

The RDA Committee's proposed values for vitamins A and C were based primarily on estimates of body reserves and turnover rates for these nutrients. For vitamin A, the proposed value was judged sufficient to maintain blood levels and provide a 3-month reserve. For vitamin C, a reserve pool was selected that would prevent scurvy despite more than a month of very low intake. According to the Committee, no signs of deficiency have ever been reported in individuals with such reserves, and higher reserves are not known to provide increased health benefits. Moreover, the 1980 RDAs for vitamin C were considerably above the average of other nations, and the proposed values for vitamin C for adult men are still higher than those of the World Health Organization/Food and Agricultural Organization (WHO/FAO), Australia, Canada, Finland, the United Kingdom and ten other national and regional groups—all of which recommend 30 mg.

Although an NAS committee on diet, nutrition and cancer had concluded in 1982 that diets rich in vitamins A and C were associated with reduced risk of certain cancers, it did not define "rich" or recommend

specific intake levels of these vitamins. In his ADA talk, Dr. Kamin noted that specific intakes cannot be recommended on the basis of current data, and that recommendations of this sort have nothing to do with the traditional purposes of the RDAs. He also said that claims by the Food Research and Action Center (FRAC) that lowering the RDAs would lead to cutbacks in federal food programs were "irrational and irresponsible." (FRAC is a consumer advocacy group located in Washington, D.C.) Betty B. Peterkin, acting administrator of the U.S. Department of Agriculture's Human Nutrition Information Service, supported Dr. Kamin's viewpoint in a letter to him which noted that past changes in the RDAs have not affected the dollar-related aspects of school lunch or food stamp programs.

In other correspondence, two other Committee members, James Allen Olson, Ph.D., and Robert E. Hodges, M.D., have shed additional light on what happened: "In the formal review of our document by the Academy, many valuable constructive suggestions were made. We are assiduous in incorporating them in our report, but when we didn't, we clearly indicated the reasons for not doing so. While the Academy disagreed with the outcome of our detailed analysis of vitamins A and C, i.e., the RDA values, they provided no criticism of the approach, the data employed, or the logic leading to the final conclusion. No data or scientific publications were cited to show that the selected adequate body pools were, in fact, inappropriate to the nutrient needs or inconsistent with good health. In the absence of such data, the Committee understandably was unwilling to inflate the values artificially . . . The new RDA values are not 'minimums,' as some special interest groups have claimed, are not more narrow in scope, but are defined more precisely and operationally than in the past."

Dr. Press, quoted in *The New York Times* [October 13], said that the RDA committee's focus on prevention of deficiency was neither sufficient nor appropriate because it ignores the role of nutrition in "optimal health" and in preventing cancer and heart disease. He apparently would like to see RDA reports encompass a broader analysis of diet and health. But Dr. Kamin replied that dietary recommendations of that type cannot be expressed in terms of specific nutrient needs and should be addressed by a separate but complementary study. He also expressed concern that the National Academy of Sciences may be "drifting toward pop nutrition."

In *Medical World News* [Nov. 11], Kamin called Press's proposal "incomprehensible to nutrition scientists" and said it might "actually thwart two valid approaches—dietary guidelines and RDAs. Both are equally valid, but if you try to make a hybrid of them, you get chaos." He accused NAS of yielding to pressure from people who think vitamins offer protection against cancer, as well as from those who fear food program cutbacks. In *Family Practice News*, he added that "Everybody wants the RDAs to support their agenda,

and everybody has a different agenda." Victor Herbert, M.D., another member of the RDA Committee, has summed up the controversy as "a clash between nutrition scientists and nutrition politicians," and has called for a congressional investigation.

Early in December, Dr. Wyngaarden notified Dr. Kamin that NIH hopes to form an interagency committee that includes developers and users of the RDAs to determine their future course. Kamin—still hopeful, but not optimistic—replied by asking him to serve as a catalyst for scientific conversations between members of the RDA Committee, the Food and Nutrition Board and other interested scientists. "Opportunities for such discussions have not yet been accorded us," Kamin wrote, "but we continue to hope they can be arranged. I cannot predict the results of such discussions, but I expect them to provide a satisfactory result. Should this expectation be fulfilled, publication could proceed forthwith."

If not, since the draft report belongs to the RDA Committee, it will undoubtedly be published privately.

FDA ACTION PLAN ANNOUNCED

The U.S. Food and Drug Administration has released a 10-point plan to help chart the agency's future regulatory course. The plan, based on meetings with representatives of health professions, consumers, and the drug industry, stresses public education and voluntary compliance by industry. Four parts of the plan are related to food or nutrition:

- The agency plans to strengthen its postmarketing surveillance capability by implementing a program to analyze adverse reaction reports associated with foods, food additives and food ingredients.
- Efforts will continue toward modernizing food safety laws, probably including reform of the "zero-cancer" clause of the Delaney Amendment.
- National nutrition concerns will continue to receive attention. These include: infant formulas, weight control products, food fortification, and food labeling that concerns the relationship between diet and good health.
- The FDA plans to bring about "expanded national awareness" of health frauds by coordinating its educational efforts with those of state, local and other federal agencies, national consumer groups, health professional groups, and industry organizations. Enforcement against health frauds will also be increased, with emphasis aimed at "high-visibility or widespread fraudulent products that are known to snare large numbers of unknowing consumers." [Editor's note: The educational plan is excellent and is already progressing well. With respect to enforcement, however, it would be far more effective to deter illegal schemes than to crack down after they are well established!]

ALUMINUM: FEARS, FACTS AND FANTASIES

Janet L. Greger, Ph.D.

When aluminum makes the news, it usually gets criticized. In recent years, such headlines have appeared as:

"Scientist worries overusing antacids could cause problems"

"Aluminum could be next to join list of hazards"

"Alzheimer's and aluminum: An element of suspicion"

"Dementia from aluminum pots?"

Messages like this are reinforced by certain promoters of stainless steel cookware and by unqualified practitioners who diagnose "aluminum toxicity" through the use of hair analysis.

While some concerns about aluminum are reasonable, others have no factual basis. The problems for consumers—and even some health care professionals—are how to distinguish between facts, unproven hypotheses and fantasies about aluminum, and how to determine a safe level of intake.

During the past 15 years, aluminum has been demonstrated to cause osteodystrophy (a bone disease) and "dialysis dementia," a type of degenerative brain disease that can occur in long-term kidney dialysis patients. High tissue levels of aluminum have also been found in Alzheimer's disease (a progressive brain disorder characterized by memory loss) and in two less common degenerative conditions (amyotrophic lateral sclerosis and parkinsonism-dementia) found among natives of Guam. Some scientists have hypothesized that aluminum may contribute to the development of these diseases. However, despite interest in aluminum metabolism, few investigators have studied the effects of dietary aluminum, and it is not known whether aluminum accumulation is a cause or a result of these problems.

The average adult in the U.S. consumes 20-40 mg of aluminum from foods and water daily, with a probable range from 3-100 mg. Food additives constitute the major dietary source of aluminum for most people. Foods that contain the most aluminum from additives are baked goods processed with chemical leavening agents and some processed cheeses. Approximately 4.0 million pounds of aluminum were used in food additives in the United States in 1982. Assuming that not all was consumed, the average adult intake was less than 20 mg per day. However, individuals vary greatly in their use of aluminum-containing food additives. In 1979 it was estimated that 5% of adult Americans consumed 95 mg of aluminum daily from food additives.¹

Most foodstuffs contain small amounts of aluminum, but a few vegetable products such as herbs and tea leaves contain larger concentrations (over 100 mg/kg).²

An average cup of tea contains 1-4 mg. Most Americans probably consume only 2-10 mg of aluminum from natural sources daily.

Many foods stored or cooked in aluminum pans, trays or foil absorb small amounts of aluminum.³⁻⁵ Most accumulate less than 0.2 mg/100g of food during preparation and storage, but tomato sauces cooked for several hours in aluminum pans can accumulate 3-6 mg aluminum in a 100-gram serving.

The amount of aluminum in the diet is small compared to the amount of aluminum in some antacids, buffered pain relievers, diarrhea remedies, and at least one anti-ulcer drug. It has been estimated that antacid users ingest 840 to 5,000 mg, while users of buffered pain-relievers take in 126 to 728 mg daily.⁶ The long-term consequences of ingesting drugs with high levels of aluminum are not known. One reason is that it is difficult to measure aluminum in biological samples such as body tissues. We do know that aluminum is absorbed very poorly by normal healthy adults, but infants may absorb aluminum somewhat more efficiently. Although humans excrete little aluminum in urine (i.e., 100 µg/day), this appears to be the body's major excretory route for it.⁷

Rats fed even moderate amounts of aluminum (0.3-1 mg per gram of food) will accumulate aluminum in some tissues, especially bone. (These levels of dietary aluminum would be comparable to an adult man consuming 180-600 mg aluminum daily.) However, a number of studies have found that the accumulation is not directly proportional to intake levels or duration of exposure.⁸⁻¹¹

Tissue accumulation of aluminum also occurs in several disease states. Some patients with kidney failure (uremia) undergoing dialysis, especially those who develop dementia and/or renal osteodystrophy, have accumulated aluminum in various tissues from dialysis fluids and aluminum-containing antacids used to reduce absorptions of phosphates.¹² Recently, two children with uremia appeared to have received excessive exposure to aluminum from formula.¹³

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There is considerable controversy about the significance of elevated tissue levels of aluminum in the brains of patients with Alzheimer's disease.^{13,14} Brain aluminum levels are generally higher in elderly adults than in young adults, regardless of mental state. However, blood aluminum levels are not elevated in patients with Alzheimer's disease and thus cannot be used as a diagnostic tool.¹⁵

Aluminum toxicity is believed to be part of the etiology of amyotrophic lateral sclerosis/parkinsonism-dementia of Guam. It has been hypothesized that the excess accumulation of aluminum is facilitated by inadequate intakes of calcium and magnesium, but this has not been proven.¹⁶

The mechanisms by which aluminum exerts toxic effects are poorly understood. Aluminum can directly interact with nucleic acids and cell membranes and hence exert direct toxic effects. Aluminum can also affect the metabolism of several minerals.

There is no doubt that drug-level doses of aluminum can depress phosphorus and fluoride absorption and eventually lower blood phosphorus levels.^{3,17} That is why aluminum-containing phosphate binders are used to remove excess phosphorus from the blood of uremic patients. The effect of moderate doses of aluminum on phosphorus metabolism is not clear. Although adding 120 mg/day of aluminum to the diets of young men initially depressed their absorption of phosphorus, the subjects appeared to adjust so that no such effect could be observed after two weeks.¹⁸ Oral doses of aluminum have been found to depress the absorption and/or tissue levels of calcium, iron and copper in some studies but not in others. These differences reflect differences in dietary composition, aluminum dosage, and age and health status of the experimental subjects.

At this time it appears that the amounts of aluminum Americans ingest from food are too low to cause significant changes in the metabolism of healthy adults. Thus, consumer concerns about cooking with aluminum utensils and drinking tea seem unwarranted. However, the long-term use of drug-level doses of aluminum needs further evaluation. Use of aluminum-containing drug products by sensitive individuals, such as those with impaired kidney function, the elderly, and very-low-birth-weight infants, is of particular concern.

Dr. Greger is a professor in the Nutritional Sciences Department of the University of Wisconsin-Madison.

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GENETIC ENGINEERING HAS GREAT POTENTIAL FOR AGRICULTURE

Kathleen A. Meister, M.S.

Genetic engineering may soon have profound impact on food production. Among the many hoped-for advances from this new technology are: cereal grains that make their own fertilizer; farm animals that mature more quickly; plants that can tolerate cold, heat, drought, and salty soil; and crops that resist insects and diseases so that pesticides are not needed to produce them.

According to a 1983 report by L. William Teweles & Company, a plant science consulting firm, innovations in agricultural genetics should add \$5 billion a year to the value of major crops within 10 years and \$20 billion in 20 years. The company predicts that in 25 years, world food production could rise by 5-10% as a result of biotechnology. Advanced Genetic Sciences, a pioneering firm, projects a \$2-4 billion market for bio-engineered agricultural products by 1990.

Even if such projections turn out to be overly optimistic, the potential benefits of genetic engineering to agriculture are unquestionably extensive. But a few individuals are worried about the release of genetically modified organisms into the outdoor environment.

Most of the agricultural genetic innovations that will soon be ready for field testing involve microorganisms. One of the best known is "ice minus," a microorganism designed by scientists from the University of California at Berkeley, which may help to protect crops from frost damage. Another genetic innovation is a strain of the common bacterium *Pseudomonas fluorescens*, modified by Monsanto scientists to produce a pesticide that kills pests that invade corn plants through the roots. Other proposed experiments involve *Rhizobium*, a microorganism which lives on the roots of beans and related plants and enables them to produce their own nitrogen fertilizer from nitrogen in the air.

A few current projects involve genetic modification of plants rather than microorganisms. For instance, a California firm called Calgene is trying to make crop plants genetically resistant to a new type of herbicide that is effective in low doses and is much less toxic to animals and people than conventional herbicides are. These herbicides kill crops as effectively as they kill weeds. However, if crops could be made resistant to the new herbicides, they could be substituted for less potent ones.

People worried about the release of genetically engineered organisms into the environment are concerned about the possibility of creating new weeds, pests, or disease germs that might be difficult to control. But most experts believe that genetically engineered organisms should be judged no differently from conventionally altered organisms. In other words, each new

product should be considered on the basis of its properties rather than the process used to produce it.

Actually, many of the proposed applications of genetic engineering resemble those produced by traditional methods. During the past 40 years, plants have been bred for resistance to a wide variety of substances, organisms, and environmental extremes. None of these experiments was conducted under special quarantine precautions, because long experience has taught plant breeders that no such precautions are needed. And more than a dozen naturally occurring or conventionally modified bacteria have been licensed for years for various commercial applications.

Ralph W. F. Hardy and David J. Glass of Bio Technica International, a biotechnology firm, point out in a recent article in *Issues in Science and Technology* that genetic engineers introduce a single, specific change into an organism, while conventional plant breeders introduce random, unknown changes and may inadvertently introduce more than one change at a time. Noting that "no major negative health or environmental effects have resulted from the traditional breeding and selection of plants, animals, and microorganisms," they predict that the safety record for the newer techniques will be at least as good.

When work in genetic engineering began in the 1970s, many scientists urged extreme caution because of hypothesized hazards. Most work in this field began in the kind of highly quarantined laboratories used for experiments on biological warfare. As the technique became better understood, scientists learned that such extreme precautions were unnecessary, and the restrictions on laboratory research with genetically engineered organisms were gradually relaxed. No damage to health or the environment resulted, and it seems likely that field tests under scientific conditions will prove safe also.

Unfortunately, release of genetically modified organisms has been tied up in court by Jeremy Rifkin and other opponets of genetic engineering. (Mr. Rifkin is an activist and author who has opposed several advances in biotechnology.) Field tests of "ice minus" have been delayed for three years through legal actions, and developers of other products are afraid to apply them until the "ice minus" issue is settled.

Mrs. Meister is a research associate of the American Council on Science and Health. Additional information on genetic engineering appears in the Nov/Dec issue of *ACSH News & Views*, available for \$2.00 from the American Council on Science & Health, 1995 Broadway, New York, NY 10023.

BRIEFS

Warning against urine autoinjection. Calling it a "bizarre form of therapy," The Asthma & Allergy Foundation of America has warned that autogenous urine injection has been proved neither effective nor safe and can even produce life-threatening kidney disease in some cases. This method involves injecting patients with small amounts of their own urine which has been sterilized. It is based on the erroneous beliefs that the body rejects food and allergy-causing substances by excreting them in the urine and that reinjection of such substances allows the body to build up immunity to them. This warning is contained in *The Potential for Quackery and Questionable Treatment in Asthma and Allergy Medicine*, a 9-page booklet for laypersons on general concepts of allergy and its treatment. Copies are available for \$1 each or \$20 for 25 from the Foundation at 1302 18th St., N.W., Washington, DC 20036.

Michigan courts restrict chiropractic scope. In *Attorney General v. Beno* (No. 72852), the Michigan Court of Appeals had previously ruled that chiropractors may not perform general physical exams, collect blood, hair and urine samples, take blood pressure, or diagnose ailments unrelated to spinal misalignments. On August 27, 1985, the Michigan Supreme Court overturned part of this decision, ruling that chiropractors may legally prescribe, sell and dispense vitamins and food supplements. However, the lower court's prohibitions of general physical exams and of obtaining body samples for laboratory analysis were upheld. In 1983, Iowa's chiropractors persuaded their state legislature to expand their scope of practice after an unfavorable court ruling had ordered restrictions [see NF 2:5].

Salt and sugar in chewing tobacco. Accordingly to Neil B. Hampson, M.D., of Duke University Medical Center, the amount of sodium in chewing tobacco may pose a threat to individuals who must restrict sodium intake [*New Engl. J. Med.* 312:919-320, 1985]. Dr. Hampson, who measured the sodium content of 16 smokeless tobaccos, found it comparable to such foods as dill pickles and fried bacon. However, the amount absorbed by users has not yet been determined and probably depends upon how much tobacco juice is swallowed rather than spit out. Both sodium and sugar are added during the manufacturing process to enhance the flavor of the tobacco. The case of a diabetic whose blood sugar remained abnormally elevated as a result of chewing tobacco was reported several years ago [*N. Engl. J. Med.* 304:365, 1981].

Doctors in the diet business? Medical Nutrition, Inc., of Englewood, New Jersey, has begun marketing a program under which doctors' offices can offer services resembling those of franchised weight-loss clinics. Under the plan, physicians would sell the company's prepackaged meals to patients and monitor their progress during weekly office visits. The company suggests that patients be charged \$55 per week for food which costs the doctor \$27.50. The weekly visits (\$25 each), which usually can be handled by a nurse, would include weighing, blood pressure check and urinalysis. To help promote the "physician supervised" program, the company provides doctors with advertising aids, a 10-minute videotape for patient education, and buttons, posters and refrigerator magnets to encourage patients to stick to the program. According to the company, the typical marketing target is the woman who is 10 to 25 pounds overweight and is buying diet pills.

Patients asked to help pay for "health freedom". According to an article in the National Health Federation's *Health Freedom News*, some unorthodox practitioners have begun adding the cost of a \$20 NHF membership to their initial bill to enroll new NHF members and "strengthen the principal health freedom organization in the United States fighting for the right of physicians and patients to choose the modalities of health care they believe to be most effective." (NHF vigorously opposes government interference with unproven health practices.)

Meadow Fresh attacked by FTC. The Federal Trade Commission has charged Roy Brog, president of Meadow Fresh Farms, Inc., with making unsubstantiated claims. At the same time, the Commission accepted a consent agreement with Larry Brog, the company's former chief executive officer, that he engaged in the same law violations. The company, based in Salt Lake City, had sold Meadow Fresh White, a powdered, dairy-based milk substitute, through a nationwide distributor network. The FTC charged that the Brogs had no scientific basis for claiming that the product had a shelf life of up to ten years and that it would reduce the incidence of cardiovascular disease because it contained less xanthine oxidase, a milk enzyme, than does homogenized whole milk. The agency also charged that the Brogs substantially overstated the income distributors could reasonably expect to earn. In April, a district court placed Meadow Fresh Farms into involuntary bankruptcy.

New oral health group. The American Oral Health Institute (AOHI) is a national nonprofit corporation formed to promote the oral health of our nation's citizens. The organization was created in 1984 following a national conference on fluoridation where it was agreed that concerted effort is needed to educate the public on this issue. Although promotion of fluoridation will be a high priority, AOHI also plans to: 1) provide management services for professional groups; 2) conduct program evaluations, research initiatives and consultative services for public health agencies and private health programs; and 3) develop a strategic plan for improving the nation's oral health. Members receive a quarterly newsletter on oral health news, and a quarterly scientific journal will eventually be published. Annual dues are \$25 for individuals, \$10 for students and \$200 for sponsoring organizations. Applications and additional information can be obtained from OAH's president, Michael W. Easley, D.D.S., M.P.H., P.O. Box 151528, Columbus, OH 43215.

"Raincheck" rule reconsidered. The Federal Trade Commission has decided to amend its food store advertising rule rather than rescind it. The current rule, adopted in 1971 to prevent unethical "bait" advertising, forbids retail stores from advertising specials unless supplies are adequate "to meet reasonably anticipated demand." Under proposed amendments, grocers can offer rainchecks or comparable substitutes and can also advertise items in limited supply provided the limits are clearly disclosed. After a November 1984 staff memo suggested that the rule might be unnecessary [see *NF* 2:15], the agency received more than 3,700 comments from trade associations, industry members, other government agencies, academic organizations, and shoppers. Additional written comments can be submitted until January 24th. Public hearings will begin on March 17th.

New maximum fluoride standards. The U.S. Environmental Protection Agency (EPA) has proposed raising the maximum allowable fluoride level in naturally fluoridated drinking water from 2.4 milligrams per liter to 4 milligrams per liter. In water supplies where fluoride is added, the maximum will remain 1.2 milligrams per liter. Studies have shown that fluoride levels above 2 milligrams per liter can cause dental fluorosis, which results in discoloration, mottling and pitting of the teeth. However, a 1982 report by the U.S. Surgeon General concluded that fluorosis is not an adverse health effect. Antifluoridationists and environmentalists have opposed raising of the standard, while the American Dental Association believes that no standard is needed for naturally fluoridated water because problems are rare and purely cosmetic.

Information packets. The American Medical Association Division of Library and Information Management, 535 N. Dearborn St., Chicago, IL 60610, has prepared information packets on questionable health methods. Most packets contain 5-10 articles from journals and other sources, some of which have been gathered by the Lehigh Valley Committee Against Health Fraud. The subjects covered include hair analysis, cytotoxic testing, chelation therapy, holistic medicine, homeopathy, iridology, naturopathy, gerovital (procaine therapy), cancer quackery, and quackery in general. Packets cost \$7.50 each but are free to AMA members. For additional fees, computer searches can be performed on subjects for which packets have not been prepared.

Special food for the elderly? According to *The Wall Street Journal*, scientists at Duke University and elsewhere are trying to develop products that will make food tastier for the elderly. This may be possible by adding naturally occurring ingredients that heighten taste or add odors to foods. If the research succeeds, it will probably be several years before any taste-amplified foods are available to consumers. However, a prominent researcher quoted in the article cautioned that few elderly individuals who are healthy will need such products.

Suits seek to terminate artificial feeding. Court permission is being sought to stop artificial feeding of Nancy Ellen Jobes, a New Jersey woman who has been comatose for five years and is considered unable to recover. The attorney in the case is Paul Armstrong, who represented the family of comatose Karen Quinlan ten years ago in their successful fight to have a respirator turned off even though it was expected to result in her death. The issue in both cases is whether society should approve removal of artificial aids from a patient, who, while not terminally ill, will never wake up from coma and is being kept alive solely by artificial means. *American Medical News* estimates that some 10,000 persons in permanent vegetative states are being kept alive in the United States at an estimated cost of \$150,000 per year per person—money which many ethicists believe would be much better spent on technology to save patients whose underlying conditions are curable. In another current case, a Massachusetts lower court ruled that neither a hospital nor a nursing home could discontinue artificial feeding of Paul Brophy, a Massachusetts man who has been comatose for three years. The judge concluded that Brophy would not have wanted to be kept alive by artificial means. But since Brophy was not near the end of his normal span of years and did not actually appear to be suffering, the judge felt that the state has a duty to keep him alive.

Mendelsohn endorses yeast product. Naturally Vitamin Supplements of Scottsdale, Arizona, has announced that Robert Mendelsohn, M.D., has endorsed its product, Bio-Strath, and advocates its daily use. Bio-Strath is a yeast and herb mixture said to contain "10 B-vitamins, 19 minerals, 18 amino acids and important active enzymes." The company has begun advertising a statement by Mendelsohn that Bio-Strath "can help people who experience daily tiredness, fatigue and difficult concentration . . . may stimulate the immune system. And may actually help us to assimilate more natural fuel from the foods we eat." (Claims of this type make Bio-Strath a drug product which would be illegal to market without FDA approval.) Mendelsohn, who opposes immunization, fluoridation, and licensing of nutritionists, is a former president of the National Health Federation.

"Oral chelation" product seized. On September 5th, New York State Attorney General Robert Abrams announced that Orachel had been seized from retail outlets in the New York City area and that suit had been filed to block sale and distribution of the product throughout the state. The seizures were made at various locations of L&H Vitamins and Vitamin Shoppes, Inc., both of which sell large amounts of supplement products (at discounts from list price) through mail-order sales nationwide. Orachel, a Kurt Donsbach formulation of vitamins, minerals, amino acids and other substances, has been claimed effective for preventing and treating cardiovascular disease. A few months ago, the FDA ordered Donsbach and his company, HRG Distributors, of Huntington Beach, California, to stop marketing Orachel. (Shortly before the order was issued, however, another company had taken over distribution.)

Notable quote. "The problem of media misinformation also applies to politics, business, religion, ethics, medicine, and other topics of vital social concern. CSICOP is primarily interested in the reporting of the paranormal and the pseudosciences, but what happens in these areas is perhaps symptomatic of the broader problem—the need to develop in both the journalistic fraternity and the public some sort of appreciation for critical and reflective judgment in evaluating claims of truth. This need is made more critical by the fact that the public is constantly being bombarded by those who wish to promote their own views, sell a bill of goods, convert others to a cause, or convince us that they have discovered a special truth or found a unique road to salvation." From: "Responsibilities of the media and paranormal claims," by Paul Kurtz, Ph.D., Chairman, Committee for Scientific Investigation of Claims of the Paranormal [*Skeptical Inquirer*, Spring, 1985].

Why wait? The Life Extension Foundation, of Hollywood, Florida, sells Life Extension Mix, Life Extension Shampoo, Life-Extension Weight-Loss Formula, and various other supplement products claimed to improve memory, improve athletic performance, and strengthen the heart. For customers in a hurry, the company has made a special arrangement for Federal Express to deliver "rush" orders overnight for only \$3.50 extra.

QUESTION BOX

Q. What are chelated minerals? Do they have any advantage over other mineral supplements?

A. In simple terms, chelation is a process by which metal ions in solution become bound by certain organic molecules which surround them. Chelated mineral supplements can be found in just about every health food store in America. They are usually more expensive than their inorganic counterparts, but the proponents of chelated minerals claim that the extra expense is justified because they are better absorbed and utilized than inorganic mineral salts. They also claim that chelated supplements cause less gastrointestinal disturbance than inorganic salts. There is, however, no scientific evidence to support these claims. An extensive study comparing the absorption of inorganic iron (ferrous sulfate) with various iron chelates showed little or no difference among them [Brise and Hallberg: *Acta Med. Scandinav. Suppl.* 376:23, 1963].

The absorption of metallic minerals is a complex process. It is influenced by the solubility of the mineral salt or complex, the valence state of the mineral (ferric salts are absorbed poorly compared to ferrous salts), and the presence of compounds such as phytates, tannins or oxalates which reduce the absorption of some minerals by forming insoluble complexes. Other dietary components such as fats, proteins, vitamin C, and some types of dietary fiber can also alter mineral absorption. Excesses of some minerals will decrease the absorption and/or excretion of others. Excess zinc, for example, will reduce the utilization of copper.

It is clear that the absorption and utilization of minerals depends on many interrelated factors. Furthermore, metallic ions chelate with a large variety of molecules found in just about everything we eat. These include organic acids (e.g., citric acid), sugars (e.g., lactose) and amino acids (e.g., glycine and histidine). Since practically all minerals consumed in a normal diet will become chelated at some point during the digestive process, there is no theoretical justification for taking chelated minerals.

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THE GERSON CLINIC

James Lowell, Ph.D.

About six miles south of Tijuana, Mexico, on the old Ensanada Road, is the Hospital La Gloria, one of six major "alternative" cancer clinics located in the area. Housed in a converted resort, La Gloria's operation is guided by Charlotte Gerson Straus, daughter of the late Dr. Max Gerson.

La Gloria resembles the turn-of-the-century sanitariums where patients went for rest, recuperation and various therapies. Its facilities are set on several acres among lush vegetation and dozens of palm trees, and include a two-story motel wing with spacious rooms, all of which overlook a large patio pool. The motel portion, plus rooms in two other buildings, can house up to 28 patients at a time, although the average census is 15. Other buildings contain treatment facilities, a lounge, and a combination dining room and lecture area. There is also a small store which sells literature and other products associated with Gerson therapy.

La Gloria opened its doors in 1977 with the avowed purpose of not only treating patients but also training their "assistants" (friends and relatives who accompany them to Mexico) and interested physicians in the Gerson methods. The facility, which is incorporated in Mexico, is operated for profit by Drs. Dan Rogers, an American, and Victor Ortuno, who is Mexican, both of whom were trained as general practitioners. There are about 60 employees, including several other physicians, guards at the gate, nurses, maids, kitchen staff, and drivers who chauffeur patients. About 600 patients are treated each year.

Although the promoters call La Gloria a hospital, a New York Appellate judge ruled recently that the facility did not meet the definition of a hospital for insurance purposes because it lacked operating rooms, laboratories, an emergency room and other facilities normally found in hospitals [see NF 2:37].

Max Gerson, M. D., was born on October 18, 1881 in Wongrowitz, Germany, and graduated from medical school in Freiburg in 1906. In 1938, at the age of 57, he fled the Nazi regime and entered the United States, where he was granted a license to practice medicine in

New York State. Meanwhile, his father, mother and seven brothers and sisters were annihilated in concentration camps.

Gerson summarized his basic theories about cancer and other diseases he considered "degenerative" in a paper in the *Review of Gastroenterology* in 1945. He believed that special diet, injections of raw liver extract, "detoxification" of the body with enemas and diet, sodium restriction and high intake of potassium could build up the body's immune system, thereby increasing resistance to disease. He claimed that his approach could cure not only cancers, but also such conditions as tuberculosis, lupus erythematosus and heart disease. His original dietary recommendations were: no sodium, no fat, little animal protein, high potassium, much carbohydrate, lots of fluids, dehydrated, defatted liver capsules and liver injections. Later he advised adding small amounts of linseed oil.

In 1947, the National Cancer Institute reviewed 10 cases selected by Dr. Gerson and found his report unconvincing. That same year, a committee appointed by the New York County Medical Society reviewed records of 86 patients, examined 10 patients, and found no scientific evidence that the Gerson method had value in the treatment of cancer. (Curiously, Mrs. Straus claims that these investigations never took place even though they are mentioned in Gerson literature.) Eventually, Gerson lost his hospital privileges and malpractice insurance, and received a two-year suspension from the New York County Medical Society for advertising his "secret" treatment on a radio talk show. He died in 1959.

Most referrals to La Gloria are made through the Gerson Institute, P.O. Box 430, Bonita, CA 92002. The Institute is described in the 1981 issue of its journal, *Healing*, as a nonprofit charitable organization which teaches methods for preventing and healing disease, "particularly . . . all the major killing and crippling diseases for which orthodox medicine has a 0% cure rate." One of the Institute's goals is "to get at least one copy of *Healing* into every home in the United States." According to staff member Gar Hildenbrand, whose testimonial

of recovery from lupus erythematosus using Gerson therapy appears in *Healing*, the Institute now has 2,200 contributing members. In addition, it sells publications about the Gerson therapy. Hildenbrand said he is paid about \$30,000 per year and that Mrs. Straus receives somewhat less.

Cancer, Think Curable! The Gerson Therapy, a booklet distributed by the Gerson Institute, specifies 21 conditions which the author claims are curable by the treatment. Included are cancers, heart disease and atherosclerosis, arthritis, allergies, multiple sclerosis, asthma, diabetes, amyotrophic lateral sclerosis ("Lou Gehrig's disease"), infertility, psoriasis and ulcers. Physicians at La Gloria also claim to be able to restore sight to some blind persons by treating them with ozone, a reactive form of oxygen.

Mrs Straus is president of the Institute and edits its bimonthly newsletter. She maintains a busy lecture schedule, traveling throughout the U.S., sponsoring and speaking at alternative health care conventions, and appearing on talk shows. Her media bookings are arranged by North American Consultants and Promotions, Ltd., headed by Cameron Frye, who advertises himself as a "specialist in obtaining free air time." Frye also represents Stanislaw Burzynski, another promoter of questionable cancer therapy. Although his mother died of cancer after being treated by Burzynski, Frye believes Burzynski helped alleviate her suffering in her final hours. Many of Straus' speeches are given at meetings sponsored by the National Health Federation, a group promoting the gamut of unproven practices.

The Institute's executive vice president is Norman Fritz, a former president of the International Association of Cancer Victims and Friends, a group devoted to unorthodox methods of cancer management.

In a 1984 speech to students at the National College of Naturopathic Medicine in Portland, Oregon, Straus claimed that Gerson therapy could get patients off high blood pressure medicine in only five days, although, she said, it would take a little longer to cure heart disease. She also claimed that milk and protein would cause pregnant women to get cancer, and that nuts cause the breakdown of the immune system because they contain arginine. Babies, she said, shouldn't get any vaccinations, shots or drugs. Instead, if an infant becomes ill, the nursing mother should be given food supplements, drops of iodine and coffee enemas.

At a meeting I attended last summer at La Gloria, the tables had been moved out of the dining room and replaced with chairs for the occasion. In an hour-long, highly emotional speech, Charlotte Gerson Straus explained that her treatment is designed to "bring the body back to normalcy and strengthen the immune system." This, she said, can only occur when the "toxins" have been removed and proper nutritional balance established so the body will be able to heal itself.

The Gerson therapy costs about \$1,700 per week. This does not include the \$30 a day for friends or relatives accompanying the patient or the cost of special medication or products (such as juice presses) which the

patient may need to continue therapy at home. Although Gerson Institute brochures recommend stays of up to eight weeks (which would cost \$13,600), Straus says most patients stay only four weeks.

For the first week's treatment, payment must be made within one day of admission to the facility. Either cash or traveler's checks with the payee line left blank are accepted, but U.S. personal checks or cashier's checks are not. Patients are asked to sign various releases including a disclaimer acknowledging that Hospital La Gloria "makes no claims assuring cures of the medical conditions treated, including cancer."

According to Hildenbrand, patients undergo a complete physical exam when they enter La Gloria. Then they are taken to their rooms and instructed in the use of coffee and castor oil enemas and oral castor oil. These procedures supposedly irritate the organs, especially the liver, intestines and brain, and stimulate the flow of bile, resulting in "detoxification" of the body. One-quart coffee enemas are taken every four hours and increased to every two hours with the onset of symptoms associated with "detoxification," such as headache, fever, nausea or intestinal spasms.

The oral doses of castor oil are given every second day along with a cup of "organic" black coffee and raw brown sugar, which supposedly facilitate movement of the castor oil into the large intestine. The rectal dose is mixed with coffee solution and given on the same day. Some patients may also receive up to 1,000 cc of ozone into the rectum through an enema device.

On a recent television talk show, Straus claimed that symptoms of the "detoxification" are transient, and that all her patients feel better within just a few days of admission to the hospital. However, *The Gerson Primer*, a book distributed to La Gloria patients, states that detoxification may cause flu-like feelings, loss of appetite, perspiration with strong odor, weakness, dizziness, cold sores and fever blisters. Arthritics can expect their joints to become painfully swollen, symptoms of other diseases may worsen, and tumor masses will become painful. High fever, intestinal cramping, diarrhea and vomiting may also occur but, the *Primer* states, these symptoms indicate that the patient is being healed.

Cancer Winner, by Jacquie Davison, a book included in Charlotte's publicity package, also describes the detoxification crisis—but states that patients undergoing Gerson treatment can expect to have symptoms

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caused by the release of toxins for about 1½ years.

The usual Gerson dietary regimen begins with an eight-ounce glass of juice each hour, a total of about 13 glasses a day. Included are carrot, apple, orange and "green" juices, the latter made from a mixture of vegetables, and three glasses of daily juice extracted from pressed raw liver. Patients also receive tablespoons of linseed oil, acidophilus-pepsin capsules, potassium solution, Lugol's solution (an iodine/potassium iodide solution) added to the juice, thyroid tablets, 300 mg of niacin daily, pancreatic enzymes, royal jelly capsules (for some patients only), and injections of vitamin B₁₂ mixed with liver.

Except for the liver juice, the first four weeks' diet contains no protein from animal sources and is strictly vegetarian. Thereafter, small amounts of dairy products such as yogurt and cheeses may be added. Food supplements given to patients in severe pain include 50 mg of niacin, 500 mg of vitamin C and one aspirin tablet. Castor oil poultices are also used to reduce pain over specific locations.

According to Mr. Fritz, the treatment process after leaving La Gloria Hospital is quite time-consuming. Making fresh juice 13 times a day, cleaning the juicer each time, preparing the fruits and vegetables, and shopping for them usually take 40-50 hours a week, although with experience this may drop to 30 hours a week.

Gerson Institute literature claims a recovery rate of 90% of early cases and "about 50%" for advanced cancer patients. These are patients, they say, who have no chance of recovery under orthodox treatment. Fritz claims that patients with melanomas or lung cancer with early metastasis have a 70-90% chance of recovery, while those with brain tumors have only a 30% cure rate.

Mrs. Straus says her success rate is very high in treating essentially all types of cancers. But she said in a recent TV broadcast that statistics have not been published because the establishment would try to compare her results with theirs, which would be unfair, because the patients who come to her have mostly been declared terminal and are close to death. "Comparing my patients with those undergoing standard treatment is like comparing apples to oranges."

Actually, it does not appear that genuine data exist on the survival rates of Gerson therapy patients. Hildenbrand told me that when La Gloria opened, Rogers and Ortuno had no interest in keeping records or documenting cures. Fritz told Dr. Stephen Barrett in a recent interview that no systematic follow-up takes place because the process would take more money and manpower than are available. Instead, the Institute's survival statistics are based on a combination of the doctor's estimate that the departing patient has a "reasonable chance of surviving," plus feelings that the Institute staff have about the status of people who call in.

According to Fritz, patients leaving the clinic are instructed to telephone every month or two to discuss problems, get additional instructions, or order sup-

plies—but that only about 25% do so. "We assume that those who don't call are not following the program," he told Dr. Barrett. If a patient dies, Fritz said, the Institute may not know the cause of death unless a family member happens to provide this information. This process, of course, contrasts sharply with the tumor registries used by hospitals and state health departments to keep track of cancer patients through questionnaires sent at regular intervals to treating physicians.

Mrs. Straus claims that patients who have not undergone the standard treatment modalities of radiation, surgery and chemotherapy have the best chance of being cured by her regimen. In fact, she says, once people have received chemotherapeutic agents, their immune system is destroyed, and the Gerson therapy will no longer work. Therefore, they will not admit them to La Gloria. However, Delmar Aiken, M.D., a tumor specialist from Loma Linda, California, has reported that a patient he treated with both chemotherapy and surgery was later accepted into the Gerson program for outpatient treatment.

Patients treated at La Gloria Hospital may be risking serious infection. Dr. Michelle M. Ginsberg of the San Diego Department of Health has reported that during the past six years, at least 13 patients who said they had been treated at La Gloria have been admitted to San Diego area hospitals with *Campylobacter* sepsis. Their physicians believe the source of the infection was the raw liver used at the clinic. Five of the patients were comatose when admitted due to low serum sodium (as low as 102 meq/l), presumably related to the no-sodium diet recommended by Gerson. None of these patients was cancer-free, and one died from his malignancy within a week of admission to the hospital.

Another disastrous result in a patient treated by Gerson therapy has been reported by William T. Jarvis, Ph. D., professor of health education at Loma Linda University and president of the National Council Against Health Fraud. In this case, a 24-year-old osteopathic student with testicular cancer had surgery but refused chemotherapy because of his religious beliefs. Instead he underwent Gerson therapy and other unproven methods that fit his interpretation of "God's remedies." Although his original probability of 5-year survival was over 90% with proper treatment, he died of his cancer at age 26.

Benjamin Wilson, M.D., a surgeon from Portland, Oregon, has reported that a young woman was told by "doctors" at the Gerson clinic that she had cancer of the breast when she did not. This woman had undergone conventional treatment several years previously and feared her cancer would return. Although a physical exam had found no malignancy, she was still frightened and decided to visit La Gloria—where she was told that the cancer had come back. According to Dr. Wilson, after several weeks on the Gerson treatment, she felt so miserable that she decided to take her chances with the supposed cancer. On her return home, her doctor again reassured her that no malignancy was present.

Straus claims this case is exceptional and that her staff seldom make mistakes of this sort. According to an article in *Healing* which describes their research and expansion goals, however, the testing methods used at La Gloria "do not, in many respects, equal those used by Gerson a half century ago . . . We need better and more complete methods of testing and monitoring." The fact is that La Gloria does not contain laboratory facilities for running the tests necessary to diagnose cancer. In fact, on a recent television broadcast, Straus said her doctors don't actually attempt to prove cancer exists but rely on the patients' word for it or on medical reports that the patients may bring with them.

Before any cancer treatment is considered "proven" and acceptable for general use by physicians, it must undergo rigorous scientific scrutiny. According to the American Cancer Society, standards of investigation for cancer treatments should include at least the following: 1) complete evaluation of all clinical and laboratory data presented by the proponent including case histo-

ries, x-ray films, and microscopic slides; 2) reproducible analysis of the drug and laboratory results; 3) observations on the effects of the therapy under study in a sufficient number of patients with biopsy-proven cancer; 4) assessment of treatment results for each case compared to other previous or concomitant therapy; 5) examination of autopsy data; and 6) consultation with investigating groups.

It seems clear that proponents of the Gerson therapy are not gathering data in a scientific manner with the hope of someday proving their case.

Dr. Lowell, a board member of the National Council Against Health Fraud, is Professor of Life Sciences at Pima Community College, Tucson, Arizona, and a columnist for *The Arizona Daily Star*. This article was based on more than five years of investigation which included many trips to "alternative" health conventions, visits to the Mexican cancer clinics, and interviews with promoters and practitioners of unproven methods.

Book Review

Title: Opportunities in Nutrition Careers (1986)
 Author: Carol Coles Caldwell, M.S., R.D.
 Publisher: VGM Career Horizons, 4255 W. Touhy Ave.,
 Lincolnwood, IL 60646
 Price: \$9.95 hardcover, 6.95 softcover
 Reviewed by: Denice Ferko-Adams, R.D.

This 150-page text is a concise and accurate resource which should be particularly useful for career counselors and individuals interested in pursuing a career in dietetics. In fact, it could well have been titled "Careers in Dietetics." Following an introduction to the American Dietetic Association's history and goals, much-needed emphasis is then placed on the rapidly changing roles of the dietitian. Educational requirements are detailed for Plan IV programs, dietetic internships, coordinated undergraduate programs, and dietetic technician programs. For each of these ADA membership routes, an appendix lists the names and addresses of programs in the United States and Puerto Rico. These lists are one of the book's most practical features. The author also tells how advanced degrees plus ADA-approved experience can qualify candidates for the Registered Dietitian examination.

Career roles and educational requirements are detailed for clinical dietetics, clinical dietetic specialties, community dietetics, and food service management. In these chapters, community dietetics dominates the section and includes evolving roles for the dietitian working in home health care, health maintenance organizations, fitness centers, private practice,

business and industry, and sales. The chapter devoted to the dietetic technician comprehensively covers roles and education, but does not include employment statistics, salary ranges, and future job opportunities as are detailed for the dietitian positions.

A realistic approach prevails throughout chapters focusing on the diverse roles and career opportunities for dietitians. This realism is illustrated by such statements as: "Nutrition experts can create the world in which they work; but it will take initiative, advanced knowledge, and the development of individual expertise." Courses of study are suggested for developing expertise in specific areas. Assertiveness and creativity are illustrated in the final chapter, "Interviews With Current Practitioners," which shows how eight dietitians have succeeded in "creating the world in which they work."

The book's foreword was written by the president of a health and fitness resort where the author is employed. He considers Adelle Davis profound for having said "we are what we eat." He also included superfluous claims that food can keep you alert, help you sleep, give you strength and endurance to compete, and "keep your body fueled for the highest performance and best health possible." Fortunately, these statements are out of character with the professionalism exhibited throughout the rest of the book.

Ms. Ferko-Adams is a nutrition consultant in private practice in Allentown, Pennsylvania. She also consults for the YWCA and a regional affiliate of the Dairy Council. From 1983 to 1985 she edited *Dietitians in General Clinical Practice*, the newsletter of the American Dietetic Association's Dietetic Practice Group.

BUTCHER'S-BROOM

Varro E. Tyler, Ph.D.

Broom is one of those indefinite common names that tend to make the field of plant-drug nomenclature such a difficult one. The name was originally applied to several plants whose tough stems and rigid leaves made them useful for sweeping up debris. Used without a qualifying adjective, broom refers to *Cytisus scoparius* L., a common roadside plant in the Pacific Northwest, distinguishable by its showy yellow flowers. Spanish broom or gorse (*Spartium junceum* L.) is another yellow-flowered leguminous shrub that flourishes in parts of California. Although both plants have been used in folk medicine, neither is the so-called butcher's-broom which is, so to speak, "sweeping the country" at the present time.

Butcher's-broom, also known as box holly or knee holly, is a fairly common short evergreen shrub (*Ruscus aculeatus* L.) of the family Liliaceae, native throughout the Mediterranean region from the Azores to Iran. It, too, has a long history of use in herbal medicine. As early as the first century, Dioscorides recommended butcher's-broom as a laxative and diuretic. The 17th century apothecary-astrologer Nicholas Culpeper suggested that a decoction of the root be drunk and a poultice of the berries and leaves applied to facilitate the knitting of broken bones. However, the drug never became popular in either Europe or the United States, and until recently, was seldom mentioned in standard references on drugs.

Then during the 1950s French investigators showed that an alcoholic extract of butcher's-broom rhizomes (underground stems) produced vasoconstriction (blood vessel narrowing) in test animals. Further studies identified the active principles as a mixture of steroidal saponins, the two main ones being identified as ruscogenin and neoruscogenin. In addition to its vasoconstrictive effects, the extract was demonstrated to have anti-inflammatory properties.

These studies convinced certain European drug manufacturers that butcher's-broom extract is superior to some of the conventional plant remedies, such as extracts of horse chestnut and witch hazel, that are marketed for their supposed beneficial effects on venous circulation. Consequently, they have made extracts of butcher's-broom commercially available in capsule form to treat circulatory problems of the legs, and as an ointment or suppository to relieve the symptoms of hemorrhoids.

Capsules containing 75 mg of butcher's-broom and 2 mg of rosemary oil are now being sold in the United States, mainly through health food stores. One such product is being advertised as "a proven European herbal formula—said to improve circulation in the legs," while another is being promoted with the claim that "millions of Europeans report it works wonders—particularly for women who often complain about a

'heavy feeling' in the legs." The ads also state that butcher's-broom is "rare" or "hard-to-find"—which is not true.

While there may be some basis for cautious optimism concerning butcher's-broom as a potentially useful drug, would-be consumers should recognize that manufacturers of butcher's-broom products have never presented proof of safety and efficacy to the FDA and that therapeutic claims for these products are therefore illegal. Moreover, self-diagnosis and self-treatment of circulatory disorders, or any other potentially serious health problem, are certainly inadvisable.

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs.

QUESTION BOX

Q. Does the addition of isoascorbate to foods as a preservative increase their vitamin C value?

A. No. Isoascorbate or isoascorbic acid (most frequently called and labeled as erythorbic acid erythorbate) provides little if any vitamin C biological value. However, because common vitamin C assay procedures do not differentiate between vitamin C and isoascorbate, isoascorbate in foods can result in false high readings for the vitamin. The U.S. Department of Agriculture, which is the primary source of information about the nutrient content of foods, has researchers working to develop tests that differentiate between the two compounds.

Isoascorbate is a GRAS (Generally Recognized As Safe) food additive. Its main use is to help retain the natural color of red meats, such as cured pork, beef cuts, hamburgers and frankfurters. No more than 3/4 ounce is added to 100 pounds of meat. Its antioxidant action prevents the meat from changing color through reactions with oxygen.

During the 1970s a rumor circulated in North America that certain meat products contained "earthworms." The unfortunate process may have resulted from misreading of the "erythorbate" on a meat product label.

UNPROVEN ALLERGY CONCEPTS ATTACKED

The American Academy of Allergy and Immunology (AAAAI), the nation's largest professional organization of allergists, has issued position papers strongly criticizing the concepts of "clinical ecology" and "candidiasis hypersensitivity syndrome" and the diagnostic and treatment approaches used by their proponents. At the same time, the Academy issued another statement defining standards for evaluating proposed methods.

Clinical ecology, which is not a recognized specialty, is an approach founded by Theron Randolph, M.D., of Chicago. It ascribes a wide range of symptoms to exposure to numerous common substances in the environment. Advocates of this practice describe themselves as "ecologically orientated" and refer to their patients as "environmentally ill," "hypersensitive," or allergic to such factors as food, water, chemicals or pollutants. According to proponents, symptoms exhibited as a result of "ecological disease" are multiple and can include behavior disorders, depression, chronic fatigue, arthritis, hypertension, learning disabilities, schizophrenia, gastrointestinal symptoms, respiratory problems and urinary complaints.

Clinical ecologists postulate that symptoms are related to "immune system dysregulation," which many physicians, "faced with its incredible array of seemingly unrelated symptoms . . . misdiagnose as stress, psychosomatic disease or the like." Treatment usually requires major changes in the home environment and lifestyle, often with highly restricted diets, injections of suspect chemicals, and living in special isolation rooms where synthetic materials have been removed and the air is filtered.

To establish their diagnoses, clinical ecologists rely on such tests as provocation and neutralization, cyclical and elimination diets, assays of immune system components, and a few standard tests for food allergy. (Provocation and neutralization are unproven methods in which the patient is given a suspected allergic substance to provoke symptoms and then treated with weaker doses to neutralize supposed allergic reactions. The substances used can be injected or administered as drops placed under the tongue to be absorbed.)

Noting that there are very few symptoms which clinical ecologists have not considered related to environmental sensitivity, AAAAI warned that although the

idea that the environment is responsible for a multitude of human health problems is very appealing, "to present such ideas as facts, conclusions, or even likely mechanisms without adequate support is poor medical practice."

Candidiasis hypersensitivity is a supposed syndrome which has been popularized by C. Orian Truss, M.D., of Birmingham, Alabama, and William G. Crook, M.D., of Jackson, Tennessee. Its symptoms are said to be multiple and to include fatigue, depression, inability to concentrate, hyperactivity, headaches, skin problems (including hives), abdominal pain and bloating, constipation, diarrhea, respiratory symptoms, and problems of the urinary and reproductive organs. According to Dr. Crook, "If a careful check-up doesn't reveal the cause for your symptoms, and your medical history [as described in his book, *The Yeast Connection*] is typical, it's possible or even probable that your health problems are yeast connected." He also claims that tests such as cultures don't help much in diagnosis because "Candida germs live in every person's body . . . Therefore the diagnosis is suspected from the patient's history and confirmed by his response to treatment."

Crook claims that the problem arises because "antibiotics kill 'friendly germs' while they're killing enemies. And when friendly germs are knocked out, yeast germs (*Candida albicans*) multiply. Diets rich in carbohydrates and yeasts, birth control pills, cortisone and other drugs also stimulate yeast growth." He also claims that large numbers of yeasts weaken the immune system, which is also adversely affected by nutritional deficiencies, sugar consumption, and exposure to environmental molds and chemicals. Crook's proposed treatment program includes: a wide variety of questionable diagnostic tests; treatment with allergenic extracts; supplementation with vitamins, minerals and antioxidants; diets that avoid refined carbohydrates, processed foods, and (initially) fruits and milk; and treatment with antifungal drugs.

Due largely to Dr. Crook's promotion, public interest in "candida hypersensitivity" appears to be increasing rapidly. *Health Foods Business* notes that several new products (Yeast Fighters, Control, Candida-Guard and Candida Cleanse) are being marketed. One retailer reported "about 15-20 Candida customers a

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week" with an average checkout ticket of \$80. Another said she had sold 350 copies of *The Yeast Connection* during the past 18 months. And the Price-Pottenger Nutrition Foundation says it receives about 500 letters a week asking for referrals to knowledgeable doctors.

AAAI's Practice Standards Committee has concluded: 1) the concept of candidiasis hypersensitivity is speculative and unproven; 2) its basic elements would apply to almost all sick patients at some time because its supposed symptoms are essentially universal; 3) overuse of oral antifungal agents could lead to the development of resistant germs that could menace others; and 4) adverse effects of oral antifungal agents are rare, but some inevitably will occur.

Regarding unproven procedures, AAAI notes:

- All newly proposed procedures start out unproven and should be subjected to a fair trial to determine whether or not they are effective.
- The responsibility for testing unproven procedures should rest with their proponents.
- During the trial period, a procedure should be considered experimental and reserved for use with informed consent in controlled trials which have been

approved for safety and scientific merit by competent institutional review boards.

- Neither patients nor physicians can determine effectiveness (as opposed to coincidence) without controlled trials. Because allergic symptoms can be influenced by many factors, including emotions, experiments must be designed to separate the effects of the procedure being tested from the effects of other factors.

- A procedure should not be accepted for general use until proof of effectiveness has been established and published in reputable, refereed medical journals.

- An unproven procedure can be proven effective, since it is possible to prove a positive point. However, under most circumstances, it is not possible to prove a negative point. Therefore the biomedical community should require proof of effectiveness before a procedure is accepted for routine use, but should not demand proof of ineffectiveness before discarding an unproven procedure.

Copies of AAAI's position papers can be obtained free of charge by sending a stamped, self-addressed envelope to the American Academy of Allergy, 611 E. Wells St., Milwaukee, WI 53202.

BRIEFS

AMA report on saccharin. The American Medical Association Council on Scientific Affairs has concluded that "in humans, the use of artificial sweeteners, including saccharin, is not associated with an increased risk of bladder cancer" [JAMA 254:2622-2624, 1985]. Although bladder tumors have been produced in male rats exposed to saccharin from conception through adult life, the Council concluded that this phenomenon has not been reproducible in other animals and appears to be specific for rats. Epidemiologic studies have found no association between saccharin use and bladder cancer in human adults. However, because little data exist on saccharin's possible effects on young children and pregnant women, the Council recommends that additional data be gathered and that saccharin use by these two groups be given "careful consideration."

Maternal/infant health promotion. The Healthy Mothers, Healthy Babies Coalition is an informal association of more than 70 national professional, voluntary, and governmental organizations with a common interest in maternal and infant health. Information on its activities and publications can be obtained by writing to the Coalition at 600 Maryland Avenue, S.W., Suite 300, Washington, D.C., 20024.

Fluoridation rejected. On November 5th, voters in San Antonio, Texas, defeated a referendum that would have fluoridated the drinking water of its one million residents. The vote, with only 17% of registered voters participating, was 42,140 to 39,045. Although an ordinance had been passed by the city council in 1984, anti-fluoridationists gathered enough signatures to force a referendum.

Media asked to reject blatantly false ads. Virginia H. Knauer, Special Advisor to the President for Consumer Affairs, has called for an end to ads touting perpetual youth, weight-reduction schemes, or phony cures for baldness, cancer and arthritis. In a recent address before the Media Luncheon Group, an organization of advertising review executives, she said: "I am not asking ad managers to be clairvoyant; nor am I asking that they make distinctions that call for great wisdom. I ask only that they use good, old-fashioned common sense. In other words, the media should make greater efforts to reject improbable, misleading and fraudulent ads." To provide further help in spotting questionable weight-reduction promotions, the Council of Better Business Bureaus and the FDA have distributed a detailed report on this subject to media outlets throughout the country.

Free brochures. Nine brochures on sports nutrition for amateur athletes have been published by the NutraSweet division of G.D. Searle & Co. The brochures were produced under the guidance of Sarah H. Short, Ph.D., R.D., professor of nutrition of Syracuse University and have been endorsed by the Amateur Athletic Union (AAU). The activities covered are: running, swimming, skiing, biking, racquet sports, hiking, aerobic dance, skating, and weight training. Free copies can be obtained by indicating the subject(s) of interest and sending a stamped, self-addressed envelope to Eat to Compete, c/o AAU, 3400 W. 86th St., Indianapolis, IN 46268.

Shaklee co-founder dies. Forrest Shaklee, Sr., the chiropractor who founded Shaklee Corporation in 1956 with his sons, Forrest, Jr., and Raleigh, died December 17, 1985 at the age of 91.

Aquaculture. According to an article in the November 1985 *Science of Food and Agriculture*, the supply of ocean fish is precarious but fish farming is a rapidly growing business. Although fish provide only a small percentage of the protein consumed in this country, they can supply much more as the market grows. Fish farming uses less energy for protein synthesis than either poultry or livestock production and can utilize land unsuitable for other agricultural purposes. The three main fish cultured in the United States are channel catfish, trout and crawfish. High quality can be maintained because farmed fish usually reach the processing plant alive.

Vitamin E information. The Henkel Corporation, which manufactures vitamin E products, has begun operating the Vitamin E Research & Information Service (VERIS) for health professionals, researchers, and nutrition and health communicators. Qualified persons are eligible to receive its free newsletter as well as a comprehensive annual compilation of research abstracts. For placement on the mailing list or additional information on vitamin E, write to Sharon Landvik, M.S., R.D., Manager, VERIS, 7900 W. 78th St., Minneapolis, MN 55435, or call her at 800-328-6199 or 612-828-8188.

COMING SOON
Consumer Reports Blasts
Vitamin Pushers
Consumer Attitudes Toward Foods

Health promotion poll. When 1,040 primary care physicians in Maryland were asked about 25 health promotion behaviors, elimination of smoking scored highest, with 94% rating it "very important" and 6% rating it "important." Nutrition-related items scored very important or important as follows: avoid excess caloric intake (73%/24%); eat a balanced diet (68%/29%); avoid saturated fat foods (52%/42%); drink alcohol moderately (52%/31%); decrease salt consumption (41%/50%); avoid high cholesterol foods (41%/46%); eat breakfast every morning (33%/40%); limit daily caffeine intake (23%/54%); and minimize sugar intake (15%/47%). "Take vitamin supplements" scored lowest, with 6% very important, 21% important, 40% unimportant, and 34% very unimportant. [American Journal of Public Health 75:1427-1428, 1985.]

New fluoridation manual. Activists working toward community fluoridation can benefit from information in *Water Fluoridation—A Manual for Engineers and Technicians* (1985). Most of its 119 pages cover the mechanics and chemistry of fluoridation delivery systems, but excellent discussions of fluoridation's effectiveness, safety, opponents, and alternatives (including school fluoridation) are included. Free copies can be obtained from the author: Thomas G. Reeves, P.E., Fluoridation Engineer, Dental Disease Prevention Activity, Center for Prevention Services, U.S. Public Health Service Centers for Disease Control, Atlanta, GA 30333. (Telephone: 404-329-1833)

"Natural Foods Month." The National Nutritional Foods Association has urged health food industry personnel to ask their local and state officials to proclaim April as "National Foods Month." Promotional materials for retailers include coloring books, sample press releases, ad slicks, and posters opposing food irradiation.

Plans for giant educational center suspended. Citing market pressures, Tishman Speyer Properties of New York suspended plans for EcuMed, its proposed billion-dollar medical exposition center. The facilities were to include a high-tech learning/resource center, a museum of health technology, a 1,500-room resort hotel, a conference center that could handle more than 3,500 meetings a year, and an exhibition center that could eventually house up to 1,500 exhibitors. The project, which was expected to draw 600,000 professionals, administrators and suppliers annually, had been scheduled to open in 1988 on a 293-acre site near Fort Lauderdale, Florida. It would have been the largest health care educational facility in the United States.

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CURRENT PERSPECTIVES ON FIBER

George E. Demetrakopoulos, M.D., M.P.H.

Dietary fibers, also referred to as "bulk" or "roughage," are substances found in foods that cannot be digested in the stomach or small intestine and therefore pass undigested from the mouth to the large intestine (colon). Although some fibers come from animal sources such as chicken cartilage, meat tendons, and the shell of soft-shell crabs, most come from plant products such as fruits, vegetables, roots, seeds or grains. Fibers can appear thready (in celery or spinach, for example), granular (in pears or berries), or as sheets (in onions or grain skins).

Scientists classify fibers into five main groups: celluloses, hemicelluloses, pectins and gums/mucilages—all of which are complex carbohydrates—and the noncarbohydrate lignins (see table of dietary fibers). Celluloses, hemicelluloses and lignins are components of wood as well as edible plants. They are tough, fibrous and insoluble in water. Pectins and gums can dissolve in water to form viscous or gel-like textures.

"Dietary fiber" and "crude fiber" are not identical terms. "Crude fiber" remains after a food sample is treated in the laboratory with a solvent, hot acid, and hot alkali. It is composed mainly of the lignin and most of the cellulose in the food being analyzed. But crude fiber is only a small part of dietary fiber, so its measurement has limited usefulness. The word fiber itself can be misleading since not all components of dietary fiber appear "fibrous," while some foods that contain recognizable fibers, such as muscle meats, do not yield indigestible residue and therefore are not part of dietary fiber.

Usually, several types of fibers are present in a given food, but often one type predominates. The amounts can vary with the ripeness of the food, where it was grown, how long it was stored, and how it was processed. For example, an unripened apple contains only a small amount of pectin, a ripened apple has much, while a mealy, overripe one has no pectin at all because of breakdown by the apple's own enzymes. With vegeta-

bles like cauliflower, the more mature or woody they become, the more lignin is present in their stalks. Fibers can be destroyed or altered when extracted from foods or during processing, as is the case with canned or frozen fruits and vegetables. It is not known whether fibers extracted from foods have the same effects within the body as those from intact foods.

A century ago, fibers were considered an unnecessary part of the diet, and painstaking efforts were made to refine many foods by removing their fiber. During the 1970s, after D.P. Burkitt, M.D., and H.C. Trowell, M.D., reported that certain African tribes whose diets were rich in fiber did not suffer bowel disorders common in the Western world, scientists realized that dietary fibers are an essential part of a healthy diet. However, uncertainties over the exact amount needed and the role of fiber in such high-fiber diets still make most of us cautious about suggesting what daily intake would be optimal.

Today, stimulated by news of President Reagan's colon cancer and reports that followed on the role low-fiber diets may play in increasing the risk of such cancer, recommendations for fiber-rich diets seem to be everywhere. But there is still much confusion about how much fiber is needed, what kind is best, and when it should be consumed. Experts agree that fiber is important, because with too little there is a greater risk of developing disorders, the most serious being colon cancer. But they also recognize that too much fiber can cause nutritional deficiencies or perhaps even increase the risk for stomach cancer! [See *National Cancer Program*, NIH Publication Number 85-2765, 1985, p. 143.] The National Cancer Institute, in its booklet *Diet, Nutrition & Cancer Prevention: a guide to food choices* [NIH Publication No. 85-2711, November 1984], states that the average American consumes about 10-20 grams of fiber daily. But recent surveys as well as detailed dietary records from my own patients suggest that this figure may be far too high.

Surprisingly, the U.S. Department of Agriculture

DIETARY FIBERS OF PLANT ORIGIN

CHARACTERISTICS	MAIN ACTIONS	FOOD SOURCES
CELLULOSES:		
Fibrous Soluble in water Absorb water readily Main component of the plant cell wall Most common fibers in nature	Make stools bulkier & softer Move stools quicker Help relieve constipation Speed elimination of toxic substances from the gut Do not lower blood cholesterol Block mineral absorption	Cereal bran Whole grain flours Cereal grains Skin of fruits Woody parts of vegetables Beans, seeds or nuts
HEMICELLULOSES: Intermingle with celluloses to form stalks, hulls, husks, etc.		
A. MIXED: Resemble celluloses in several aspects		
B. PENTOSANS:		
A specific group of hemicelluloses	The only fibers that have been associated so far with reducing the risk of cancer of the large bowel	Fruits: berries, prunes, bananas, cherries, plums, apples or pears. Vegetables: cauliflower, onions, broccoli, endives, mushrooms spinach, potatoes, eggplant, carrots, pumpkins or beans. Roots, leaves, etc.
PECTINS		
Soluble in water Gel-like plant fibers	Lower blood cholesterol Moderate effect on stool elimination. Do not block mineral absorption	Fruits: apples, pears, citrus fruits or figs. Vegetables: beets, okra, carrots, olives, etc.
GUMS & MUCILAGES		
Sticky and gummy Form gels when dissolved in water Found on trees like "teardrops" or collected by scraping the bark (like rubber)	Some help lower blood cholesterol Some help control blood sugar in diabetics Do not bind to minerals	Extracts from seaweed carob seeds and gum-trees. Oatmeal Dried beans Thickening agents (stabilizers) in salad dressings, ice cream, spreads, ketchup, etc.
LIGNINS		
Woody parts of plants Cannot be fermented by bacteria in the colon	Bind to bile acids protecting the bowel from irritation and can help lower blood cholesterol Make stools move faster Bind to minerals, block their absorption, and can cause mineral deficiencies	Whole grains Whole grain flours Bran and hulls Seeds of berries, figs, guava and tomatoes Woody parts of vegetables: cauliflower, cabbage, etc.

(USDA), the Department of Health and Human Services (DHHS) and the National Cancer Institute (NCI) are in conflict on how much fiber should be consumed daily. NCI, without specifying which types of fiber or citing any controlled studies, recommends that Americans consume 25-35 grams of fiber daily. USDA and DHHS, while agreeing that Americans should increase their fiber intake, feel that it is premature to set specific goals. Their *Dietary Guidelines for Americans* (DGAs) issued jointly in October 1985 state: "It has been suggested that diets low in fiber may increase the risk of developing colon cancer. Whether this is true is not yet known. How dietary fiber relates to cancer is one of many fiber topics under study. Some others are the fiber content of foods and the amount of fiber we need in our diets." USDA and DHHS are aware of the problems that too much fiber can cause and are concerned about possible unknown risks.

The DGAs are in agreement with the National Academy of Sciences report on *Diet, Nutrition, and Cancer* which was prepared under an NCI contract. This report states that there is "no conclusive evidence to indicate that dietary fiber exerts a protective effect against colorectal cancer in humans," although it does point out that one fiber component (pentosans, discussed later in this article) may protect against such cancer.

Unfortunately, a number of food manufacturers, consumer advocacy groups and others have jumped on the bandwagon and begun flooding the public with unfounded proclamations that consuming 25-45 grams of fiber daily will lower the risk of developing cancer.

Since various types of fibers work differently, it is important to know how they work to avoid the perpetuation of myths. One such myth is the belief that bran is the best and only source of fiber, when actually it is neither, and in some cases can even do more harm than good.

Fibers do their work in the digestive tract as part of a blended mixture. Once swallowed, they contribute bulk and some swelling of stomach contents as water is absorbed. Soluble forms of fiber (pectins and gums) increase the viscosity of stomach contents and slow down emptying of the stomach.

Once past the stomach, fibers absorb intestinal juices, forming soft and bulky matter which moves smoothly and swiftly. During this passage, celluloses, lignins and hemicelluloses absorb or bind substances, including toxic or inert products and even important nutrients, blocking their absorption.

In the colon, some fibers (primarily pectins and gums) are fermented and degraded by bacteria and yeasts, while others (primarily the celluloses and other insoluble fibers) are not. When fibrous foods are fermented, gas is released. Fibers that are not degraded act like blotting paper to absorb fluids within the intestines, soften stools and increase their bulk. This speeds up their elimination, which means that billions of bacteria

and yeasts as well as irritating wastes are excreted faster. Thus, with soft stools, there is less congestion and irritation in the colon and very little strain during bowel movements.

Straining during bowel movements can cause hemorrhoids, varicose veins and even diverticulosis, a condition where the wall of the colon weakens and forms small finger-like outpouches. Food and bacteria trapped in these pouches can cause diverticulitis, an inflammatory disorder common among elderly persons who have lived on low-fiber diets. By stretching the intestinal wall, bulk causes the diverticula to open and release trapped wastes, thus preventing diverticulitis. For similar reasons, diets rich in bulk-forming fibers can benefit patients with irritable colon.

In patients with high blood cholesterol, diets rich in pectin or lignin can help lower blood cholesterol levels and thus may help to reduce the risk of heart attacks. Fiber-rich diets smooth the absorption of sugars into the blood and can help to reduce the insulin needs in diabetics or the frequency of symptoms in hypoglycemics. Fiber-rich diets can also help to control high blood pressure.

Scientists suspect that diets rich in pentosans—a type of hemicellulose—may lower the risk of colon cancer, but the evidence is limited and not yet definitive. Pentosans—one component of plant cell walls—are common in fruits (e.g., apples, berries, bananas, citrus fruits and pears), vegetables (e.g., carrots, mushrooms, olives, onions, spinach, eggplant and broccoli), and whole wheat products. [See *World Review in Nutrition and Dietetics* 32:96, 1978.] A surer benefit from eating such foods is that they are low in fat and rich in vitamins A and C and beta-carotene, characteristics thought to help lower the risk for certain cancers.

How much fiber should be consumed daily by a healthy person? A daily intake of 25-45 grams of fiber from ordinary foods is next to impossible. To achieve this, most Americans would have to add to their usual diet the equivalent of several boxes of corn flakes or rice cereal every day. The NCI, in an attempt to make its recommendation for increased fiber consumption more realistic, joined forces with the Kellogg Company in a nationwide advertising campaign promoting consumption of food products such as bran cereals. (Bran is the broken coat of the cereal grain.) On its cereal boxes,

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Kellogg printed preventative health tips as though they applied to the enclosed product rather than dietary fibers in general [see NF 2:69]. No warning was given that overconsumption of such products can cause serious health troubles. NCI, aware of these problems, is reportedly reconsidering its position.

When bran is eaten, either in breakfast cereals, tablets, wafers, powders, biscuits, or as part of whole foods, it creates bulk which makes the stool move faster and relieves constipation. But bran can also bind essential minerals like zinc, calcium, iron and magnesium so that they are not absorbed into the body. Consequently, if excess bran is eaten at the wrong time (even a tablespoon of bran with or soon after each meal), it can lead to deficiencies in these elements. In addition, some animal studies show that during carcinogen exposure, high-bran diets enhance the development of colon cancer! [See *Cancer Research* 43:4057, 1983.]

Much better sources of bulk include fruits with their skins, vegetables with their stalks, beans with their coats, seeds, and whole grains. A few berries, a banana or a cup of dried beans can provide ample bulk along

with several essential nutrients—which bran lacks.

Although specific goals for daily fiber consumption must await further research, experts agree that fibers are an essential part of a balanced diet. To assure that your diet is not low in fiber, include in your daily menu a few servings of fiber-rich unprocessed foods such as fruits, vegetables, legumes and whole grain or seed products. If you can't eat such foods but need fiber supplements for a specific condition, ask your doctor which fiber type is best for you. (Examples are Metamucil, Pectin, Bran, FiberMed and Mixed Fibers.) If you take fiber supplements, take them several hours before or after meals; otherwise they may bind minerals in the foods you eat, preventing their absorption and possibly causing nutritional deficiencies.

Dr. Demetrakopoulos, a board-certified specialist in clinical nutrition, is medical director of the Medical Nutrition Center of Greater Washington, D.C. He is president of the American Academy of Certified Medical Nutritionists and has held an Expert appointment at the National Cancer Institute.

EDITOR'S NOTE

FURTHER BACKGROUND HISTORY ON "FIBER"

There is considerable inconsistency in the literature concerning the use of the term "fiber." It wasn't until the 1970s that "dietary fiber" became an important subject within the study of human nutrition. During prior decades, animal nutritionists had been determining "crude fiber" in feed. The value of "roughage" in the diet has been recognized since Hippocrates identified bran as a laxative as early as 400 B.C.

"Crude fiber" is defined as the residue remaining after treatment with hot 1.25% sulfuric acid, 1.25% sodium hydroxide, and alcohol. It consists primarily of chemically inert residues such as lignin, cellulose and trace amounts of other polysaccharides. Only a fraction (as little as one-seventh) of the total "dietary fiber" is "crude fiber." Crude fiber is a term of laboratory and

chemical analytical significance. To relate fiber to human nutrition, another definition was needed.

D.P. Burkitt, the British medical researcher who has done more than anyone else to focus attention on fiber, defined it as "mostly celluloses and lignin and lignin material, varying in different plants according to type and age. Basically, it passes through the small intestine undigested by our enzymes."

Other researchers of the 1970s have improved this definition so that "dietary fiber" is most commonly defined as that part of plant material in the diet that is resistant to digestion by the secretions of the gastrointestinal tract. Under this definition, dietary fiber consists of variable proportions of complex carbohydrates, such as celluloses (unbranched polymerized glucose), hemicelluloses (highly branched pentose polymers), pectins (polymerized galacturonic acids), and lignins, which are not carbohydrates but enormously complex

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polymers of oxyphenylpropane units that occur in close association with the structural carbohydrate and hydrocolloid components of many plant cells.

Some scientists, including Dr. Demetrakopolous, believe it is advantageous to include certain animal fibers within the definition [see Van Soest, P.]: Component analysis of fiber in food, *American Journal of Nutrition* 31:75-76, 1978]. That may be true in theory, but since most Americans consume insignificant amounts of these fibers, it has not been customary to include them in discussions of fiber.

Crude fiber can easily be measured by traditional chemical analysis. The amount of dietary fiber can be measured by subjecting foods to chemical processes similar to those taking place in the digestive tract. But the presence of bacteria in the large intestine makes it impossible to measure the effects of human digestion on fiber by doing "balance" studies that compare the amount of fiber ingested in food to the amount excreted in the feces. There are two reasons for this. First, some

of the fiber that is not digested in the mouth, stomach or small intestine is fermented by bacteria in the large intestine. Second, bacteria also make fiber which, when excreted, cannot be distinguished from fiber of food origin. Bacterial cell walls contain fiber which is created from intestinal contents when the bacteria multiply. Bacteria also make mucopolysaccharides. Since one-third of dry (solid) fecal matter is of bacterial origin, it is clear that bacteria contribute a substantial proportion of the fiber in human feces.

Claims of potential benefits from fiber in the diet are still being researched. As many as 30 human diseases and disorders have been mentioned as benefiting from increased fiber intake. It remains to be seen what fiber fraction(s) may benefit which disorder(s), how such benefit occurs, what the optimal intakes might be, and whether any effect of dietary fiber will benefit everyone.

—Manfred Kroger, Ph.D.

CONSUMER REPORTS BLASTS "VITAMIN PUSHERS"

In December 1985, the FDA and the Pharmaceutical Advertising Council began a major advertising campaign of public service ads attacking quackery and encouraging people to ask their doctor or pharmacist about claims that seem too good to be true. Money used for the campaign came from donations of drug manufacturers plus a grant from the FDA. The "ask your pharmacist" theme was included despite warnings from independent consultants for the grant proposal that: 1) some companies supporting the campaign were themselves involved in misleading advertising of vitamin products; and 2) virtually all pharmacies sell irrationally formulated "food supplements" and thus are promoting and profiting from quackery.

These problems are illustrated in a devastating exposé in the March issue of *Consumer Reports* magazine. Called "The Vitamin Pushers," the six-page cover story describes how reporters from the magazine visited 30 drugstores in Pennsylvania, Missouri and California, complained of feeling tired or nervous, and asked whether a vitamin product might help. Seventeen were sold a vitamin product and one was sold an amino preparation. Only nine of the 30 pharmacists suggested that a doctor be consulted.

To explore how pharmacy students are taught to handle this type of situation, questionnaires were sent to the deans of all 72 U.S. pharmacy schools. Almost all of the 51 who responded thought that pharmacists should attempt through questioning to identify possible causes of tiredness or nervousness and ask whether a doctor had been consulted. More than half said that pharmacists should advise that vitamins are unlikely to help either condition.

CU's article provides basic vitamin information, refutes various megavitamin myths, and attacks the promotion of "nutrition insurance," "stress vitamins" and "sports vitamins." The article concludes with these recommendations:

- Rather than taking vitamins for "insurance," consumers should evaluate their diet to determine whether they are eating a variety of foods from the Basic Four Food Groups. Those unable to figure this out are advised to keep a food diary for a week and ask a registered dietitian or physician whether anything is missing. If anything is, the best course of action will probably be to improve eating habits.

- Amounts of vitamins that exceed the Recommended Dietary Allowances (RDAs) should not be taken without medical advice.

- Doctors or nutrition consultants who recommend vitamins as cure-alls should be avoided.

- The FDA should evaluate claims made by promoters of "stress vitamins" and publicize its findings. The agency should also work with the pharmaceutical industry to develop voluntary standards for vitamin product formulations.

- The FTC should try to stop misleading advertising for "nutrition insurance," "stress tablets," "sports vitamins," and the like.

- The pharmaceutical profession should recognize the pushing of unnecessary supplements as an ethical issue that deserves its serious attention.

Copies of the March *Consumer Reports* can be obtained by sending \$3 to Back Issue Dept., Consumer Reports, P.O. Box 2840, Boulder, CO 80322.

BRIEFS

Hair analysis statement. The public affairs committee of the American Institute of Nutrition/American Society for Clinical Nutrition has issued a position paper on hair analysis [*AIN Nutrition Notes*, 21(4):10-11, Dec. 1985]. The paper concludes that although hair analysis may have some value for comparing population groups as to status of various minerals or assessing exposure to toxic heavy metals, assessment of individual subjects appears to have "almost insurmountable difficulties." For this reason, says the paper, hair analysis might best be reserved for experimental studies designed to evaluate its potential as an indicator of nutrition status and perhaps for some public health surveys. Noting that about 100 articles per year are published on hair analysis, one nutritionist who reviewed the position paper suggested that the test's inherent limitations make much of the research useless.

Scientific consortium ends. The National Nutrition Consortium has ceased operations due to inadequate funding. It was founded in 1973 with the hope of forging an organization of nutrition-related societies that could represent the larger nutrition community in contacts with government and the public. Its original members were the American Institute of Nutrition, the American Society for Clinical Nutrition, the American Dietetic Association, and the Institute of Food Technologists.

Advertising standards. During the past few months *Prevention* magazine has greatly expanded its list of unacceptable advertising. The current list includes: tobacco products; alcohol beverages; diet pills; "miracle" or crash diet programs; pep pills (caffeine); sleeping pills; homeopathic remedies; herbs touted to cure disease; ginseng; vitamins in amounts believed dangerous; "natural" vitamin C; dubious products such as bee pollen, cell salts, RNA/DNA, spirulina and octacosanol; baldness remedies; unapproved medical devices; hair analysis; mail-order nutrition courses offering certificates or diplomas; and any ad asserting that natural vitamins are more effective than synthetic ones. According to executive editor Mark Bricklin, "These guidelines have cost us large amounts of revenue, especially in the diet product area. But we are proud of this policy, and that we were one of the very few magazines that refused to carry ads for the popular liquid predigested protein and starch blocker diet aids a few years back."

Ultramarathon complication. Two experienced runners were found to have dangerously low blood sodium levels following a 100-kilometer run in temperatures up to 89°F. [*Hyponatremia and Ultramarathon Running*, *JAMA* 255:772-773, 1986]. Both became severely disoriented, and one had a grand mal (epileptic) seizure. Doctors treating the runners attributed the problem to a combination of salt loss through sweating plus excessive intake of water or electrolyte replacement glucose (one drank 20 liters and the other drank 24 liters). Other cases have been reported in which blood sodium levels dropped in triathlon competitors. Reprints of the *JAMA* article can be obtained from S. Robert Lathan, M.D., 1938 Peachtree Rd., N.W., Suite 606, Atlanta, GA 30309.

End of health spa rule. The Federal Trade Commission voted unanimously to terminate its rulemaking proceeding (which began in 1975) on health spas in favor of case-by-case enforcement. The proposed rule had provided for pro-rata refunds on memberships, a 3-day cooling-off period for rescinding contracts, a 5% limit on payments before a facility has actually opened, and a 2-year limit on the duration of membership contracts.

Major diet and health study planned. Male pharmacists, dentists, veterinarians, podiatrists, optometrists and osteopathic physicians between the ages of 40 and 75 are being invited to participate in a 5-year study of diet and lifestyle habits. The \$2.6 million study, funded by the National Institutes of Health, will be conducted by Harvard's School of Public Health over a 5-year period—or longer if funding is renewed. The researchers expect that 60,000 to 65,000 enrollees will stick with the study, which will involve filling out lengthy questionnaires every two years. More than 100 questions will be asked about food intake.

Antibiotics in animal feed. Shortly before leaving office, outgoing HHS Secretary Margaret Heckler denied the Natural Resources Defense Council's petition to ban use of subtherapeutic use of penicillin and tetracyclines in animal feeds. These antibiotics are used to increase the amount of meat that can be produced from a given amount of feed and help to prevent bacterial disease in the animals [see NF 2:63]. H.R. 616, introduced by Rep. James Weaver (D-OR), would accomplish the same purpose as the NRDC petition.

Information on low-calorie sweeteners. Several free brochures are available from the Calorie Control Council Suite 500-D, 5775 Peachtree-Dunwoody Road, Atlanta, GA 30342. The brochures are: *Sweet Choices*, *Aspartame*, *Saccharin*, *Epidemiology* (a summary of human studies that support the safety of saccharin), and *Alternative Sweeteners* (facts on 12 low-calorie substances and 7 other alternatives to sucrose). A quarterly newsletter is also available. The Council, established in 1966, is an international association of 60 manufacturers and suppliers of low-calorie foods and beverages.

Irradiation update. Regulations permitting irradiation of pork (to kill trichinosis organisms) and fresh fruits and vegetables (to kill pests and prolong shelf life) appear close to final approval, and the U.S. Department of Health and Human Services is considering approval for poultry as well. Irradiated foods must now carry the word "picowaved" on their label together with the international logo pictured below. The logo, which depicts a stylized rose with two petals, was developed a few years ago in the Netherlands and is used on many packaged irradiated foods abroad.



Osteoporosis report. The American Council on Science and Health (ACSH) has issued a 28-page report on the prevention of osteoporosis (thinning of the bones). Inadequate calcium intake and lack of exercise are major contributing factors. Other possible risk factors include short stature; underweight; alcoholism; cigarette smoking; and excessive intake of protein, fiber, oxalate or caffeine. The report notes that adequate calcium can be obtained by including generous amounts of dairy products in the diet, but that most women fail to consume the Recommended Dietary Allowance for calcium. ACSH also advises women approaching menopause to discuss with their doctor the risks and benefits of postmenopausal estrogen therapy. For a free copy of the report, send a self-addressed stamped (39¢ postage) 4"x9½" envelope to Osteoporosis Report, ACSH, 47 Maple Street, Summit, NJ 07901.

College dietary dispute resolved. According to *Vegetarian Times*, the University of Maryland agreed to temporarily allow Hsia Jung Chang to prepare food in her dormitory room. Ms. Chang, a vegetarian, had been unwilling to pay \$700 to eat in the university's dining hall as is normally required of freshman and sophomores who live on campus. (Although vegetarian options were available, she had rejected them as inadequate.) Threatened with eviction, she received widespread publicity. The dispute was resolved by an agreement under which Ms. Chang could continue eating in her room for one semester but would provide the university with a weekly list of foods from which it would prepare her meals—to be eaten in the dining room. She would also pay 10% additional for the extra service.

Fat suction. According to an article in *Medical World News* [Dec. 23, 1985], more than 1,000 board-certified plastic and reconstructive surgeons are using liposuction, an operation in which unsightly localized areas of fat are sucked out through incisions in the buttocks, abdomen, face and other areas. The procedure is usually done on an outpatient basis using local anesthesia.

Suit against raw milk critics dismissed. The \$110 million lawsuit by Alta-Dena Dairy against John Bolton, M.D., and the American Academy of Pediatrics has been summarily dismissed by Marin County Superior Court Judge Henry Broderick who ruled that the dairy's charges were without merit. [See NF 2:64 for details.] Dr. Bolton believes that the suit was merely an effort to intimidate him and prevent him from continuing to warn consumers about the hazards of unpasteurized milk, especially to pregnant women, infants, and the elderly. Last September, the Alameda County Superior Court issued a preliminary injunction ordering the dairy to stop promoting its products as "the world's safest and finest" and to stop recommending them for infants and invalids [see NF 2:87]. In October, following a fatal epidemic of listeriosis attributed to raw milk contamination of Jalisco cheese [NF 2:64], the Los Angeles Grand Jury asked the California Department of Agriculture and Foods to consider banning raw milk sales in California. In the December *Western Journal of Medicine*, James Chin, M.D., M.P.H., noted that more than 95% of milk in the United States is pasteurized, but more than 95% of milk-borne disease outbreaks are due to raw milk. Despite the negative publicity, many AIDS patients admitted to San Francisco General Hospital have said they were drinking raw milk with the hope it could help them.

“STRENGTHENING THE IMMUNE SYSTEM” — A GROWING FAD

Health Foods Retailing (HFR) reports in its October issue that vitamin sales have increased sharply in response to Dr. Berger's *Immune Power Diet*, by Stewart M. Berger, M.D., a book purporting to tell how to “re-build your immune system” with dietary change and supplementation with vitamins, minerals and amino acids. The magazine's editor predicts that “as the general public becomes aware of the need to refurbish their immune systems, there will be a growing need for vitamin suppliers who can relate to a more sophisticated buying public. No longer will mass merchandisers be able to arbitrarily declare a trend in vogue and stock accordingly. The newly emerging buying public will understand the interlocking relationships between the thymus, T cells, antibodies and macrophages and the role vitamin supplementation can have in allowing the immune system to work effectively.”

Public concern about the immune system has been stimulated by the problem of Acquired Autoimmune Deficiency Syndrome (AIDS). According to HFR, this plus the discovery that President Reagan had developed cancer forced the domestic population as a whole “to admit the possibility that large numbers of Americans are being stripped of their ability to resist infections and, even more psychologically damaging, that no one, not even the President, was beyond the reach of many diseases.”

Stewart M. Berger, M.D., is a 32-year-old psychiatrist who represents himself as “a specialist in nutritional medicine treating immune disorders, food allergies and obesity.” He practices in Manhattan, writes a weekly column for the *New York Post*, and has written for many magazines, including *Parade*. The initial visit to his office, which costs \$375, includes cytotoxic testing and consultations with Berger and a staff nutritionist. Among other things, his newspaper columns recommend a minimum of 2 grams of vitamin C daily for everyone and suggest that about 40% of American adults are suffering from hypothyroidism. Berger's columns also indicate that he treats AIDS by detecting supposed intolerance to various foods and prescribing dietary changes plus vitamins, minerals and exercise. However, allergy experts such as Gabe Mirkin, M.D., have responded to Berger's theories by pointing out that although immunity is decreased in vitamin deficiency states, there is no evidence that adequately nourished individuals will increase immunity by taking supplements. William I. Bennett, M.D., editor of the *Harvard Medical School Health Letter* says Berger's book “is selling a collection of quack ideas about food allergies that have been around for decades.”

According to *People Magazine*, Berger's interest in diet was the result of his own weight problem (he weighed 420 prior to entering medical school and lost half this amount over a 1½-year period). His first book, *The Southampton Diet*, was published in 1981. Berger asserts that food allergies weaken the immune system and that almost everyone is allergic to some foods. His recent appearance on *The Phil Donahue Show* reportedly triggered sales of more than 50,000 copies of *Dr. Berger's Immune Power Diet* during the following three days. Over 300,000 copies are now in print, and a paperback edition is scheduled for release next year. So it is clear that a major new fad is under way.

Health News & Review, a bimonthly “health food” newspaper for the general public, reports in its November/December issue that, “there is now a growing public recognition that AIDS, cancer, arthritis, even colds—very nearly the whole spectrum of infectious and degenerative diseases—become manifest dangers only when the immune system is depressed. Strengthening the immune system—which can be briefly described as an ‘army’ of cells called T-lymphocytes which attack hostile organisms of substances—is clearly emerging as a health priority.” The article illustrates how promoters of a wide variety of unproven nutrition practices relate them to supposed immunological factors. Sugar, food allergies and mercury fillings, for example, are said to weaken the system while vitamin C, zinc, beta-carotene, and certain herbs are said to strengthen it.

In line with these ideas, many combinations of vitamins, minerals and/or herbs are being marketed with claims that they boost immunity. Although products of this type are unapproved new drugs, the FDA has shown no interest so far in attempting to remove them from the marketplace.

GUIDELINES FOR AUTHORS

Professionals interested in reviewing books or writing articles for *Nutrition Forum* can obtain instructions by sending their curriculum vitae plus a self-addressed, stamped envelope to: Author Guidelines, P.O. Box 1747, Allentown, PA 18105.

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CONSUMER ATTITUDES TOWARD FOOD

Robert O. Herrmann, Ph.D.
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To better understand the role of food in people's lives, Penn State researchers conducted a "food involvement" survey in December 1984. Using random-digit dialing to reach both listed and unlisted telephone numbers, interviewers contacted food shoppers from 322 households in Philadelphia and four surrounding counties. Most of those interviewed were women.

Thirty of the interview questions centered on meal planning, food shopping, food preparation, nutrition and health concerns, interest in new products and recipes, social uses of food (e.g., as gifts and for entertaining guests), and use of media sources dealing with food and nutrition.

Through computer cluster-analysis, the researchers grouped shoppers into four broad response categories: "involved," "disinterested," "standpatters" and "economizers."

The involved category of shoppers was the largest group identified, making up 33% of those surveyed. These shoppers are involved with almost every aspect of food.

Of all four groups, the involved are the most concerned with planning and managing their food purchases. They indicated that they usually make grocery lists and plan menus before shopping, check their menus for nutritional balance, and economize as much as possible on food purchases. The involved like to try new food products and new recipes, and are heavy users of media information about food.

The involved are very concerned about nutrition and health. Most try hard to avoid foods high in sugar, salt, fat and cholesterol, and calories, and to eat plenty of vegetables, fruits, and high-fiber foods.

The involved also reported the greatest social use of food. They invite guests for meals and snacks more often and give gifts of food more frequently than do the

other groups. In addition, they have little interest in using easy-to-prepare foods just to reduce preparation time.

Consumers in the disinterested group, who made up 22% of the households surveyed, are radically different from the involved consumers. They are generally not concerned about nutrition, new food products, and new recipes. However, they do express some interest in saving time and effort in food preparation. Of all the groups, they are the most interested in easy-to-prepare foods.

The standpatters' distinguishing characteristic is their lack of interest in changing shopping or eating patterns. Accounting for 23% of the households surveyed, standpatters reported almost no use of food information sources. They rarely watch television programs or read magazine articles about food and they seldom read the newspaper food pages. Nor are they likely to pick up recipe booklets distributed in grocery stores. Standpatters seldom try new recipes or food products, and they are the least likely of all groups to tell others about new recipes or products.

Despite their lack of interest in changing their food shopping and eating patterns, the standpatters did report nutritional concerns. Many try to avoid foods high in salt, sugar, calories, fat and cholesterol, and to eat plenty of fruits and vegetables.

The outstanding characteristic of the economizers, who comprised 22% of survey respondents, is a wish to minimize food costs. They expressed the most likely to shop for groceries at several stores in order to find the best values. Next to the involved, economizers are the most active readers of food ads.

Economizers expressed great concern about health and nutrition. Many try hard to eat plenty of vegetables and fruits and to limit foods high in salt,

sugar, fat and cholesterol, and calories. However, they are not particularly interested in menu planning. Only about 25% plan their menus before grocery shopping or check their menus regularly for nutritional balance. A large proportion of economizers said they prefer foods that are quick and easy to prepare.

Compared with the involved and even the disinterested, economizers have minimal interest in new recipes or new food products. Occasionally, however, they do tell others about new recipes and food products.

Economizers frequently read newspaper food pages and magazine articles on food. However, very few reported viewing television programs on food or picking up recipe booklets distributed in grocery stores.

A look at the socioeconomic characteristics of the four groups sheds some light on their patterns of food consumption. Of all groups, the involved have the highest levels of income and formal education. Their responses also show them to be physically active. A majority have home vegetable gardens or preserve vegetables for home use. The involved category includes the most people on weight-reducing diets.

The disinterested group includes the largest proportion of young shoppers (about half of those under 40 years old), males, and one-person households. Most people in this group do not feel it is worthwhile to fuss over food for just one person. A number of the disinterested reported being on health-related diets (low-sodium or cholesterol-lowering diets).

The standpatter group includes many one-person households, a comparatively high number of males, and the largest proportion of older adults (25% aged 70 or older). A substantial number of standpatters are on health-related diets.

Economizers have relatively low incomes and less formal education than the other groups. This group includes many non-whites and a sizable number (23%) of divorced or separated persons. Many economizers are on weight-reducing diets.

The survey paid special attention to the four groups' use of vegetables as a representative example of food involvement.

People in the involved group indicated that they usually eat fresh vegetables, and almost all reported eating vegetables every day. Therefore, very few involved shoppers feel the need to eat more vegetables.

The involved seem willing and able to make an extra effort to get good-quality vegetables. They are active gardeners and preservers, as well as frequent shoppers at roadside stands, farmers' markets, and urban produce specialty stores.

The involved are strongly interested in learning new ways to serve vegetables and in making homemade vegetable mixtures. Their responses show them to be

the most willing to spend extra time in obtaining and preparing vegetables.

Of all the groups, the disinterested were the most likely to report eating frozen or canned vegetables. This choice reflects their expressed interest in saving time and bother in food preparation. The disinterested eat vegetables less frequently than do consumers in other categories. Many recognize that they should be eating more vegetables, but most lack the motivation to do so.

Those in the disinterested group seem unwilling to spend extra time or effort to get vegetables. Few go to special sources to buy produce, and few garden or preserve. The disinterested expressed little interest in learning new ways to serve vegetables.

Standpatters include many people who reported regular use of fresh vegetables. However, in line with their lack of interest in dietary change, very few expressed interest in new ways to serve vegetables.

Economizers include a substantial number of people who said they usually use frozen vegetables. This preference reflects the group's concern for saving preparation time. The economizer group also has a relatively large proportion of gardeners, who are motivated perhaps by the desire to save money.

The characteristics of the four groups and the differences in their use of food information sources have important implications for planning promotional efforts. For vegetables, such efforts would benefit both the food industry and consumers. Many of those surveyed would gain nutritionally from changing their eating patterns, particularly by eating more vegetables.

The involved group's interest in and enthusiasm for food make them an obvious target for promotional efforts. The involved use media sources more than any other category of shoppers. Newspaper food pages are the most frequently used source, followed by magazine articles on food, booklets distributed through grocery stores, and television programs.

Of the four groups, the involved are the most familiar with the Pennsylvania product symbol. (This is the label used by producers of Pennsylvania food products under the supervision of the Pennsylvania Department of Agriculture.) They also react the most favorably to products bearing the symbol. Promotional campaigns aimed at the involved are sure to benefit from this group's role as information providers to others. Fifty-eight percent of the group say they frequently tell others about new recipes and new food products.

The disinterested's low media use and lack of involvement with food make them difficult targets for promotion. Their chief interest is saving preparation time and effort.

Promotion geared to the standpatters also appears difficult, since they seldom use media sources on food

and they do not seem interested in changing their shopping and eating patterns. However, one topic that does interest this group is health and nutrition.

The economizers' ability to make changes is clearly limited by constrained finances. This factor, along with their need to save preparation time, would have to be considered in any targeted promotional effort. Although the economizers expressed little interest in new recipes and new products, they frequently read newspaper food pages and magazine articles on food. Along with economizing, nutrition and health are strong concerns of this group.

Promotional barriers are tough to overcome. With the right appeal, however, each of the four groups can be reached. Promotion based on nutrition and health will appeal not only to the involved, but also to the standpatters and economizers. Money-saving ideas will appeal to both the economizers and the involved. The appeal with the greatest potential to reach the disinterested is the opportunity to save time and bother in meal preparation.

The survey's identification of a higher-income, more educated group (the involved) as the primary tar-

get for promotional efforts is probably not surprising. Many marketing studies have identified similar groups as promising promotional targets. What is surprising are the insights the survey provides into why other groups are not especially promising targets for promotional efforts. While the involved are open to and willing to consider dietary change, the other groups either are reluctant to change the way they eat, unable to afford significant changes, or disinterested in food and in the idea of making changes.

Surveys of this type are useful to the food industry for developing new products and planning retailing and promotional efforts. They can also be valuable to educators who wish to help make wiser food choices.

Dr. Herrmann is professor of agricultural economics; Dr. Warland is professor of rural sociology; and Marianne Goodfellow is project coordinator for the gerontology center and former instructor in rural sociology at The Pennsylvania State University. From 1974 through 1977, Dr. Herrmann served on the board of directors of Consumers Union, publisher of *Consumer Reports Magazine*.

A PROFILE OF THE FOUR SHOPPER GROUPS.

	Involved	Disinterested	Standpatters	Economizers
Key involvement characteristics	Great interest in almost all aspects of food	Little interest in most aspects of food	Little interest in changing food patterns	Great interest in economizing on food purchases
	Careful planners and shoppers	Interest in economizing on food	Little interest in new products, recipes, or information on food	Little interest in new products or recipes
	Substantial interest in new products, recipes and information on food	Substantial interest in saving time and effort in food preparation	Concern about nutrition and health	Some interest in information on food
	Strong concern about nutrition and health			Concern about nutrition and health
Key socio-economic characteristics	Highest incomes	Largest proportion of one-person households	Many one-person households	Lower incomes Less formal education
	Most formal education Many on weight-reducing diets	Largest proportion of young people	Fewest children	Many divorced or separated
		Smallest proportion of married couples	Many on health-related diets	Largest proportion of nonwhites
		Many on health-related diets	Large proportion of older people	Many on weight-reducing diets

CANDIDIASIS PROMOTION INCREASES

Nature's Way Products, Inc., of Springville, Utah, is expanding its promotional campaign through ads and in-store displays for Cantrol, its "complete program to fight yeast infections." On February 25th, Nature's Way wrote to retailers that the March issue of *Redbook Magazine* would carry a full-length feature article on yeast infections and that an ad in the same issue would "specifically instruct the consumer to go to their local health food store to purchase Cantrol."

Ads for Cantrol invite people to take simple self-tests which question whether they have various common symptoms and have ever taken antibiotics. Positive responses to at least 3 out of 6 questions (or 6 out of 14 in some ads) supposedly indicate "a high or very high probability" of yeast infection. Ads that began running last year state: "This self-test is provided for general information only and is not intended to be used for self-diagnosis without the advice and examination of a health professional." But these ads also say, "If you suspect you have a *Candida albicans* infection, put Cantrol

to the test."

The Cantrol program is based on the unproven theory that hidden "hypersensitivity" to *Candida albicans* is causing millions of people to suffer from such common symptoms as fatigue, irritability, constipation, diarrhea, abdominal bloating, mood swings, depression, dizziness, unexpected weight gain, difficulty in concentrating, muscle aches, and cravings for sugar or alcoholic beverages [see NF 3:14-15]. The program, which is claimed to "give nutritional support and help strengthen the immune system," involves dietary changes plus supplements (12 capsules/day) containing acidophilus, evening primrose oil, linseed oil, pau d'arco, vitamin E and other antioxidants. A 3-week supply of Cantrol retails for \$23.35.

The American Academy of Allergy and Immunology regards "candidiasis hypersensitivity" as speculative and unproven. Dr. Stephen Barrett believes that the Nature's Way campaign is illegal and has asked the FDA and FTC to take enforcement action.

"STRESS VITAMIN" MANUFACTURER AGREES TO STOP FALSE AND MISLEADING CLAIMS

On November 25, 1985, E.R. Squibb & Sons, Inc., agreed to pay \$15,000 to New York State and promised to stop making a number of false and misleading claims for its Theragran Stress Formula. New York State Attorney General Robert Abrams had brought prosecution in response to packaging which states: "Stress resulting from work situations, physical activity, smoking and complications of everyday life can increase your body's need for certain vitamins the body cannot store. One Theragran Stress Formula tablet a day can replace B-complex and C vitamins, which are not stored by the body. Theragran Stress Formula also includes Biotin needed to turn carbohydrates into energy."

Theragran Stress Formula contains vitamin C and the B-vitamins in amounts ranging from 15% to 1250% of the Recommended Dietary Allowances (RDAs). Under the settlement, Squibb promised not to state or imply in its advertising or packaging that:

- emotional stress increases the need for water-soluble vitamins
- smoking and ordinary physical activity increase the need for water-soluble vitamins by the amounts contained in Stress Formula
- consumers cannot obtain the water-soluble vitamins lost because of non-severe stress by eating a bal-

anced diet and by increasing food intake when necessary or by taking an ordinary potency (100% RDA) multiple vitamin supplement

- biotin is difficult to obtain in an average diet
- people under emotional or non-severe physical stress are at risk for biotin deficiency
- taking Stress Formula will reduce the effects of psychological stress.

The Attorney General has indicated that he intends to take action against other manufacturers of "stress formulas" who have been making similar or identical claims for their products. The problem was brought to his attention by the Center for Science in the Public Interest.

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THE SCIENCE IN OUR FOOD: HOMOGENIZATION

Manfred Kroger, Ph.D.

Homogenization is a prime example of how food technology touches our life in a beneficial way. Yet few consumers know what the process entails.

Practically every milk carton in today's supermarket contains the word "homogenized" on its label. Many other food products have been processed with a homogenizer; and cosmetics and other household products would simply fall apart (separate) if it weren't for homogenization.

Homogenizing means making something homogeneous (the same throughout). This includes making different-looking microscopic components look alike or blending something into a smooth mixture. From a physical standpoint, homogenization is the reduction of particles so that they are uniformly small and evenly distributed. With regard to milk, it is the fat globules that are made homogeneous.

The milk we buy in stores is cows' milk that has been processed in a dairy plant. Packaged whole milk usually has a fat content of 3.25%. Low-fat milk contains 0.5%, 1%, 1.5% or 2% milk fat, as noted on the label, and skim milk (also called nonfat milk) contains less than 0.5% fat. They are all pasteurized and (except for skim milk) processed by a homogenizer. Unpasteurized milk is referred to as raw milk.

Milk fat, also called butterfat, is suspended in milk in perfectly round globules so small that one drop of whole milk contains about 100 million of them. When they emerge from the cow's udder, they range from about 1 to 15 micrometers in diameter.

It is a physical law that particles greater than 5 micrometers in diameter must either settle to the bottom or move to the surface. Being lighter (lower in specific gravity) than the surrounding skim milk, fat globules rise slowly to the top. That explains why non-homogenized milk will develop a visible layer of cream on top when left standing for 10-20 hours. Throughout the 1920s, '30s and '40s, consumers were able to purchase "cream line" milk. It was sold in bottles and had a 1- to 2-inch layer of yellowish cream on top. It looked interesting and would provide cream for one's coffee. The cream layer would get tough like rubber after prolonged standing, and milk bottles with hardened left-over cream in them were difficult to clean. Much milk

fat must have been lost merely because it clung tenaciously to the container.

Because dairies wished to sell milk as fresh as possible, it was often marketed before creaming was complete. This led to some confusion among consumers because most people thought that a thick cream layer was desirable. The dairy industry had difficulty explaining that it took at least 24 hours for a good cream line to form and that its thickness did not indicate the exact fat content or overall quality.

Liquids are homogenized by forcing them through a nozzle under high pressure until all particles contained in them are broken up—made so small that colloidal suspensions are formed. This method was discovered by French scientists in 1899. Homogenizers found rapid acceptance by makers of ice cream, salad dressings and many other products. It wasn't until 1927 in Canada and 1932 in the U.S.A. that homogenization was applied to market milk. Modern milk homogenizers are simply stainless steel pumps that force whole milk through nozzles under pressures of up to 3000 pounds per square inch. Depending on the size of the homogenizer, thousands of gallons can be processed per hour.

Since homogenization does away with creamability, it also did away with cream-line milk. But nobody really bemoaned its disappearance. Early commercials for homogenized milk pointed out its "soft-curd" nature. It turned out that high-pressure treatment not only reduces the size of fat globules but also destabilizes the milk protein micelles (tiny packets 10-100 times smaller yet than fat globules). As a result, claims were made that homogenized milk was more easily digested. It was also observed that homogenized milk curdles more readily than unhomogenized milk when used in preparing such foods as scalloped potatoes and cream of tomato soup.

Homogenization has guaranteed that market milk is creamy white, pours well, contains no unsightly clumps of butterfat, looks the same whether purchased in Maine or California, and whether one day old or ten. Most important, it has a smooth taste.

Dr. Kroger is Professor of Food Science at The Pennsylvania State University.

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DIETARY GUIDELINES REVISED

On September 24, 1985, the second edition of *Nutrition and Your Health: Dietary Guidelines for Americans* was released jointly by the U.S. Departments of Agriculture (USDA) and Health and Human Services (HHS). The guidelines were prepared with the help of a nine-person advisory committee led by Bernard S. Schweigert, Ph.D., chairman of the Department of Food Science and Technology of the University of California/Davis. The others were Henry Kamin, Ph.D., David Kritchevsky, Ph.D., Robert Levy, M.D., Sanford Miller, Ph.D., Robert E. Olson, M.D., Ph.D., Lester Salans, M.D., Fredrick J. Stare, M.D., Ph.D., and Judith S. Stern, Sc.D. The committee recommended review and possible revision every 5-10 years.

The guidelines are intended for Americans who are already healthy and want to decrease their chances of developing certain chronic diseases. They are recommended especially for people who have risk factors such as a family history of obesity, diabetes, high blood pressure, high blood cholesterol or heart disease early in life. Rather than recommending specific quantities of foods or nutrients as ideal or optimal, they attempt to suggest a direction of dietary change that seems sensible. There are seven guidelines:

1. *Eat a variety of foods.* To assure variety—and with it a well balanced diet, the guidelines recommend choosing foods each day from five food groups: fruits; vegetables; cereals and other foods made from grains; dairy products; and meats, fish, poultry, eggs, and dry beans and peas. These groups are identical to the “Basic Four” except that fruits and vegetables are categorized separately to make five groups. The guidelines state that vitamin or mineral supplements are rarely needed except by women who menstruate, are pregnant or are breast-feeding. For babies, the guidelines suggest: breast-feeding unless there are special problems; delay of solid foods until the age of 4-6 months; and no addition of salt or sugar to baby foods.

2. *Maintain desirable weight.* Noting that obesity is associated with many serious illnesses, the guidelines suggest that the weight of adults should usually be not much more than it was at about 25 years of age. For those who are overweight, loss of 1-2 pounds a week should be accomplished by increasing physical activity and eating low-calorie, nutrient-dense foods—more fruits, vegetables and grains, less fat and fatty foods, less sugar and sweets, and less alcoholic beverages. Since diets below 800 calories can be hazardous, they should be followed only under medical supervision.

3. *Avoid too much fat, saturated fat, and cholesterol.* Acknowledging that controversy exists about what recommendations are appropriate for healthy Americans, the guidelines state that “for the U.S. population as a whole, it is sensible to reduce daily consump-

tion of fat. This suggestion is especially appropriate for individuals who have other cardiovascular risk factors such as cigarette smoking, high blood pressure, diabetes, or a family history of premature heart disease.” To avoid too much fat, saturated fat and cholesterol, the guidelines recommend: choosing lean meat, fish, poultry and dry beans and peas as protein sources; using skim or low-fat milk and milk products; limiting intake of fats and oils, especially those high in saturated fat; trimming fat off meats; broiling, baking or boiling instead of frying; and moderate use of fat-containing foods such as breaded or deep-fried foods.

4. *Eat foods with adequate starch and fiber.* Because foods differ in the kinds of fiber they contain, it is best to include a variety of fiber-rich foods such as grains, breads, cereals, fruits and vegetables. Adding fiber to foods that do not contain it is not recommended.

5. *Avoid too much sugar.* It is neither necessary nor possible to avoid eating simple sugars. The major health concern with excess sugar consumption is tooth decay. But the guidelines indicate that the risk does not depend simply on how much sugar and sugar-containing foods are consumed but on how often and whether they are eaten between meals and stick to the teeth. Brushing after consuming sugary foods is recommended, as are adequate fluoride intake and use of fluoridated toothpaste.

6. *Avoid too much sodium.* Noting that high sodium intake is often a factor in high blood pressure, the guidelines suggest that consideration be given to reducing sodium intake. This can be accomplished by learning to enjoy the flavors of unsalted foods; adding little or no salt during cooking or at the table; flavoring foods with herbs, spices or lemon juice; and limiting intake of foods that are obviously salty or contain significant amounts of hidden salt.

7. *If you drink alcoholic beverages, do so in moderation.* Since many alcoholic beverages are high in calories and almost all are low in nutrients, even moderate drinkers will need to drink less if they are overweight and wish to reduce. Since the level of consumption at which there is risk of birth defects to unborn children has not been established, pregnant women are advised to abstain completely from alcohol.

The report cautions: “Food alone cannot make you healthy. But good eating habits based on moderation and variety can help keep you healthy and even improve your health.”

In the November/December *Food & Nutrition News*, Dr. Schweigert indicated that the “key guideline” (a combination of Guidelines 1 and 2) is: “Consume a variety of foods providing adequate quantities of nutrients at a caloric level to maintain reasonable body weight.” He also noted that although specific individuals

at risk might benefit from quantitative advice about dietary composition, the advisory committee decided that the data were not extensive or clear-cut enough to make quantitative recommendations for the general public.

USDA's Human Nutrition Information Service is preparing a series of 14 bulletins to help Americans put the guidelines into practice. The first seven bulletins will offer information about each guideline, and the second seven will show how to use the guidelines for shopping, meal planning, eating out, making bag lunches,

preparing quick meals, and choosing snacks.

USDA is making one million copies of the 24-page booklet (Home and Garden Bulletin #232) available free. To obtain one, write to Consumer Information Center, Pueblo, CO 81009. Copies are also obtainable from county extension offices, the National Health Information Clearinghouse (800-336-4947), and the FDA Public Affairs Office. Multiple copies can be requested from the Food and Drug Administration, HFI-40, 5600 Fishers Lane, Rockville, MD 20857.

BRIEFS

Chelation therapy pamphlet. Calling it both unproven and unsafe, the American Heart Association has issued a hard-hitting 12-page pamphlet called "Questions and Answers About Chelation Therapy." (Proponents claim that intravenous administration of EDTA, vitamins and various other substances can remedy heart disease and other conditions by increasing the circulation of blood through arteries narrowed by atherosclerosis.) A free copy can be obtained by contacting any local AHA affiliate or sending a stamped, self-addressed 4"x9½" envelope to the national office at 7320 Greenville Avenue, Dallas, TX 75231.

Quackery brochure. The FDA, FTC, Postal Service and Pharmaceutical Council have jointly produced a brochure to help consumers identify health fraud and guard against worthless health products and services. A free copy in either English or Spanish is available from Quackery, HFE-88, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857.

Pritikin's arteries. Nathan Pritikin's autopsy report, which described his coronary arteries as free of atherosclerosis, is being cited as evidence that his dietary program is effective in reversing coronary artery disease. Reviewing this claim in the November 6th *Medical Tribune*, contributing editor Richard S. Gubner, M.D., notes that Pritikin's cholesterol level dropped from 280 in 1955 to 122 in 1958 and remained in the range of 102-120 in annual tests thereafter, hitting a low of 94 in November 1984. However, Dr. Gubner points out that unusually low cholesterol levels can occur in a number of severe illnesses, including cancer, and that people who die after lengthy illnesses, including cancer, and that people who die after lengthy illnesses that produce cachexia (wasting away) are often relatively free of coronary atherosclerosis. Pritikin was diagnosed as leukemic in 1958 [see NF 2:21].

FDA sued. The U.S. Food and Drug Administration is being sued for \$500,000 by a Kentucky couple who allege that their daughter, Jennifer Leann Frye, suffered liver damage from injections of E-Ferol, a vitamin E solution administered after her premature birth. In 1984, following the death of 30 premature infants treated with E-Ferol, the FDA labeled the product an unapproved new drug and its manufacturer removed it from the marketplace. Last year, the agency proposed new regulations to reduce the likelihood of similar disasters [see NF 1:1 and 2:54]. But the suit alleges that FDA inaction was a factor in Jennifer's case.

New ethical ruling. The American Medical Association's Judicial Council has ruled that it would be ethical for doctors to withhold all means of life-prolonging medical treatment, including artificially or technologically supplied food and water, from patients in irreversible coma, even if death is not imminent.

Yellow page "nutritionists." A study by the National Council Against Health Fraud has found that few "nutritionists" who advertised in the Yellow Pages are apparently qualified. Based on information in the ads, the practitioners were categorized into four groups: 1) "clearly spurious" (advertising hair analysis, cytotoxic testing, mail-order credentials, etc.); 2) "suspicious" (chiropractors, dentists and others suspected of practicing outside the scope of their expertise); 3) "undeterminable"; or 4) "apparently qualified" (Registered Dietitians). Of 439 whose ads were reviewed, 24% appeared clearly spurious, 31% were suspicious, 31% were undeterminable, and only 13% were apparently qualified. Eleven out of 24 physicians listed under the nutrition subsection of "Physicians and Surgeons" were judged "clearly spurious" because they listed such practices as chelation therapy and orthomolecular medicine. And four individuals listed under "Dietitians" were judged spurious.

Fluoride shortage. In mid-February, fluoridation was halted in Cincinnati, San Francisco, and several other cities because of a shortage of fluoride chemicals produced as by-products in the manufacture of phosphate fertilizers. Authorities expect the problem to be resolved within a few months as fertilizer production increases to meet farmers' needs for spring planting.

Alcohol labeling may be modified. The Bureau of Alcohol, Tobacco and Firearms has proposed that labeling and advertising of alcoholic beverages be required to indicate the percent of alcohol by volume rather than the "proof" (the percent of volume multiplied by two). Stating the proof value would be optional.

Health food store sales. *Health Foods Business'* estimates that 40.1% of sales in health food stores last year were for vitamins and other supplements. Based on its annual survey, the magazine reported that 6,800 stores grossed \$670.2 million for these products, up 27.3% from 1984. Other estimates were: books, \$33.4 (down 47.7%); herb teas, \$46.8 (down 6%); other herb products, \$143.7 (up 3%); and macrobiotic foods, \$16.7 (down 58.6%). The number of stores has fallen gradually from a high of 7,900 in 1982.

Microwave oven safety. A new report by the American Council on Science and Health concludes that radiation leakage from microwave ovens is not a significant problem. The real hazards, says ACSH, are electrical shock, fires and burns, most of which can be prevented by proper safety precautions. Shocks can be prevented by proper installation and periodic inspection to ensure that the electric plug and cord are not damaged. The risk of fire can be reduced by not overcooking foods and making sure that oven exhaust outlets are never blocked. And burns can be avoided by remembering that although dishes tend to stay cool, foods within them can get very hot. A free copy of the report can be obtained by sending a self-addressed 4"x9½" envelope stamped with 39¢ postage to Microwave Oven Report, ACSH, 47 Maple St., Summit, NJ 07901.

Nestle boycott report. A 24-page analysis of the Nestle boycott from the company's perspective is available free of charge from Nestle Coordination Center for Nutrition, Inc., 1120 Connecticut Avenue, N.W., Suite 310, Washington, DC 20036. The boycott began in 1977 to protest marketing of infant formula as a substitute for breast-feeding in developing countries. It was ended in 1984 after Nestle agreed to: 1) limit free distribution of formula in these countries to hospitals and health centers; 2) end gifts to physicians who promote formula; 3) add warning labels to packages; and 4) add warnings to promotional material.

Annual vegetarian protest. The second annual Great American Meatout was held on March 20 with protests in more than 25 cities. The event, patterned after the American Cancer Society's Great American Smokeout, is designed to encourage reducing the national consumption of meat. Its principal sponsor, the Farm Animal Reform Movement (FARM), of Washington, D.C., states that 1.5 million Americans are stricken annually with chronic diseases linked to excessive consumption of animal products. FARM also claims that raising animals for food uses up 90% of our agricultural resources, depletes topsoil and groundwater, destroys forest and wildlife habitats, and causes water pollution.

Pressure on McDonald's. Since 1983, the McDonald's Boycott Coalition has been trying to persuade the restaurant chain to add a soy, nut or veggie burger to its menu. According to *Vegetarian Times*, more than 430 groups have joined the coalition and about 100 restaurants have been subjected to demonstrations and leafleting.

PPA diet pills to undergo safety tests. The FDA has asked several drug companies to conduct clinical trials to determine the effect of increasing doses of phenylpropanolamine (PPA) in healthy persons. (PPA is a decongestant that can temporarily depress appetite.) The FDA currently limits the amount in diet products to 75 mg, but cold preparations may contain up to 150 mg. California neurologist Patrick Lyden, M.D., suspects that PPA may increase the incidence of strokes in persons under 40. Recently he reported that a healthy 20-year-old woman died of a PPA-induced stroke after three weeks of PPA taken at appropriate dosage. In response to a proposal by Dr. Lyden, the American Medical Association's House of Delegates has voted to follow the situation closely and may take further action in June at its next meeting.

Plant preservationists. The Seed Savers Exchange is a nonprofit group of more than 500 vegetable gardeners working to save thousands of endangered garden seeds from extinction. Some are "heirloom seeds" that have been passed down from generation to generation within families for well over 100 years. Others are commercial varieties that have been dropped from seed catalogues because they were not sufficiently popular. Membership (\$10/year) includes publications listing the seeds available and how to obtain them free of charge or for nominal cost. For additional information, send a self-addressed stamped 4"x9½" envelope to Seed Savers Exchange, 203 Rural Avenue, Decorah, IA 52101.

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“TRAINING” FOR HEALTH FOOD RETAILERS

Odom Fanning

One way “health food” retailers get information is by attending national and regional trade shows where manufacturers display their wares and various spokespeople deliver the industry viewpoint on food and nutrition issues.

Natural Foods Expo '85 East, held October 25-28, 1985, at the Washington, DC, Convention Center, attracted some 4,000 retailers, mostly from the eastern United States. More than 200 exhibits were staffed by friendly sales personnel who passed out literature and abundant samples of foods and food supplements. The exhibitors came from all over the country and included many regulars from the established sister show, Natural Foods Expo West, held each Spring in Anaheim, California. These shows are sponsored by New Hope Communications, of New Hope, Pennsylvania, publisher of *Natural Foods Merchandiser* and *Delicious!* magazines.

Expo '85 East featured 40 seminars and workshops covering all aspects of merchandising, store management and industry trends. One of the most popular seminars—which filled three hours on the final morning—was “Nutritional Selling: A Powerful Customer Service.” Attended by more than 150 health food store operators, it was led by Jeffrey S. Bland, Ph.D., whom many of the participants held in obvious awe.

Dr. Bland, who is on leave from his biochemistry professorship at the University of Puget Sound, Tacoma, Washington, has a B.S. in biology from the University of California at Irvine and a Ph.D. in chemistry from the University of Oregon. But much of his aura stems from his current position as research associate and director of the Laboratory for Nutrient Analysis at the Linus Pauling Institute of Medicine, Palo Alto, California [see NF 2:33-36]. Bland is also president of JSB & Associates, Gig Harbor, Washington, which “specializes in wellness program development and delivery.”

Bland is undoubtedly the health food industry's most prolific publicist and interpreter of nutrition-related scientific developments. In addition to appearing

frequently at trade shows, he writes and edits books, edits and publishes a magazine (*Complementary Medicine*), produces audio and video tapes, conducts courses for professionals, and serves as a consultant to several organizations which share the industry's views.

Expo's nutritional selling seminar included several skits in which Bland played storekeeper and customers were played by three retailers: Kay Peterson, of Hazelwood, Missouri; Dale Bennett, of Winter Park, Florida; and Peter Brodhead, of Savannah, Georgia. Members of the audience were also invited to act as customers and ask their “toughest question” to the four panelists acting as clerks. The quotes throughout this article were taken from *Nutrition Forum's* tape-recorded transcript, edited to remove some of the grammatical errors, repetitious words and other minor artifacts of speaking.

How to avoid “overtly prescribing”

Much of the seminar concerned how product information might be communicated without “prescribing” (which would be practicing medicine without a license). One skit was set at an “information center” located near the vitamin department of a health food store. A 69-year-old man who is a fairly regular customer comes in, walking considerably more slowly than usual. He explains that he has developed arthritis and asks what he could take to help it.

After inquiring about common symptoms such as headaches, joint problems, intestinal problems and stuffiness of the nose, Bland suggested that “food hypersensitivity” was a factor and that milk, wheat and red meat might be contributing to the man's arthritis by “aggravating his immune system.” Bland then proposed that intake of these foods be reduced and consumption of complex carbohydrates be increased. “Fortunately,” he added, “there are some emergent bodies of literature and good medical studies that indicate that things like fish oil . . . the product on our shelves over here . . . have

been shown to help stabilize the immune system in people that may have a tendency toward arthritis." Bland also directed the customer's attention to literature in the store so he could read about these matters and possibly discuss them with his doctor.

Bland's reference to "emergent" studies was typical of his presentation throughout the seminar. His delivery is rapid-fire, with frequent use of biochemical concepts and research findings (usually preliminary in nature) which he considers relevant and encouraging.

In the ensuing discussion, Ms. Peterson remarked that although "the arthritis association categorically says that food has nothing to do with arthritis," doctors may still be receptive to information from retailers. Bland said he would try to make it clear to customers that he is concerned about their medical management, that they have been seeking good care, and that he was not practicing medicine but "trying to support them with nutritional information adjunct to traditional medical care." He also warned that requests for specific product information should be handled cautiously to avoid being "nailed for prescribing."

With a customer who says he read about a product for relieving arthritis pain but doesn't remember its name, Bland suggested this approach: "I'm not sure exactly what you're talking about, but I have seen a couple of articles on amino acids like dl-phenylalanine. Could that have been what you were referring to?"

"If he says yes, it is an easy lead-in to reiterate what you learned in the article. But never say 'that's what you can take.' If he says no, you can say, 'Let me give you the gist of what I read.' Then you can say, 'Dl-phenylalanine was suggested as being a modulator of a substance called enkephalin which is the body's own native pain-deadening process and that this is a part of the endorphin family. Have you ever heard of endorphins?' The person would say yes or no, and you can take the conversation on like that, making it educational and informational. That, to me, is the real position this industry should be in. It is not diagnostic, it is not treatment, because product sales are based on that individual's considered interest and belief system. You'll sell more products by providing information with less legal jeopardy than going right out and saying, 'Here's what you really should be taking on the following dose schedule,' which is certainly overtly prescribing."

Mr. Bennett agreed: "Keep in mind that there is a very fine line in what you can and can't say . . . Once you attach a claim to a product, you are prescribing. So, you must teach your salespeople that very, very carefully. Because today you don't know who you are talking to in your stores . . . When we talk about nutrition I don't really think we can get into too many problems . . . We're not just selling a bottle of vitamins, what we're selling is the concept of good health. And we can keep hammering away at the diet."

Commenting on the abundance of helpful literature available, Ms. Peterson said: "We must make the

most of what is in the public's mind. We're riding a wave of the education that's out there. And we're providing a product . . . There's so much printed information available. A few years ago, there was practically none. Every manufacturer puts information forward. Never suggest the number of tablets the customer should take . . . Simply read the label instructions. Say, 'The manufacturers have recommended this. Through their laboratory analysis, they have found this.' Divert the information from your spoken word to some written piece of information that you have."

The right place for advice?

The audience was then asked to act as customers and present difficult or frequently asked questions to the panel. Here are some excerpts:

Customer: I've been going to a doctor and have discovered, much to my alarm, that I have a fibrocystic lump in my breast. I heard somewhere that vitamin E is good for helping this, and also recently I read something about a macrobiotic diet, and I am wondering if this is some kind of a curative diet for my problem. I don't think the cyst is malignant. I'd like to find some kind of way to help myself without having some doctor cut me up.

Peterson: How recently have you been to your doctor?

Customer: Two weeks ago. I've had some time to think about this.

Peterson: Did they do a complete mammogram? How did they diagnose it?

Customer: No, it was just a manual diagnosis. They told me it was the size of a small lima bean.

Peterson: You are seeking additional information, and certainly we would like to tell you that you have come to the right place . . . If you would be interested in changing your lifestyle—on the basis that the way you have lived to date has not been conducive to keeping your body free from that growth—I can show you information. We have classes on the macrobiotic way of living, and we work with people who teach it. The information you have come across on vitamin E has probably come from Dr. Carlton Fredericks' book. I'd very much encourage you to read that so that you can also prevent further growth. And there's a lot of information we work with that the government has issued.

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One, for instance, is diet, nutrition and cancer prevention. There is an 800 number to get it: 1-800-4-CANCER.

Customer: Are you saying that vitamin E does prevent further growth of this?

Peterson: Dr. Fredericks' book addresses that issue, and I would very much encourage you to read that.

Bland then commented: "Kay, that was a nice job. I would have probably done one thing myself. Because there are two types of fibrocystic conditions—one of which is more discomfiting than it is a warning sign of cancer—I would have tried to get some quick information. Is this a long-term problem? Does it come close to your menstrual cycle? Have you had it come and go, or is it just in the last few months? Because if it has just come on—a lump that is not inflamed and tender—it would be of higher-order-risk for malignancy. If, however, it's been associated with the menses, been with her for many years, then it's probably the kind of thing Bob London talks about in his work with vitamin E and fibrocystic disease, lower-fat diet, and so forth. You want to be very cautious that you don't alarm the person about having cancer if there is no need to alarm them. But you don't want to miss the possibility that it's not a menstrual cycle-related, long-term cystic mastitis, that it's a recent one and there is some concern about its pathology."

When another "customer" asked whether taking 50 mg of zinc might deplete his body copper level and possibly lead to high levels of uric acid and triglycerides, Bland said probably not, and offered to look at the product's label to determine whether the zinc-to-copper ratio was appropriate. He also suggested that the customer read more about "ways diet relates to triglycerides and uric acid from other avenues, such as a higher-protein diet." To another questioner he advised that sustained-release vitamins might be advantageous because they maintain higher blood levels.

Dealing with resistance

Several members of the audience pretended to be skeptical customers:

Skeptic #1: Last week I kind of got carried away with your enthusiasm and I bought an entire vitamin program that you recommended. Then after I got home I really started thinking about it. I started reading some publications that neighbors gave me when they saw these vitamins that you recommended. Even such reputable magazines as *Consumer Reports* said that our diet is entirely adequate, and that they tested McDonald's

and other fast foods and found that, based on the numbers of the RDA, that B-vitamins were at best useless and at worst can do some harm. So my question is, how do you know what I need and can you test me? Or is there a place I go to get tested, because I don't want to take something without knowing exactly what my needs are.

Bennett: I can understand what you're saying because there is a lot of confusion in the marketplace. I remember my clerk talking to me about you when you had left because you had an awful lot of good questions. I understand that you're an athlete, a triathlon competitor. Well, your needs probably might be greater than a lot of other people's needs. You're talking about some of the high-potency vitamins that you are maybe a little afraid of. They said that you didn't think you were getting the proper diet, that you get up early in the morning and don't eat breakfast. What you may want to do is just gradually work into some of these. Don't take ten vitamins all at one time because maybe your system is not ready for them. You may want to start with multiple vitamins today and possibly additional C and additional E that you have here. And after two days, maybe add this amino acid to it along with it and try to build up. Just don't jump into it all at once. Does that make sense?

Skeptic #1: Yes, it does. It's just a little different than the advice I was given initially . . . The main question about it all is basically how do I tell what exactly my nutrition needs are.

Peterson: There are many tests. We can channel you to some doctors that we work with, or we have a clinical lab where you can have evaluations done for blood, hair analysis, and we have two doctors' offices that work with us. We'd be glad to refer you to them.

Skeptic #2: My friends take vitamins, but I don't think I need them. I eat well, exercise and get enough rest every night. I have some stress on the job site, but I cope with everything. Do I need to take vitamins?

Peterson: Do your friends eat as well as you do?

Skeptic #2: I think so.

Peterson: Since your friends' indication that they feel better when taking vitamins has raised the question in your mind, perhaps you should try a B-complex when you have a stress situation arising and see if that helps you cope better. Then you would have your own proof. You could also read some of the books related to stress.

Mr. Bennett said he tells customers: "Genetics is very important . . . stress is very important, pregnancy is

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very important. Now these are all reasons that we need supplements. We need probably 60 nutrients every day in our diet to totally feed ourselves properly. Very few diets out there are accomplishing that."

Bland added that customers who question the need for supplements can be steered toward nutrient-dense foods in the store by saying, "That's wonderful. Do you realize we have a whole series of good foods that can support you in your quest towards healthy living and high nutrient intake? You're doing a great job, and we want to reinforce it. Over here is a whole section of organic foods. If later you have some concerns about vitamins and minerals, we can talk about it."

When a customer asked why natural C and B-vitamins cost more, Brodhead replied that the vitamin C in his products is made from corn by an enzymatic process—"the same process that is taking place internally in animals when they convert vitamin C from blood levels of glucose." He claimed that drugstore products may contain talc, shellac, artificial coloring, flavoring and preservatives, and may be coated so heavily with carnauba wax that they "completely pass through the body without being absorbed."

A retailer from the audience said she tells customers that "perhaps that good diet was true in their

grandparents' time when foods were grown in soil that was nutrient-rich and they had fewer environmental assaults. I tell them about a study on a pig fed corn grown in Iowa 30 or 50 years ago that did well. That same pig today would die."

When asked how to handle a customer whose interest seems to have flagged, Bland suggested giving the customer a health appraisal form with questions about lots of symptoms that may surface and bring him back after he has had time to think further.

When asked whether research by Linus Pauling may show that vitamin C can build up the immune system and make it more difficult to get AIDS, Bland replied that Dr. Ewan Cameron and others at the Pauling Institute are collaborating with an AIDS specialist at San Francisco General Hospital to explore the role of vitamin C and carnitine in AIDS. "The studies are not yet completed," Bland said, "but the testimonial anecdotes that we're getting from some of the participants are quite encouraging. In fact, the hospital doctor himself commented off-the-record recently that he was quite interested in the vitamin C connection with AIDS. So, I do believe it is well worthy of continued study and may offer an immunochemical supporting regime towards immune deficiency conditions."

(continued on page 37)

EDITOR'S NOTE

JEFFREY BLAND'S SALES AIDS

"Hesitant to answer questions your customers may have about their nutritional concerns? For \$79.95, add a doctor to your sales staff." So begins a recent ad in *Natural Foods Merchandiser* for four items produced by Jeffrey S. Bland, Ph.D.:

- *Why Nutrient Supplementation?* (\$79.95), a 20-minute videotape or 35mm slide/audiocassette program, is intended for in-store customer viewing. In it Bland claims that: 1) "marginal deficiencies" are common in the United States; 2) many people who are under the presumption that they are healthy because they are not diseased would actually benefit from higher levels of health if they were taking a regular nutritional supplement; 3) if you eat a balanced diet, the need for supplementation may be reduced; and 4) "prudent nutritional supplementation" can "optimize nutrient quality" to help augment health and prevent disease. Bland also lists ten situations where supplements are supposedly needed, but says nothing about how individuals can determine whether they fit these supposed categories. (Presumably, those listening to the tape will

either "play it safe" by buying a supplement or ask the retailer for advice on "optimization.")

- *Introductory Nutrition* (\$120), a 12-hour audiocassette home-study course, "reviews the contemporary information concerning nutritional therapeutics including the use of vitamin and mineral supplements . . . for the serious student of nutritional biochemistry."

- *Immunity and Nutrition* (\$100), a 12-hour audiocassette course, "presents the latest nutritional implications in such conditions as AIDS, Epstein-Barr virus, hepatitis, herpes, food allergy and hypersensitivity, arthritis and other autoimmune diseases, inflammatory bowel disorder, and chronic candidiasis" and examines the supposed role in "normalizing the immune system" of vitamin C, zinc, iron, copper, manganese, vitamin E, gammalinoleic acid, folic acid, vitamin B₁₂, arginine, EPA, DHA, selenium and lysine.

- *Complementary Medicine Magazine* (\$30/year), published bimonthly by Dr. Bland, is "dedicated to providing you with the information you need to stay at the leading edge of preventive medicine." It is also said to be aimed at "wellness-oriented physicians." Each issue contains articles and ads promoting unproven practices and products.

—Stephen Barrett, M.D.

Regarding questions about stress, Bland commented: "I would say, 'What does the word stress mean to you,' because it's a very personalized definition. They could say, 'It means buzzing in my ears, or high blood pressure, or I can't cope, or I get stomach upset, or I get diarrhea or feel confused.' These are interesting ways of using that patient's/client's own identification system. Then say, 'You've identified stress as insomnia. Let's talk about the things that we know about sleep disturbances. Are you getting regular exercise? Are you staying away from excessive sugar in your diet? Are you getting adequate B-complex nutrients—because the brain which represents only 6% of our body weight consumes about 20% of our energy, and it's a very nutrient-dense part of our body. If you're not properly nourished, the brain is probably the first part of the body that is adversely affected. That's why you can get changes in behavior and perception and sleep disturbances. Therefore, we want to concern ourselves with the B-complex nutrients. And we want to look at magnesium because that's another nutrient extremely important for normalizing proper nervous system function.' So using their own symptoms of stress, you can work down into the holistic approach towards stress management."

"High-tech" information

When asked what else retailers should become knowledgeable about, Bland rattled off a long list of biochemical terms and tidbits, including: therapeutic uses of serotonin, phenylalanine, and catecholamines; use of tyrosine as a supposed brown fat activator substance because of its supposed noradrenalin relationship; and use of lysine and arginine in balance—lysine as an antiviral substance, arginine as an inotropic agent which tends to stimulate the thymus gland output of thymosin which is an immune-activating hormone. "These are all exciting areas that require some technical competency on dose, how they work, their route of administration and dose schedule—things you should have in the back of your mind even though you're not going to prescribe for treatment."

Bland also mentioned chromium, selenium, manganese, copper and zinc. "All of these have their own specific types of physiological functions. What you have to have at your fingertips or memory tips is some little vignette on each of those minerals, their bio-availability, the foods that they come in, why they are commonly the most deficient elements in the standard American diet. Eighty percent of them are lost by processing whole grains to white flour products. In the high-sugar, high-fat diets, where two-thirds of the calories come as sweet fats, there are very few trace elements. So there is a major area that the nutrition products industry can say something very well substantiated about the quality of the American diet."

He also listed fish oils, linseed oil, antioxidants, free radical pathology, antioxidants, chain-breaking

antioxidants, lipid peroxides, rancidity factors, glutathione, coenzyme Q, superoxide dismutase, betaine hydrochloride, intestinal ecology, toxic bowel, and high-fiber foods.

Bland advised that adding "high-tech" in the form of journals, topical literature files, slides and audio tapes "would show people you are really looking at the science of nutrition." But he warned: "It is very easy to give up the high-touch type of format that makes this industry unique. It's extremely important not to compromise personal attention for technical expertise. A person really wants to have their needs dealt with by a caring, humanistic salesperson who has some level of competency, but I would say the competency is second to the personal concerns. If we trade off technology for concern then we've made a real bad mistake about the direction of this industry."

"A few well informed, highly motivated consumers are your best advertising and sales force. My mother, who is a tremendously zealous advocate of nutritional products, has virtually made one of our health food store's business. She goes to all of her clubs and her social events. She is a missionary, saying 'You ought to be down there talking to the local health food place.' Because they have confidence in my mother, that kind of word-of-mouth confidence-builder then comes back to you. It is like training hundreds of salespeople to go out in the community."

When asked about the value of hair analysis, Bland replied: "Nutritional assessment is certainly justified on the basis of nutrition education and information either by computer, diet scan, or whatever diet technology you use. This is a valuable part of your service that customers may not be getting anywhere else, probably not from a doctor, for very few doctors are doing nutritional scans or evaluations. Hair analysis and similar diagnostic or prognostic screening tools have no place in a standard health food store. If you are into education or community service, the last thing you need is to be stigmatized as a quack or repository of cultist information. So by staying away from hair analysis and putting that into the hands of professionals who are licensed to do so, you can do your job best: education transfer, information, and nutritional counseling."

Another retailer asked about the limits of advice: "A lot of people come into the store seeking alternative medical answers. For example, two weeks ago, a friend of mine came in and said he had gallstones. I told him my wife's father had had gallstones, had refused surgery, and went through a specific treatment that worked. It wasn't a wives' tale. It worked. Do you have any comment on how far legally we should or shouldn't go in sharing things like this with customers?"

Bland replied: "If a client asks a question that specific, you need to decide whether he is a client or a friend, and how well you know him. If he is a friend, then I would take him out to lunch, away from your

store and talk to him as a friend. Don't talk as the store proprietor because that would be diagnosis and treatment. No matter what you think you are offering as a service, you are really, by the letter of the law, doing things that could be interpreted as diagnosis and treatment. However, if, as a friend, you anecdotally talk about your experience as a human being, there's no law that prevents freedom of speech."

Ominous implications?

What are the implications of this seminar? What does it tell us about the attitudes of the health food industry? Do retailers really benefit from exposure to a long list of preliminary research findings? What do they do with this information? Are they qualified to understand it, or do they merely absorb clichés for use in selling supplement products? How much do retailers think about their limitations? Do seminars of this sort encourage them to go beyond their limitations? Is there really a difference between giving advice ("prescribing") and steering a customer to a piece of literature that gives

the advice? Does anyone in the health food industry ever suggest that retailers faced with anecdotal evidence try to distinguish between cause-and-effect and coincidence?

And what of Bland? Has he considered that retailers might lack sufficient background to utilize what he talks about? Does he really think they should form opinions and advise customers about types of breast lumps? What is his purpose in mentioning preliminary studies (pertaining to products in their stores) and then saying don't use them yet as a basis for recommending products? Many of his ideas about nutrient needs run counter to those of the scientific nutrition community. Does he deliberately slant his presentations to promote sales of the health food industry's products?

Mr. Fanning is a freelance science writer who produces the nationally syndicated consumer action column, "Help-Mate," and is *Nutrition Forum's* Washington correspondent. He has also been editor and publisher of *Consumer New\$weekly*.

GNC'S DIFFICULTIES CONTINUE

In a strongly worded decision, Federal Trade Commission administrative law judge Montgomery K. Hyun has ruled that advertisements for General Nutrition Inc.'s Healthy Greens were deliberately misleading. The product, a pill containing dehydrated vegetables, vitamins and minerals, had been claimed to reduce the chances of contracting cancer. About 24,000 bottles were sold at prices ranging from \$8.99 to \$12.99. Judge Hyun's order prohibits the company from falsely claiming that the National Academy of Sciences/National Research Council or other research group has found that the use of Healthy Greens or similar products reduces the risk of cancer in humans.

General Nutrition had based some of its ad claims on the 1982 NAS/NRC report *Diet, Nutrition and Cancer*, which recommended that people include adequate amounts of vegetables, fruits and whole-grain cereal products in their diet. But, noted Judge Hyun, the report "specifically states that its recommendations apply only to foods and not to nutrients or supplements." He also concluded that "General Nutrition's unconscionable, false and misleading advertising found in this case is not an isolated incident but in fact part of a continuing pattern." He pointed out that the record contains 14 consent agreements the company entered into with the Postal Service and one with California authorities to settle charges of false advertising of food supplements [see NF 47]. Criminal charges are still pending against GNC for

marketing an evening primrose oil product with illegal claims that it was effective against high blood pressure, arthritis, multiple sclerosis and other ailments [see NF 1:20].

Last year, according to *Health Foods Business*, the company settled two expensive lawsuits brought by other supplement manufacturers. In one case, \$14 million was paid to the William T. Thompson Co. to settle a 7-year-old suit which had accused GNC of advertising Thompson products at a 20% discount in order to drive independent retailers out of business. In the other, GNC paid Nature Food Centers \$3.5 million to settle another antitrust suit. *Health Foods Business* has also reported that General Nutrition closed 20 unprofitable stores last year and plans to shut down more this year. Now able to manufacture more products than it can sell, the company plans to enter the private label market through its subsidiary, General Nutrition Products, Inc.

GNC's difficulties with enforcement agencies appear to have some impact on its marketing practices. Its flyers still exaggerate the need for "nutrition insurance" and falsely suggest that the stress of "traffic jams, arguments, meeting fast-approaching deadlines, or simply trying to decide what to wear at a party" are reasons to supplement with vitamin C and B-vitamins [see *Consumer Reports*, March 1986]. But recent visitors to GNC stores have found no evidence that illegal therapeutic claims are still being made for supplement products.

BRIEFS

Final rules for food irradiation. Health and Human Services Secretary Otis R. Bowen, M.D., has signed final regulations to permit low-level irradiation of fruits and vegetables and increasing the amount of radiation that can be used on dried herbs and spices. Irradiated foods must be labeled "treated with radiation" and contain the international logo of a stylized rose with two petals [see NF 3:23]. Bowen's predecessor, Margaret M. Heckler, had tentatively approved use of the word "picowaved" on the theory that consumers might mistakenly think the food might be radioactive. But critics of this measure thought it was unfair to conceal the fact of irradiation. Low-level radiation can reduce the need for pesticides and inhibit ripening and spoilage, thus extending shelf life and possibly making some foods more available or less expensive [see NF 2:25-27]. Under the new rules, the purpose of the irradiation can be included in the labeling statement. For example, a product label could state: "Treated with irradiation instead of pesticide chemicals to control insect infestation." Bowen urged the FDA and the food processing industry to study further uses of radiation on food.

Kellogg ends factory tours. The Kellogg Company has discontinued tours of its cereal production facilities, which have been open to the public since 1906. The reasons cited were: 1) foreign cereal producers have been trying to copy Kellogg's manufacturing techniques; and 2) the company wishes to reduce the possibility of sabotage like that involving Tylenol tablets.

Doctor sentenced for cancer fraud. Bruce W. Halstead, M.D., has been sentenced to four years in prison and fined \$10,000 after conviction on 24 counts of cancer fraud and grand theft. The sentencing judge indicated that the prison term might be shortened if Halstead ceased all medical activities and abandoned the title of doctor. Press reports indicate that Halstead charged cancer patients \$125 to \$150 per liter for an herbal tea called ADS. Although he maintained that ADS was a "nutritional supplement," analysis revealed it to be 99.4% water and a brown sludge composed mainly of coliform bacteria (the type found in human feces). Halstead, who operated the Halstead Preventive Medical Clinic in Colton, California, has been a leading promoter of laetrile, chelation therapy, and many other questionable practices. Following the trial, which lasted five months, Los Angeles County Deputy District Attorney Hyatt Seligman called him "a crook selling swamp oil." The four-year sentence is probably the longest ever issued to a physician convicted of health fraud. Halstead is appealing it and remains free on \$100,000 bail.

Food prices stable! According to the Food Institute, foods in the nation's grocery stores cost only 1% more in February 1986 than they did in February 1985. But non-food items such as cigarettes, cleaning supplies and health and beauty aids rose an average of 4.1%.

Cigarette company acquisitions. The American Council on Science and Health believes that the main reason that R.J. Reynolds bought Nabisco and Philip Morris bought General Foods last year (the price for each was more than three times book value) was to increase their political power. According to an article in the March/April *ACSH News & Views*, "Television stations and networks which have not been amenable to tobacco industry blackmail since the government banished cigarette advertisements from the airwaves in 1971 could now see heavily advertised products such as BirdsEye frozen food or Fleischmann's margarine used as threats in case they dare report on the health hazards of cigarettes . . . If we see an increase in casual smoking in commercials for products like canned fruit or cookies, it will be because the advertising professionals will have become aware that their ultimate clients are cigarette makers."

Data on food ingredients. Food and beverage companies and manufacturers of food ingredients have formed the International Food Information Council (IFIC) to provide scientists, media personnel and consumers with information about food ingredients. Thomas E. Stenzel, its executive director, has been director of public relations for the National Soft Drink Association. IFIC plans to approach food ingredient issues individually, starting with aspartame. Its address is Suite 300, 1250 Eye St., N.W., Washington, DC 20005 (telephone 202-289-2005).

Mismanaged yeast infection. Two doctors from UCLA medical center have reported the case of a 2-year-old boy who was inappropriately treated by a proponent of "candidiasis hypersensitivity," a concept recently denounced as speculative and unproven by the American Academy of Allergy and Immunology [see NF 3:14-15]. The treatment had been sought because the child had been suffering from fatigue, crankiness, a runny nose and other symptoms supposedly found in this condition as described in the March 1985 issue of *Omni* magazine. Although the youngster actually had chronic candidiasis (a yeast infection), treatment as recommended by leading candidiasis hypersensitivity proponents was ineffective. His infection was subsequently cured by correct anti-fungal treatment administered by the reporting doctors [*New England Journal of Medicine*, March 27, 1986].

Chelation therapy. The American Heart Association has released the following summary statement: "The American Heart Association's Task Force on New and Unestablished therapies has reviewed the available literature on the use of chelation (EDTA) in the treatment of arteriosclerotic heart disease and finds no scientific evidence to demonstrate any benefit of this form of therapy. The Task Force recognizes that there have been no adequate trials using currently approved scientific methodology to support this therapy. Furthermore, employment of this form of unproven treatment may deprive patients of the well established benefits attendant to the many other valuable methods of treating these diseases."

New Pauling book contains dangerous advice! *How to Live Longer and Feel Better* (\$7.95) has been published by W.H. Freeman and Company with an initial printing of 100,000 and publicity that included interviews by Phil Donahue and Merv Griffin. Unlike Pauling's previous books, it recommends chelation therapy for cardiovascular disease and advises adults to supplement their diets with 25,000 IU of vitamin A (an amount that can build up to toxic levels after months or years). Professionals who wish to be prepared for public inquiries about the book can obtain copies for \$7 each plus \$1 postage per order from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105. Payment must accompany all orders.

Antiquackery idea. Dr. John Renner, Chairman of the Kansas City Council Against Nutrition Fraud and Abuse, believes that many people will be protected from nutrition quackery by passage of state laws making it illegal for practitioners to sell vitamins and other supplements in their offices. Virtually all practitioners who do this are promoting unscientific practices. Typically they sell the supplements for two or three times their cost—considerably more than they would cost at a drugstore.

Health food retailer group folds. The Natural Foods Network, begun in June 1984 to provide members with news and scientific information via computer hookup [see *NF* 1-16], has ended operations. Membership had peaked at 165.

Fluoridation promotion. The American Dental Association has decided to set up a demonstration project to promote fluoridation in selected cities. It is hoped that the project will spark renewed national interest in fluoridation and provide a model for other communities wishing to set up a fluoridation campaign.

Notable quote. "The scientific debunker's job may be compared to that of a trash collector. The fact that the garbage truck goes by today does not mean that there will not be another load tomorrow. But if garbage were not collected at all, the results would be much worse."—L. Sprague de Camp [*Skeptical Inquirer*, Spring 1986].

New fluoride regulations. On March 17 the U.S. Environmental Protection Agency (EPA) announced final standards for naturally fluoridated drinking water supplies. The upper limit is now 4 parts per million (ppm), approximately double the previous allowable level. (In areas where fluoride is added to drinking water to prevent tooth decay, the usual concentration is 1 ppm.) Communities with naturally high concentrations of fluoride—most of which are in Texas and South Carolina—had asked EPA to raise the upper limit because fluoride removal is costly. Levels above 2 ppm can cause mottling, discoloration and pitting of the teeth. However, the U.S. Surgeon General has concluded that these are cosmetic rather than health problems. The American Dental Association, which agrees with this position, had urged EPA to set no standards at all. Some 280 small towns with a total population of about 200,000 will now be exempted from having to reduce the concentrations of fluoride found naturally in their water. However, suppliers whose level is 2 ppm or higher will be required to notify customers of this fact. Antifluoridation groups have opposed raising the standard and claim that higher fluoride levels can cause serious health problems. The National Resources Defense Council, an environmental group which also opposes higher levels, has asked the U.S. Appeals Court in Washington to review the new standard. South Carolina is suing EPA to have the standards eliminated.

Instant beer? A small French brewery claims to have developed an instant beer—made by adding water to a special syrup—that tastes identical to conventionally brewed beers. According to *Business Week*, the brewery plans to test-market the product in Great Britain and possibly in Saudi Arabia, where alcohol is forbidden.

Free "health food" magazine. *Health Today*, described in recent ads as "the life extension magazine," is claimed to reveal "Nature's way to improve your looks, protect your heart, be more slender, look younger than your years, and be vitally alive." Edited by Lelord Kordel, it contains articles and ads about the supposed wonders of foods and food supplements. Free 3-year subscriptions can be obtained by sending your name and address on a postcard to Health Today, Redford-Box 19268-B, Detroit, MI 48219.

NUTRITION FORUM

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THE IMPACT OF NUTRITION LABELING

Wayne Ellefson

Detailed nutrition labeling made its nationwide debut in grocery stores in 1975 after publication of the FDA's labeling requirements. Its introduction stemmed naturally from growing public interest in diet and health, and from several studies showing that consumers would welcome nutrition information on product labels. Labeling was based partly on the notion that consumers wanted such information to make better purchasing decisions and thus improve their diet. The regulations were designed to satisfy this desire and also to protect consumers from misleading nutrition claims.

Following recommendations of the 1969 White House Conference on Food, Nutrition and Health, the FDA took specific steps to establish regulations with help from many industry and government organizations. As part of the planning process, three label formats were pretested: expressed percentages of U.S. RDA values; stars and color codes; and adjectival descriptions. The final format was based on consumers' clear preference for numerical data.

Since their introduction, labeling regulations have changed little in substance. Infant formula regulations were added following passage of the Infant Formula Act of 1980. Sodium labeling is being required in light of research on sodium's role in hypertension, as well as pressure by medical associations and consumer groups. And cholesterol labeling is under consideration.

Table 1 summarizes key components of the FDA's current labeling regulations for reporting nutrition content. This format is required whenever foods are fortified or carry a nutrition claim on their label. If nutrition labels are used when not required, they must still comply with these regulations. For most packaged foods, ingredients must also be listed. The ingredient used in the largest amount must be listed first, followed by the others in descending order of amount contained. However, the actual amounts do not have to be listed.

After nutrition labels began appearing, researchers from academia, industry and government be-

gan evaluating their impact on consumer behavior. They studied shopping habits, attitudes, and how individuals processed the information.

Many people—particularly those who are health-conscious or on a restricted (low-calorie, low-fat or low-sodium) diet—deliberately seek out nutrition labels, use them to choose products, and fully understand the information they read. The proportion of American shoppers claiming to utilize nutrition labels has increased steadily from less than 10% in 1972 to over 90% in 1981. However, although most people have a positive attitude toward nutrition information, both laboratory and field experiments show that the number of consumers actually using it to make purchase choices is not as large. Many reasons for this discrepancy have emerged from the various studies:

- Although awareness of labels is high, comprehension of the data is not as high.
- Brand loyalty and price can interfere with consumers selecting a product based on nutritional value alone. Price is an issue with lower income buyers, who often do not factor nutrition into their decisions. Also, studies have shown that many food buyers consider nutrition data of less importance than ingredient listings and taste.
- There exists an apparent threshold effect: if nutrition is perceived to be similar among similar products, consumers are less likely to use nutrition information. For example, if consumers perceive all orange juice brands to be similar, then nutrition information is not so important.
- Consumers may use the label to learn initial information about a product. For individuals who use information such as calories in planning their daily diet, the label information may be equally important after the purchase.
- Other aspects of product labeling, such as descriptive terms, can be equally influential. One study

showed that consumers considered such phrases as "sweet and succulent" to be indicators of nutritional quality.

- Nutritional value is not equally important across product classes. For example, nutrition labels may be used more for cereals, which are often purchased for their nutritional value. Candy bars, however, are generally purchased as a snack food, so nutritional value is less frequently an issue.

- Effective use of nutrition information is more likely to effect changes in purchase behavior than individual product labels. In one controlled study, marketing researchers placed placards containing the comparative information in food aisles so they were easily visible when consumers were considering the items listed. In-store purchases of several products were

monitored. When this information was present, products were selected for nutrient reasons 52% of the time and the market share of nutritionally better foods increased up to 8%. The researcher concluded that direct brand comparisons through comparative tables are easier than a comparison of individual labels, because they reduce cognitive effort and memory stress.

A similar but larger 2-year study was run by Giant Foods. Called the "Special Diet Alert," it compared purchases of certain products in 10 stores that utilized shelf placards to flag nutrition and 10 stores that did not. The same information was available in the control stores (or on the products themselves), but was not displayed in a conspicuous manner. The market shares of the products on the placards increased 4-8%.

These two studies indicate that the actual

TABLE 1: Summary of Nutrition Labeling Requirements¹

Description	Reporting Requirement
Mandatory Items	
Serving size	Varies
Servings per container	Varies
Calorie content	0-20 calories to the nearest 2 calories 21-50 calories to the nearest 5 calories 51 + calories to the nearest 10 calories
Protein content	For 1 gram or more, grams per serving to the nearest gram
Carbohydrates	For 1 gram or more, grams per serving to the nearest gram
Fat	For 1 gram or more, grams per serving to the nearest gram
Sodium ²	Milligrams per serving
Percentage of U.S. RDA ³ for protein, vitamin A, vitamin C, thiamine, riboflavin, niacin, calcium, iron	In 2% increments to 10% level 5% increments to 50% level 10% increments above 50% < 2%, indicate by "0" or other appropriate notation
Optional Nutrients (If Naturally Occurring)⁴	
Percentage of U.S. RDA for vitamins D, E, and B ₆ , folic acid, vitamin B ₁₂ , phosphorous, iodine, magnesium, zinc, copper, biotin, pantothenic acid	In 2% increments to 10% level 5% increments to 50% level 10% increments above 50% < 2%, indicate by "0" or other appropriate notation

¹Nutrition information must be presented in this order.

²Sodium content will be mandatory as of July 1, 1986.

³United States Recommended Daily Allowance.

⁴Information on potassium, cholesterol, and fatty acids may also be presented, but if so, it must be included with data on fat.

Source: Code of Federal Regulations, Title 21, Part 101.9 (1985).

method of presenting nutrition data appears to affect consumer behavior. In situations in which the information was made prominent, purchase patterns were altered. Thus it seems that promotional programs are effective with people interested in nutrition but not deliberately seeking information.

Placing nutrition information on packages and labels and in advertisements has improved company and store images. For example, one study showed that nutrition signs placed in the produce section of a West Coast grocery chain gave the store a better overall image. Recognizing this benefit, many producers and retailers use nutrition labels for a marketing advantage:

- The Produce Marketing Association has been involved in the development of programs to allow labeling of fresh produce in grocery stores.

- The McDonald's Corporation regularly tests its products for nutritional value and publishes comparative product and meal information for distribution to consumers.

- Campbell's "Soup is good food" advertising campaign is based on this philosophy.

- Companies such as Del Monte are publishing pamphlets that provide nutrition information on their

products and include recipes and meal suggestions.

- The Potato Board conducted a series of nutrition studies designed to promote the image and value of the potato by showing that it is one of the best vegetables nutritionally. This endeavor has gone a long way in correcting the potato's image as a high-calorie starchy food. The Potato Chip/Snack Food Association is using this approach to promote potato chips.

- The Kroger Company has developed recipes based on nutritional value and uses these recipes to promote products.

Ten years ago, there was a question about whether consumers wanted and needed nutrition labels. Today we ask how they can be most effectively used. From a regulatory standpoint, labels will most likely be modified in response to specific health issues. Regulations should continue to reflect the need to provide information and protect consumers from misleading claims.

Mr. Ellefson is an account executive with Hazelton Laboratories America, Inc., Madison, Wisconsin, one of the world's largest and most respected food testing laboratories.

DR. STARE CRITICIZES DIETARY GUIDELINES

Fredrick J. Stare, M.D., Ph.D., has criticized the 1985 Dietary Guidelines for Americans, issued jointly by the U.S. Departments of Agriculture and Health and Human Services [see NF 3:30-31]. Dr. Stare, who served on the Guidelines' advisory committee, believes that the following would be more precise and comprehensive:

1. Eat a variety of foods from within each of the Basic Four Food Groups, including foods with adequate starch and fiber.

2. Adjust total caloric intake, particularly from fats, to caloric output, so as to reach a reasonable body weight.

3. Whenever possible, drink fluoridated water and beverages made with it.

4. Be prudent in sodium (salt) intake and gener-

ous in calcium intake, particularly after 35-40 years of age.

5. If you drink alcohol, do so in moderation. DON'T DRINK AND DRIVE.

6. Physical activity (exercise) is not a part of diet, but it is the only way to expend the extra calories that are so pleasant to consume—hence moderate, frequent exercise is highly recommended.

7. Enjoy what you eat because eating is one of the pleasures of life and stop worrying about the safety of foods. They are safe.

In the January/February issue of *Nutrition Today*, Dr. Stare revealed that his guidelines had been proposed to the advisory committee but were rejected by a majority.

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BRIEFS

Raw milk report. A comprehensive 2½-year study funded by the raw milk industry has concluded that certified raw milk can contain harmful bacteria capable of causing serious infection and death in infants, cancer patients and other individuals with weakened immune systems. The study, performed by public health specialists from the University of California at Los Angeles, included a comprehensive literature review and interviews with staff members of the California Department of Health Services and officials of the Alta-Dena Dairy (the nation's largest producer of certified raw milk). The researchers have proposed that strong warning labels be required on raw milk cartons and that the effectiveness of the labels be evaluated.

FDA's magazine price halved. FDA Consumer, the agency's outstanding magazine on health, nutrition, safety and law enforcement, now costs only \$9.50/year for 10 issues. Orders should be sent to the Supt. of Documents, Government Printing Office, Washington, DC 20402.

Cooking contest announced. Amateur and professional chefs can compete with their peers for cash prizes in a nationwide cooking contest to be held in over 150 cities early next year. The entry fee is \$100 for professionals and \$50 for others. Applications can be obtained by writing to: U.S. Chefs Open, 150 Second Avenue North, Suite 1700, St. Petersburg, FL 33701.

Procter & Gamble merges with Richardson-Vicks. Procter & Gamble (13.5 billion annual sales) has entered the "natural foods" marketplace by merging with \$1.2 billion Richardson-Vicks. The latter, best known for Vicks, Oil of Olay and Clearasil, also owns California Sun (bodycare products), Mill Creek Natural Care Products, Inc., and Tiger's Milk (candy and snack bars whose formulation has been attributed to Adelle Davis).

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New Zealand girlcott. *Vegetarian Times* reports that peace groups are calling for a "girlcott" to protect New Zealand from possible economic retaliation for banning nuclear-armed warships in its ports. Under the girlcott (the opposite of a boycott), peace-minded consumers are being urged to buy kiwi fruit and other products produced in New Zealand. According to the magazine's editor, Paul B. Obis, Jr.: "Vegetarianism means eating lower on the food chain, better use of the land, more potential food, more healthful foods, an end to slaughter."

Sugar report. The American Council on Science and Health has concluded that "sugars do not pose a threat to health when consumed in the amounts customary in the United States for the past 50 years, with the exception of the role that sugars and other carbohydrates play in promoting tooth decay." For a free copy of the 24-page report, send a self-addressed, stamped (56¢ postage) 4"x9¼" envelope to Sugar Report, ACSH, 47 Maple St., Summit, NJ 07901.

"Clinical ecology" blasted. Practitioners of "clinical ecology" maintain that a broad range of common physical and psychological disorders can be triggered in susceptible persons by low-level exposure to foods, environmental chemicals and natural inhalants. After reviewing evidence submitted by practitioners to support their claims, a California Medical Association task force has concluded that clinical ecology does not constitute a valid medical discipline [*Western Journal of Medicine* 144:239-245, 1986]. The task force also concluded: 1) no convincing evidence supports the hypotheses on which clinical ecology is based; 2) clinical ecologists have not identified specific, recognizable diseases caused by exposure to low-level environmental stressors; 3) their methods of diagnosing and treating such undefined conditions as "cerebral allergy" have not been shown effective; and 4) it would be misleading to consider clinical ecology's methods "experimental" unless its practitioners begin to adhere to scientifically sound research protocols. The task force report notes that because the medical community is unwilling to accept their concepts, many practitioners of clinical ecology are now identifying themselves as specialists in "allergy and environmental medicine." Reprints of the CMA report can be obtained from Linda Ramsey, Director, Division of Scientific and Educational Activities, California Medical Association, P.O. Box 7690, San Francisco, CA 94120.

BOOK REVIEWS

Weight-reduction camps. According to the April Money Magazine, many summer camps now specialize in weight-reduction programs for children and adolescents. Such programs, which include low-calorie diets, exercise and behavior modification, cost over \$3,000 for an 8-week period. Eleven such camps are operated by Weight Watchers, 183 Madison Avenue, New York, NY 10016.

New labeling bill. S. 1699 has been introduced to require food labels to provide more information on the fat and salt content of food products. Called the Nutritional Information Labeling Act of 1985, the bill would amend the Food, Drug and Cosmetic Act to require that labels contain: 1) the specific or common name of each fat or oil; 2) the number of ounces and calories per serving; 3) the total number of grams and calories of fat per serving; 4) the amounts and calories per serving of saturated, polyunsaturated and monounsaturated fat; 5) the amount of cholesterol per serving; and 6) the amount of sodium or potassium if either exceeds 35 mg per serving. The bill's sponsors, Senators Howard Metzenbaum (D-OH) and Paula Hawkins (R-FL), believe that this information will help consumers reduce their incidence of heart disease and cancer.

Turkey facts. Single copies of "Turkey . . . A Naturally Lite Meat" are free to food and nutrition professionals who indicate their title and affiliation and send a self-addressed, stamped (56¢ postage) envelope 6½" x 9½" or larger to: Department of Consumer Affairs, National Turkey Federation, 11319 Sunset Hills Road, Reston, VA 22090. The 20-page booklet illustrates turkey meat cuts and provides cooking tips and cost comparisons with other meats.

Homeopath's license revoked. The North Carolina Board of Medical Examiners has determined that the practice of homeopathy by a licensed medical doctor constitutes unprofessional conduct and justifies revocation of a physician's license to practice medicine. At the same time, it revoked the license of the state's only homeopathic practitioner, George A. Guess, M.D., unless he stopped practicing homeopathy. Homeopathy is based on the unscientific theory that infinitesimal doses of substances which can cause symptoms in healthy individuals can cure sick individuals who have such symptoms. Many health food stores sell homeopathic remedies. The North Carolina State Court has granted Dr. Guess a temporary stay of the medical board's ruling so he can continue to practice until his appeal can be decided by the courts.

Title: The Best Medicine
Authors: Kurt Butler and Lynn Rayner, M.D.
Publisher: Harper & Row, San Francisco
Price: \$32.95 hardcover, \$16.95 softcover

Mr. Butler, who holds a bachelor's degree in physiology and a master's degree in food and nutritional sciences, is co-founder of the Quackery Action Council, a National Council Against Health Fraud affiliate group. Dr. Rayner, a board-certified internist, is assistant professor of medicine at the University of Hawaii's medical school. Together they have crafted an extraordinary 770-page work intended to help people make choices not only for themselves but for their communities as well.

The book has seven main sections: exercise and fitness; nutrition science and mythology; healthy sex and reproduction; common disorders—a prevention approach; drugs and health; controversial alternatives; and consulting a physician. Laypersons will find the authors' approach highly practical. Professionals may find the lucid explanations useful in talking with patients. Those interested in quackery will find a surprising amount of information that is hard to come by.

Title: Abuse of the Scientific Literature in an Anti-fluoridation Pamphlet (1985)
Editors: Colleen Wulf, R.D.H., M.P.H., Karen F. Hughes, R.D.H., M.P.H., Kathleen G. Smith, R.D.H., M.S., and Michael Easley, D.D.S., M.P.H.
Publisher: American Oral Health Institute, P.O. Box 151528, Columbus, OH 43215.
Price: \$13.50

This 210-page report will be useful to anyone interested in promoting fluoridation. It discusses the principal criticisms of fluoridation and examines the references cited to support them in the writings of John Yiamouyiannis, Ph.D., the nation's most active anti-fluoridationist. His pamphlet, "Lifesavers Guide to Fluoridation," which is invariably distributed wherever community fluoridation is being considered, cites 250 references that supposedly back up his claims. However, public health experts who traced the references found that almost half had no relevance to community water fluoridation and that many others actually support fluoridation but were selectively quoted and misrepresented.

Reviewed by Stephen Barrett, M.D.

AN IRREVERENT LOOK AT THE VITAMIN BIBLE AND ITS AUTHOR

James A. Lowell, Ph.D.

According to the advertisements in the newspapers, I was going to learn "How to Live to Be 100 Plus!"

"It's free," said one ad, "and if you are less than a century old, what have you got to lose?" So, since I am not quite that old, off I went, pen and notebook in hand, to a lecture in Tucson conducted by Earl Mindell, R.Ph., Ph.D., "noted nutritionist, pharmacist, lecturer . . . and author of the best selling *Earl Mindell's Vitamin Bible*."

The lecture was sponsored by two Great Earth Vitamin Stores located in the Tucson area. Mindell helped found the Great Earth chain of health food stores, numbering about 200, which is now the nation's second largest. He has also written *Earl Mindell's Vitamin Bible for Your Kids*, *Earl Mindell's Pill Bible*, *Earl Mindell's Quick & Easy Guide to Better Health*, and *Earl Mindell's Shaping Up with Vitamins*—books whose total sales are in the millions.

Mindell claims to hold valid credentials in nutrition. Although he does have a bachelor's degree in pharmacy from the University of North Dakota, his Ph.D. is from the University of Beverly Hills, an unaccredited school which lacks a campus or laboratory facilities. During his speech, Mindell also said that he studied at Rutgers University, but representatives in Rutgers' records office whom I contacted could find no record of this.

Mindell's *Vitamin Bible* was written while he was working toward his Ph.D. His adjunct faculty adviser for the project was James Kenney, Ph.D., R.D., who is currently a nutritionist at the Pritikin Longevity Center in Santa Monica, California. Kenney reviewed the manuscript while tutoring Mindell and told him that it contained over 400 errors, more than 100 of which were important. Kenney told me that most of the errors remain in the published edition. The acknowledgments section of the book recognizes Dr. Kenney for his help and also thanks the American Medical Association, the National Academy of Sciences, the National Dairy Council, the American Academy of Pediatrics, and the Nutrition Foundation, "without whom a project of this scope could never have been completed." However, the fact that all of these prestigious organizations would strenuously disagree with information in the book is not mentioned.

In a section entitled "The Whole Truth," *Vitamin Bible* tells what each vitamin and mineral can supposedly do for you and gives advice for self-treatment with supplements of many of them. For example, it suggests pantothenic acid for tingling hands and feet, vi-

tamin D for conjunctivitis, and calcium for menstrual cramps. This section also promotes substances which Mindell calls "vitamins" B₁₀, B₁₁, B₁₃, B₁₅, B₁₇, P, T, and U. There is no evidence that any of these substances are essential to humans or that supplements of any of them are beneficial. Furthermore, B₁₅ (pangamic acid) and B₁₇ (laetrile) pose health risks. Another section of the book recommends self-treatment with supplements for more than 50 ailments and conditions including acne, bad breath, baldness, headaches, measles, mumps, prostatitis, syphilis, gonorrhea and warts.

In *Vitamin Bible for Kids*, Mindell advises parents who suspect that their child is deficient in any nutrient to consult a "nutritionally oriented doctor" or (if mineral deficiency is suspected) to obtain a hair analysis. Among other things, the book recommends vitamin supplements for acne, bronchitis, athlete's foot, canker sores, chickenpox, clumsiness, colitis, dandruff, diabetes, forgetfulness, impetigo, insect bites, prickly heat, poison ivy, stomachaches, tonsillitis, and warts. For multiple sclerosis, it recommends orotic acid, which Mindell refers to as vitamin B₁₃. And for children "whose little white lies are growing darker," he recommends eliminating sugars, refined starches, and junk foods from the diet and supplementing with B-complex vitamins.

Mindell is co-editor of Keats Publishing Company's "Good Health Guides," a large series of booklets promoting dozens of questionable supplements. His fellow editor is Richard A. Passwater, whose "Ph.D." is from Bernadean University, an unaccredited correspondence school that was never legally authorized to grant any degrees.

Mindell has also written information sheets that are distributed as educational material in health food stores. Although all of them warn that the information they contain "is not intended as medical advice but only as a guide in working with your doctor," it is clear that health food stores are using them to boost product sales by making claims that would be illegal on product labels.

The Lehigh Valley Committee Against Health Fraud has collected more than 60 of these articles dated between 1980 and 1984. Some of them describe how various vitamins, minerals and amino acids function in the body and provide tidbits on research involving these substances. Others promote such products as ginseng, bee pollen, chelated minerals, kelp (to help the thyroid gland), yucca extract tablets (for arthritis), papaya (to help digestion), octacosonol ("the amazing energy sus-

tainer"), and golden seal root (for stomach and liver troubles).

Most of the information sheets are misleading, and many contain errors. In #63, for example, Mindell states that research done at Temple University in Philadelphia found that rats fed dehydroepiandrosterone (DHEA) lost weight. What actually happened was that rats who received dosages 50 times greater than those marketed for humans did not lose weight but merely gained less than expected. Great Earth was one of many companies selling DHEA pills as a "fat fighter" until the FDA ordered all DHEA products off the market in the spring of 1985 [see NF 2:30, 2:46, 2:47].

Flyer #44B suggests that supplements of glucomannan (a plant fiber) are an effective appetite suppressant—which they are not. A previous version of this flyer claimed that studies conducted by Judith Stern, D.Sc., of the University of California at Davis, showed that subjects taking glucomannan lost more weight than control subjects. Actually, no significant differences were found between the two groups, and mention of Dr. Stern was deleted after she threatened to take legal action.

Flyer #4B suggests that supplementation with lecithin can prevent heart disease, aid anemia, strengthen weak muscles, reverse psoriasis, improve memory and balance, and even "appears to help multiple sclerosis." (Mindell sometimes calls lecithin "the Roto-Rooter of the nutritional world" because "it cleans out blood vessel walls.")

Flyer #31 claims that superoxide dismutase (SOD) is an "anti-aging enzyme" which may be effective against arthritis, atherosclerosis, cancer and senility. Even if this were true, SOD in pill form could not possibly be effective. Tests on animals have shown that oral supplementation does not affect tissue SOD activity—a finding easily predictable from the fact that SOD, like all other proteins, would be digested rather than absorbed intact into the body.

Flyers #9A and #9B endorse the theory of Dr. Benjamin Frank that increasing intake of RNA and DNA through dietary measures or supplements will "reverse the aging process." [Dr. Frank's *No-Aging Diet*, popular a decade ago, recommended eating sardines, yeast and other foods rich in these nucleic acids.] Nucleic acids, found in all living matter, are basic to cell reproduction. Like SOD, however, those that are eaten are digested and never reach the cells intact. Moreover, nucleic acids are like specific blueprints. If DNA and RNA from yeasts or sardines could actually work in humans, they would turn them into young yeasts or baby sardines.

Mindell says that everyone should take supplements. He claims that foods from the grocery store are depleted of vitamins and minerals and therefore are nu-

tritionally inadequate. He says that smokers need extra vitamin C, those who drink alcohol need extra B-vitamins, and that women taking birth control pills need extra B₆. During his talk in Tucson, Mindell said he personally takes "20-odd" supplements twice daily. He also said that "natural" vitamins like natural vitamin C with rose hips are better than synthetic ones. Even Linus Pauling, whom Mindell frequently quotes, has pointed out that there is no difference between the two in nutritional value.

Mindell's lecture included advice that is potentially dangerous. He said, for example, that vitamin A is safe in amounts up to 100,000 IU per day and that any potentially toxic doses carry warnings. Neither of these statements is true. Cases have been reported in which daily dosage with 25,000 IU of vitamin A has caused toxic levels to build up in the body over periods of months or years. And supplements of this strength do not contain warning labels.

Mindell also recommended exclusive use of whole grains, saying these cannot be harmful unless massive amounts are eaten. Whole-grain foods are perfectly fine for people who are healthy as long as they don't eat too many of them. However, whole grains contain phytates, which can prevent mineral absorption. Americans with borderline intakes of some minerals could become mineral-deficient by consuming excessive amounts of whole cereal grains and fiber.

Mindell told the audience that 300 milligrams daily of zinc supplementation is safe, but research reported in the *Journal of the American Medical Association* [246:2188, 1978] shows that dosages of more than 150 milligrams daily may cause serious copper loss. According to Dr. Harold Sandstead, a major zinc researcher, people who take more than 50 milligrams of zinc a day should have their copper levels monitored. In fact, it has been reported that supplements of only 15 milligrams per day can cause above-normal copper loss [*Journal of Nutrition* 108:1449, 1976].

At one point during his talk, Mindell tried to persuade a member of the audience to follow his advice rather than that of his doctor by claiming that medical doctors are ignorant about vitamins.

Now retired from active management of his stores, Mindell spends much of his time writing, lecturing and appearing on talk shows. Despite the astonishing number of inaccuracies he has been promoting, his ideas are rarely questioned in encounters with members of the media.

Dr. Lowell, a board member of the National Council Against Health Fraud, is Professor of Life Sciences at Pima Community College, Tucson, Arizona, and writes occasionally for *The Arizona Daily Star*.

MORE HERB RESEARCH NEEDED

Varro E. Tyler, Ph. D.

When experts are asked whether a particular herb is really good for such things as upset stomach, insomnia or headache, the answer is usually, "We honestly don't know," or somewhat less frequently, "It depends." Such responses are necessary because, in most cases, the botanical, chemical, pharmacological, and therapeutic research needed to permit a definitive response has never been carried out. Still, with the popularity which the use of herbal medications has now attained, this kind of research is urgently needed.

The reasons why it is not being done already are complex but basically involve money. Before drugs can be marketed in the United States, they must be proven both safe and effective in human beings. This lengthy, complicated procedure now costs an estimated \$75 million for a single medication. Because most herbs have been around for a long time, the chance of obtaining patent protection on new findings concerning one of them is slight; therefore, the discovery cannot remain the exclusive property of the organization conducting the costly research. This reduces the incentive to conduct such research to nearly zero.

Some research is being carried out, but mainly in developing nations where herbal medicine is an accepted form of treatment. Unfortunately, the studies are often poorly designed and do not yield scientifically valid results.

There are some exceptions. A few technologically advanced nations, such as the German Federal Republic (West Germany), which have a long tradition of using plant-derived drugs, have capable scientists who do produce new and useful answers to some of our longstanding questions about herbs. Let's look at two examples.

Calamus, or sweet flag, the aromatic rhizome (underground stem) of *Acorus calamus* L., has been used since biblical times, primarily as a digestive aid and flavoring agent. Tests conducted in 1967 showed that the volatile oil of Jammu (Indian) calamus produced malignant tumors in rats. This activity, resulting from a high concentration (ca. 75%) of β -asarone in the oil, caused the U.S. Food and Drug Administration to ban calamus for human use in 1974.

Studies carried out since that time in Germany and The Netherlands have revealed that the matter is not as simple as first thought. The oil of a North American variety of *A. calamus* contains no carcinogenic β -asarone; the European type contains relatively little.

and Asian types contain large to very large amounts. So oil from the North American calamus can be used to produce a useful antispasmodic product devoid of any hazard to human health.

For years, a sedative action has been attributed to hops, the scaly, cone-like fruits of *Humulus lupulus* L. Hop pickers working in the field seemed to tire easily; mothers filled small pillows with hops and placed them under their children's heads to encourage sleep. Until recently, no active principle capable of producing this effect had been identified in hops, so the reported activity was thought to result from a placebo effect.

But in 1982, German scientists reported that hops contains a volatile, unsaturated alcohol identified as 2-methyl-3-butene-2-ol. Although it existed only in traces in the fresh plant material, its concentration increased during storage at room temperature until it reached a level of about 0.15% after two years. In rat studies this compound showed a definite sedative/hypnotic effect and, being volatile, could account for the effectiveness of hops pillows. The active principle of hops is also closely related chemically to 3-methyl-1-pentene-3-ol, a hypnotic drug now sold in Europe under the trade name Allotropal.

These are just two examples of potentially fruitful results that can be obtained by applying modern research methods to ancient herbal drugs. Additional studies of this sort are urgently needed to provide definitive answers to questions about these interesting and potentially useful remedies. Much of the advice in this field is simply copied from the writings of the 16th century English herbalist John Gerard or the 17th century English apothecary-astrologer Nicholas Culpeper. Instead of relying on such outdated information, herbal advocates would be well advised to encourage competent researchers to undertake studies in this area. Preliminary work could be carried out with relatively modest financing. If initial findings prove promising, more substantial support might become available from governmental, industrial or private sources, including foundations.

Dr. Tyler, Dean of Purdue University's School of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs.

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THE AMERICAN ASSOCIATION OF NUTRITIONAL CONSULTANTS: WHO AND WHAT DOES IT REPRESENT?

Stephen Barrett, M.D.

"... Whatever your specialty, one thing is certain. If you offer nutrition or dietary counseling as part of your service, you should proclaim your professional status by joining the American Association of Nutritional Consultants. When you display the prestigious A.A.N.C. Membership Certificate on your wall, you make your clients, patients, and professional colleagues aware of your commitment to high standards and professional competence in Nutrition Counseling. And you demonstrate your dedication to the cause of good health through nutrition by supporting your Professional Association."

So states "An Open Letter To All Health Professionals" in recent issues of *The Nutrition & Dietary Consultant*, the monthly publication of the American Association of Nutritional Consultants (AANC), 2375 East Tropicana, Suite 270, Las Vegas, NV 89109. The certificate—printed on imitation parchment paper and complete with gold seal and red ribbon—does indeed look attractive and professional. But those who encounter it would be wise to look closely at what it signifies.

AANC's roots

According to AANC's founder, Henry Holcomb, the group began operations in 1981 as the American Association of Nutrition & Dietary Consultants (AANDC). During 1983, AANDC assumed its current name and absorbed a similar group, the International Academy of Nutritional Consultants (IANC).

IANC was formed in 1979 by Kurt Donsbach, D.C., founder and president of Donsbach University School of Nutrition, an unaccredited correspondence school. Donsbach, dubbed "the vitamin king" by the *Los Angeles Times*, is also board chairman of the National Health Federation, a group which promotes the gamut of unorthodox health practices. In 1970, while Donsbach operated a health food store, agents of the Fraud Division of the California Bureau of Food and Drug observed

him representing that vitamins, minerals and herbal tea would control cancer, cure emphysema (a chronic lung disease), and the like. Charged with nine counts of such illegal activity, Donsbach pleaded guilty to practicing medicine without a license and agreed to cease "nutritional consultation." Currently he is therapy director of the Biogenesis Institute, a Mexican clinic offering "aging rejuvenation," "immune stimulation," and "guaranteed" treatment of arthritis, cancer, cardiovascular disease, multiple sclerosis and other ailments.

Regular IANC membership, which was open to anyone, cost \$10 per year (later raised to \$12/year) and included a subscription to its journal, "Professional membership," which cost \$50 per year, included a directory listing plus a "beautiful certificate for your office." Sustaining membership, \$150 a year, entitled members to a 15% discount on advertising in the journal. Most of the 50 or so sustaining members had commercial interests in methods promoted by the journal. Applicants for professional or sustaining membership were asked to name their professional degree and specialty. However, no questions were asked about the origin of the degree, and no effort was made to check the credentials or reputation of any applicant.

In 1979, IANC began publishing *The Journal of the International Academy of Nutritional Consultants* with a press run of 25,000 copies, most of which were sent free-of-charge to chiropractors. Its first editor was Alan Nittler, M.D., a California physician who had lost his license to practice medicine in 1975 as a result of using unproven "nutritional therapies." After three issues he was replaced by Hans Kugler, Ph.D., president of the International Academy of Wholistic Health and Medicine, and author of *Seven Keys to a Longer Life*. In 1981, the journal was renamed *Health Express*, Donsbach took over as editor-in-chief, and marketing was begun through health food stores and newsstands. During most of 1982, Holcomb served as editor, general manager, and director of sales, while Donsbach was listed on

the masthead either as editorial director or as editor-in-chief.

AANC's membership structure is similar to that of IANC: associate membership costs \$30, professional membership costs \$50, sustaining membership costs \$100, and lifetime membership is \$250. In June 1986, it listed 111 lifetime members. During most of AANC's existence, membership applications have asked nothing about qualifications but noted that "degree initials, if any" would appear on the certificate if included on the application.

AANC's monthly publication

AANC's "journal" has been published under various names and in several formats. It began in 1983 as a tabloid newspaper called *The Nutrition and Dietary Consultant* and was renamed *The Nutritional Consultant* later that year. When IANC and AANC merged, their publications merged to become *The Nutritional Consultant & Health Express* ("The Magazine People Read For Nutritional Advice"). Toward the end of 1984, it was called *Your Nutritional Consultant* ("The Magazine America Reads for Nutritional Advice"). In 1985 it again became *The Nutrition & Dietary Consultant* ("America's Only Journal For The Practicing Professional").

Until recently, Henry Holcomb was designated as publisher and Myra E. Holcomb, who was also AANC's executive secretary, was listed as editor and general manager. The Statement of Ownership, Management and Circulation submitted to the Postal Service in October 1985 listed the two of them as owners and declared a paid circulation of 8,196, down from 12,685 in 1984. In March 1986, however, Henry's name disappeared without explanation from AANC publications and Myra was designated as publisher and editor. At the same time, the journal reverted to tabloid newspaper format in order to save money.

For the first few issues after the merger that formed AANC, its national board of counselors was listed on the journal's masthead with Donsbach as chairman. But a few months later, this listing was dropped and Donsbach's name appeared as one of six contributing editors. At various times, AANC's letterhead has listed seven, eight or nine members on its national board of counselors, one of whom, until recently, was Gary Pace, of Garden City, New York. In July 1985, Pace, who holds a "Ph.D." from Donsbach University, was accused by the New York State Attorney General of misrepresenting his credentials, practicing medicine without a license, and defrauding more than 250 clients. Actions were also begun to stop Donsbach University from marketing its courses to New York State residents [see NF 2:70-71].

Shortly after the attorney general took action, Holcomb notified AANC members in Northeastern states that Pace had temporarily obtained permission to

solicit funds to set up New York and North East chapters of AANC. The notice stated that Pace had announced his election as president of the New York Chapter without actually holding elections, that he had refused to render a financial accounting to AANC headquarters, that he was "illegally circulating a letter on AANC stationery soliciting funds in the name of AANC." Pace was then removed from the AANC board, and Donsbach's name disappeared from the masthead of *The Nutrition and Dietary Consultant*.

AANC says its journal is "edited specifically for you who do now, or plan in the future, to earn all or part of your income through counseling on good health or proper nutrition, and for those of you who offer nutritional advice as part of your overall professional services." Each issue contains articles promoting unproven and unscientific practices as well as ads for questionable products, some of which have been subjected to government enforcement action for misbranding. At various times, AANC members have been promised two monthly journals (each with various names), one geared to professionals and the other to "knowledgeable" laypersons. But as noted above, only one has been published so far.

AANC's directory

AANC's 1986 *National Profile Directory of Nutritional Consultants* lists 686 practicing "professional nutritionists," but states that since listing requires a written request, the list "in no way represents the total membership of AANC which at press time stood at 5,618." (This number is probably inaccurate because it is identical with the number listed in the 1985 directory.) The directory is intended to facilitate member-to-member referrals and is to be distributed free at health shows, seminars, conventions, and other distribution points where it can reach potential clients. Listings include the consultant's name, address, telephone number, tests utilized, modalities offered, and areas of specialization. Nineteen percent of those cited are chiropractors. Nine percent have no listed degree, 12% a B.A. or B.S., 10% an M.A. or M.S., 23% a Ph.D., and 3% a medical degree. The rest displayed one or more of some 40 sets of initials, many of which I could not recognize.

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"Tests utilized" include complete workup by a medical doctor, hair analysis, herbal crystallization, urine analysis, blood analysis, a test to determine metabolic type, a saliva test, iridology, kinesiography, computerized questionnaires, diet analysis, and cytotoxic testing.

"Modalities offered" include acupuncture, acupressure, intravenous chelation therapy, oral chelation therapy, general medicine, detoxification, herbology, homeopathy, hypnosis, naturopathy, nursing, optometry, osteopathy, reflexology, colonic irrigation, chiropractic, dentistry, biofeedback, hydrotherapy, massage, yoga and megavitamin and mineral therapy.

The "nutritional support specialties" are allergies, cancer, diabetic nutrition, drug rehabilitation, endocrine disturbances, general nutrition, geriatric nutrition, hypoglycemia, pediatric nutrition, skin conditions, smoking cessation, sports nutrition, stress management, temporomandibular joint dysfunction, weight control, premenstrual syndrome, prenatal nutrition, heart and blood conditions, digestive problems, and spines, bones, joints.

AANC's directories contain ads similar to those in its journal. The 1985 directory included ads for homeopathic remedies, pau d'arco [a supposed cancer remedy described in *NF* 2:8], amino acid products, two "oral chelation" products that were subsequently ordered off the market, a colonic irrigator, and hair analysis (for which AANC members receive a 36% discount). The current directory includes ads for food supplements and a Mexican hospital where laetrile and other quack treatments are administered.

Anyone can join

It is clear that membership in AANC and its predecessors has been open to anyone. In 1983, Sassafras Herbert (a poodle) became a professional member of AANDC and Charlie Herbert (a cat) secured professional membership in IANC. Both were household pets of Victor Herbert, M.D., J.D., a prominent nutrition scientist. All Dr. Herbert did was submit their name and address plus \$50. According to a story in *The Washington Post*, when a reporter asked Henry Holcomb how Sassafras Herbert could have gained admission to AANDC, he replied that a "membership profile" should have been sent for completion.

The article also quoted Kurt Donsbach as saying that professional members in IANC were required to have "adequate professional background . . . either a degree in the healing arts or a graduate of Donsbach University." The IANC application had asked four questions on professional background, but "Charlie" had left them blank. Despite widespread publicity of the pets' entry into the world of nutritional consultation, their memberships were not cancelled. After the AANDC membership year was up, Dr. Herbert obtained a new "professional membership" in AANC by sending \$50

plus the name and address of another dog.

In January 1985, ads in *The Nutrition & Dietary Consultant* began inviting readers to send for a "Member Application and Qualifications Questionnaire." The application asks for name, address, phone number, school attended, major, degree and year earned, how long the applicant has been involved professionally in the field of nutrition, names of other health associations to which the applicant belongs, and the names of two nutrition-oriented health care professionals who can provide references. After this process began, an individual known to me completed an application under an assumed name, listing a degree from a nutrition diploma mill and providing appropriate references. Membership was granted as soon as the application was received. AANC did write to the persons listed as references—not for information about the applicant, but to ask them to join AANC! Another person I know bypassed the application process and simply sent a \$50 check and the name and address of her pet hamster. She too was notified of acceptance within a few days. The last few issues of *The Nutrition and Dietary Consultant* contain a coupon application for membership which, as in previous years, asks only the applicant's name, address, and "degree initials, if any."

The application for AANC's malpractice insurance policy is also curious. AANC's professional members are eligible for a \$1,000,000/\$3,000,000 policy. The premium varies from \$52 to \$138 according to the number of hours worked per week. But the application asks nothing about the applicant's training, credentials, or type of practice!

"Certification"

AANC's professional members are also invited to become "Certified Nutrition Consultants." According to AANC, "The trademark designation CNC after a Nutritional Consultant's name testifies to the world that the practitioner's qualifications have been certified by his or her Professional Association—that he or she has met professional requirements in addition to, and beyond, normal academic studies and/or professional experience." Some AANC literature refers to an "RNC" designation for "Registered Nutritional Consultant." In June 1986, AANC listed 85 "Certified Nutritional Consultants."

According to an article by Myra Holcomb, CNC applicants must be professional members in good standing in AANC "and have met the high eligibility requirements for membership." However, the CNC application form asks nothing about training, experience or qualifications, but merely requests the names of three professional references (which are not contacted). Applicants must pay a \$150 fee, demonstrate knowledge of practice management and the laws pertaining to nutritional consulting, and pass a self-administered 2,000-question test on general and applied nutrition. They

must acknowledge in writing that information presented in the certification program "is not intended as a substitute for licensed medical care, and is offered for educational purposes only." And they must release AANC "from any damages, claims, or liabilities whatsoever resulting from the information presented." Successful applicants receive an attractive certificate.

The CNC nutrition exam is divided into sections on basic anatomy, principles of nutrition, vitamin therapy, nutrition and common ailments, biochemical individuality, higher nutrition, orthomolecular nutrition, nutrition against disease, diet and disease, child nutrition, geriatrics, acquired body toxins and their elimination, and psychodietetics. Candidates are required to submit a notarized statement that no "second party" helped with the test, but they are given a list of books, purchasable from AANC, each of which can help answer the questions in one section of the test.

The test questions are divided about equally into multiple choice and true/false types. Candidates are

asked to choose "the most accurate" answer even though in some cases, "if the candidate is real sharp and wants to get tricky, he or she might be able to point to special cases or circumstances where none of the choices is correct." Nutrition experts who reviewed portions of the exam at my request have noted that many questions have no correct answer and that the test contains many misspelled words. The clinical significance of some questions—like one about whether whole wheat flour can support the life of weevils—is rather obscure.

"Nutritionist" licensing

As noted in the May 1985 *Nutrition Forum*, dietitians have been spearheading bills to restrict use of the word "nutritionist" to individuals with recognized credentials. Some of the bills also define "nutrition practice" and restrict it to licensed practitioners. This drive was stimulated largely by the rise of unaccredited nutri-

MORE CREDENTIALS, ANYONE?

- The American Nutrition Consultants Association (ANCA), 700 East Green St., Pasadena, CA 91101, established in 1977, is open to "anyone interested in the fields of nutritional science and nutritional consultation, and in developing, perfecting and updating one's scope of nutritional knowledge." ANCA's only requirements for membership are payment of \$35 and completion of an application form which asks for one's name, address, telephone number, gender, age (optional), and spouse's name. Years ago there was an optional question about professional activities; but forms distributed recently no longer have this. Members receive a certificate suitable for framing and a monthly newsletter called *Life Lines*.

ANCA's brochure suggests that "every normal, healthy man, woman and child should seek the advice of a nutritionist for evaluation of his/her nutritional needs." So should people involved in active sports, children, teenagers, pregnant women, persons suffering from chronic diseases such as arthritis and multiple sclerosis, individuals on medication, people with weight problems, people over 60, and people in job or life-related stress situations.

The catalogue for ANCA's unaccredited School of Nutritional Science defines a nutrition consultant as: "one who is trained in the science of dietetics and nutrition for the purpose of providing information to the public as a consultant in the matters of achieving proper dietary regimens for maintaining a state of optimal health. The profession is often practiced in conjunction with the distribution of health foods and food

supplements."

ANCA's president, James D. Flaherty, Ph.D., is administrator and sole faculty member of the school. According to him, "The world is waiting for people knowledgeable in nutrition for the purpose of maintaining a state of optimal health . . . These people have the opportunity of becoming a part of the biggest boon to humanity since time began." His 60-lesson correspondence course, which costs \$495 and must be completed within six months, is composed of material he has written. According to the catalogue, "a Diploma is awarded for satisfactory completion of the course, or a Certificate of Completion for unsatisfactory completion of the course." Flaherty's "doctoral degree" in nutrition is from unaccredited Donsbach University.

All ANCA members and graduates of its school are offered free listing in ANCA's *Registry of Nutrition Consultants*. According to ANCA, "the fact of registration establishes you as a Registered Nutrition Consultant."

- The American Nutritional Medical Association (ANMA), 1326 Dearborn St., Gary, IN 46403, was founded in 1982 to promote increased public understanding and legal recognition of "nutritional medicine and alternative holistic health care." Its manifesto defines nutritional medicine as "that branch of alternative health care which deals with the treatment or prevention of disease through the use of vitamins, minerals, herbs, amino acids, homeopathy, and natural health care education and counseling. This is NOT a branch of

tion schools and organizations such as AANC. The dietitians believe—as I do—that government should try to protect the public against individuals who misrepresent their credentials.

AANC is one of the groups fighting against these bills. It has urged formation of state chapters and has even drafted a model “Nutritional Counselors Licensing Act” of its own. The bill defines “Nutrition Counselor” as someone who charges money for nutrition counseling, nutrition care service, or nutrition education. “Nutrition counseling” includes “assessment of nutritional needs and food patterns . . . and the recommending of appropriate nutritional intake, for both normal and therapeutic needs.”

Section 5(h) of the bill states: “An applicant’s method of study, or educational preparation for the examination, or schools, or colleges, or universities attended shall not be a concern of the [licensing] Board. Such considerations shall be considered discriminatory. Determination of the applicant’s knowledge of nutrition shall be based solely upon results of the written examination.”

What examination? “To facilitate and assist the Board in the writing of the examination,” says Section 6(i), “the Board shall base the examination questions upon the examination (consisting of 2,000 questions) currently in use by The American Association of Nutritional Consultants in its Member Certification program, and upon such tests offered by other nutrition-oriented professional or trade associations, deleting or adding any question the Board deems appropriate.” In other words, the questions are to be supplied by AANC and like groups whose members would presumably have access to them before taking the test.

Section 6(a) states that, “Until such date as the First Board shall provide a written and approved examination . . . any person applying for licensure, who meets all the other requirements as set down in this act and upon the payment of \$100.00 application fee shall be granted a temporary license.” (The “other requirements” are met by being at least 18 years of age, a high school graduate, and of good moral character.) Section 7(c)

(Continued on next page)

allopathic medicine, and practitioners of NUTRIMEDICAL ARTS and SCIENCES should never let their patients think so!”

ANMA offers its members “registration and/or certification in various “alternative health care specialties.” Its members may become Fellows of such august bodies as the American Board of Family Nutrimecists, the American College of Naturopathy, the American College of Otolaryngology, the American Board of Homeopathy, and the American Board of Nutrimecical Obstetricians and Gynecologists. Certification is also available as a chiropractic therapist, massage therapy technician, nutritional medical counselor, nutrimecist, and naturodermacist. (None of these “credentials” is recognized by the scientific community.)

Regular ANMA membership is \$100 for the first year and \$50 per year thereafter, but discounts are sometimes offered. Associate membership costs \$60 for the first year and \$40 thereafter. Although the application asks for education and professional affiliations, these are not verified. Members who recruit new members receive a \$5 commission. The 1986 ANMA Directory indicates that there are about 200 members in the United States. Among those listed are Linus Pauling, Ph.D., Bruce W. Halstead, M.D., and Robert Mendelsohn, M.D. For an additional \$25, ANMA members can join the United Natural Health Association, from which they receive a Certificate of Fellowship.

ANMA operates John F. Kennedy College of Nutrimecical Arts & Sciences (American Nutrimecical

University), which offers a variety of degrees and certificates through correspondence courses. Its 1-year Doctor of Nutritional Medicine (N.M.D.) course costs \$1,895, but ANMA publications indicate that “nonacademic N.M.D. degrees” have been awarded to members who already held a doctoral degree or qualified through other experience. About half of those listed in ANMA’s directory have “NMD” after their name. The 1½-year Doctor of Chiropractic (D.C.M.) course costs \$2,400. The Nutritional Medical Counselor (N.M.C.) course costs \$800. ANMA members receive a 10% discount. Students who pass with lower than a C average are issued a certificate of completion rather than a diploma.

• *The American Holistic Health Sciences Association*, 1766 Cumberland Green, Suite 208, St. Charles, IL 60174, formed in 1979, charges \$70 for first-year membership and \$40 per year thereafter. Upon acceptance, members receive a hand-calligraphed certificate stating that they have “been elected by the A.H.H.S.A. board of examiners as a Fellow of the Society of Nutrition and Preventive Medicine in recognition of the contributions made towards the promotion and advancement of scientific nutrition and preventive healthcare.” Each also receives a certificate from AHSA’s National Board of Registration and Examination stating that he has “completed all required prerequisites . . . and is hereby recorded as a Registered Holistic Practitioner.” Members also receive a free copy of the book *How To Practice Nutritional Counseling Legally Without Being Guilty Of Practicing Medicine Without A License*, by Chester P. Yozwick, C.N.A., N.D., P.M.D.

states that persons employed and supervised by a licensed nutritional counselor do not have to be licensed.

The proposed seven-person board, chosen by the state governor, is to be composed of two licensed nutritional counselors and two public members. Professional members of the first board are to have been practicing nutrition counseling for at least five years. Section 3(k) states that they may not have been officers of "a professional society or trade association of nutritionists or dietitians" during the year prior to appointment. But Section 3(l) states that they cannot have "a financial interest in, or be engaged in, any business or company or employed in such interests involved in the sale of nutrition related products such as food or food supplements." Since most AANC members appear to sell food

supplements, it is unclear who the group expects to be eligible.

Several things are clear, however. AANC is promoting a wide variety of unscientific nutrition theories and practices. Its application process and credentials are a sham. Its members are not required to have any legitimate training. And it wants state governments to allow them to practice as they please.

In my opinion, AANC does have a potentially valuable aspect. Membership in the group is a reliable sign of someone NOT to consult for advice.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 20 books including *Vitamins and "Health" Foods: The Great American Hustle*.

BRIEFS

Amway fine expected. Under a proposed consent decree, Amway Corporation will pay a \$100,000 civil penalty to settle Federal Trade Commission charges that in 1983 the company violated a previous Commission order by making earnings claims for its distributors without disclosing actual average gross income figures. In 1979, the Commission had ordered that whenever the company makes above-average earnings or sales claims, it must disclose clearly and conspicuously either the average earnings of all distributors or the percent of distributors who actually earned the amount claimed. Amway manufactures and markets food supplements and various other products through a multilevel organization in which distributors resell to other distributors or sell directly to consumers. The proposed consent decree is subject to federal court approval.

Aspartame update. Opponents of aspartame lost another round in their efforts to force the FDA to hold new hearings on aspartame's safety when the U.S. Supreme Court refused without comment to hear an appeal by the Community Nutrition Institute and other critics. Last September, a U.S. Circuit Court of Appeals ruled that the FDA had followed proper procedure in approving the sweetener [see NF 2:85]. According to *American Medical News*, recent claims by Dr. Richard Wurtman that 86 aspartame users had experienced seizures have not persuaded the FDA that aspartame is unsafe, but the agency has offered to help set up a controlled study involving some or all of the alleged victims. Meanwhile, however, Dr. Andrew Kulczycki, Jr., of Washington University School of Medicine, St. Louis, has reported confirmation by double-blind studies of allergic reactions to aspartame in five women whose symptoms included hives, itching, rashes and swelling.

The next Herbalife? United Sciences of America (USA), a multilevel company with many prominent scientists on its advisory board, appears to be growing rapidly. According to one of its leading distributors, the company acquired more than 40,000 distributors and had sales in the tens of millions during its first five months of operation. It is selling four products: an antioxidant formula, a fish oil formula, a fiber candy bar, and a powdered meal substitute. The company's introductory videotape, which refers to cancer and heart disease, states (falsely) that USA's products are "a complete nutritional program to protect us from the growing dangers that are threatening the health of our nation."

Meat consumption trends. According to The Food Institute, per capita consumption of poultry advanced nearly 43% since 1970, while red meat consumption fell more than 8% during the same period. Due to slumping demand, prices for all beef cattle in 1985 were at their lowest average in seven years.

Fast foods in hospitals. At least three hospitals have entered joint ventures with fast-food restaurants on their premises. The Children's Hospital of Philadelphia has replaced its visitors' cafeteria with a McDonald's restaurant in its lobby. Abington Hospital, in a northern Philadelphia suburb, has done the same with a Friendly's restaurant. Miami Valley Hospital in Dayton, Ohio, rents space to a Wendy's restaurant under a profit-sharing agreement. Because such arrangements enable hospitals to serve larger numbers of visitors and are also popular with employees and ambulatory patients, hospital administrators predict that they will become increasingly common.

General Nutrition trial. On May 27, the U.S. District Court in Buffalo, New York, denied a motion by General Nutrition, Inc., to dismiss criminal charges against the company and several of its employees. The defendants are charged with violating the federal Food Drug and Cosmetic Act by marketing an evening primrose oil product with claims that it is effective against high blood pressure, arthritis and other diseases [see NF 1:20]. The defendants had claimed that their product is a "food," not a drug, and that claims made for it are protected by the right to free speech. But the court ruled that therapeutic claims made in marketing a product make it a drug under the law and that such claims are illegal unless a product has FDA approval as safe and effective. The trial is scheduled to begin November 3.

Airline meals. A survey of 15 airlines reported in the June 1986 *Nutrition Action Healthletter* found that virtually all offer vegetarian, fruit platter, seafood, low-fat/cholesterol, low- or no-salt, and kosher meals. Some also serve Hindi, Muslim, Oriental, bland, and low-fiber meals. Special meals cost nothing extra but should be requested at least 24 hours before flight time.

Food safety on cruise ships. According to an article in *American Medical News*, outbreaks of gastrointestinal illness have become uncommon as a result of cooperation between the cruise ship industry and the U.S. Centers for Disease Control (CDC), which in 1976 began an inspection program to correct deficiencies in the sanitation systems of cruise ships sailing from U.S. ports. Travel agents can be put on the CDC "Blue Card" mailing list which notes how ships have done on their most recent inspection. To investigate failing scores, agents or prospective passengers can obtain inspection summaries or full reports by specifying ship names and contacting: Office of the Chief, Sanitation and Vector Control Activity, Division of Quarantine, 1015 N. American Way, Room 107, Miami, FL 33132.

International symposium. A symposium on diet and health will take place on October 19-22, 1986 in Alvor, Portugal. Sponsored by the International Life Sciences Institute (ILSI), its purpose is to review the scientific basis of dietary recommendations and the extent to which they may be quantified. The American Dietetic Association is a cosponsor. ILSI is a nonprofit foundation established in 1978 to promote understanding and resolution of major health, nutrition and safety issues worldwide. Its membership includes more than 100 industrial and professional groups. Further information about the symposium can be obtained from Mrs. Gretchen Bretsch, International Life Sciences Institute, 1126 16th St., N.W., Washington, DC 20036.

Beta-carotene supplements. More than 20,000 physicians are still enrolled in an 8-year study to determine whether supplementation with beta-carotene capsules can prevent cancer [see NF 1:7, 1:23, 2:46]. The project's director, Charles H. Hennekens, M.D., of Harvard Medical School, stated recently that no other study in progress or planned is addressing this issue. In a letter to the project's participants, he noted that a positive result would lead to prevention of many deaths, while a conclusive negative result would also be valuable because research energy could then be shifted to more promising issues. He also warned that although no proof of effectiveness exists, beta carotene supplements are being promoted intensively through lay publications and other channels.

QUESTION BOX

Q. Is there any danger in allowing children to drink small amounts of coffee, such as half a cup two or three times a week? Would it be better for them to drink decaffeinated rather than regular coffee?

A. Although there is no conclusive evidence linking moderate coffee or caffeine intake with ill health, it may be sensible to keep coffee out of children's diets rather than displace important foods such as milk and juice. If parents allow their children to drink coffee, a decaffeinated variety is probably better. Because of their low weight, children are more affected by a caffeine dose than are adults. Parents may also be interested to know that of all population segments, children between ages one and five have the highest caffeine intake per kilogram of body weight. Soft drinks are the sole or primary source of this caffeine.

Q. How is coffee decaffeinated? Does the method leave harmful residues?

A. Coffee manufacturers in the United States use chemical solvents to remove caffeine from coffee beans. The most common method involves steaming the beans so that the caffeine is drawn to the surface. They are then repeatedly washed with a chemical solvent to remove the caffeine. The solvent residue is then removed by steaming the beans a second time. Methylene chloride is the solvent most often used in this process. In large amounts, this chemical would be objectionable or even hazardous in the diet. But because no or only insignificant traces of methylene chloride remain on the coffee beans after the second steaming, the FDA approves its commercial use. Ethyl acetate, a chemical found naturally in some fruits, is another solvent used in the decaffeination process. It, too, is harmless in very small amounts.

CONSENSUS ON DIETARY GOALS HOPED FOR

A committee of the National Research Council's Food and Nutrition Board (FNB) is evaluating the health effects of diets and dietary constituents such as fiber, fats and protein. The study's goal is to determine what dietary guidelines for maintaining health and reducing the risk of chronic disease can be formulated on the basis of current scientific evidence, both published and unpublished. In addition, the committee may propose strategies for implementing the guidelines and will identify areas for further research. It is hoped that a detailed scientific report will be available in the Fall of 1988.

On May 13, a public meeting of the committee was held at the National Academy of Sciences to receive comments from a number of invited individuals and groups. Some highlights:

- Lloyd J. Filer, M.D., Ph.D., the new Executive Director of the International Life Sciences Institute—Nutrition Foundation, urged that contributions of genetic background and environmental factors be integrated into the study. He also urged that the study take into account the sensory properties of food, the social aspects of eating, and the effect of food choice on quality of life.

- A. Harold Lubin, M.D., Director of the American Medical Association's Department of Foods/Nutrition and Personal Health, expressed hope that in addition to delineating areas of agreement, the new study would identify research needed to resolve existing controversies. Since exercise is closely related to nutrition and health status, he also suggested that this relationship should receive major emphasis in formulating "preventive nutrition policies."

- Donald J. McNamara, Ph.D., Professor of Nutrition and Food Science at the University of Arizona, cautioned: 1) research on dietary cholesterol requires very careful interpretation because individuals vary greatly in their response to dietary cholesterol; 2) the way cholesterol is lowered may be as important as the blood levels themselves; 3) the common idea that cholesterol-containing foods are "bad" and cholesterol-free foods are "good" does little to educate high-risk patients in effective dietary changes to lower an elevated blood cholesterol level; and 4) individuals who choose a hydrogenated vegetable oil product because it has no cholesterol are not making an effective dietary change.

- Claire M. Wilson, of the Vegetarian Society of the District of Columbia, stated that although 10 million Americans eat meat-free diets, "data on meat abstinence are sparse in relation to the population that requires such information."

- Dr. Suzanne S. Harris, Deputy Assistant Secretary for Food and Consumer Services, U.S. Department of Agriculture, expressed concern that conflicting recommendations given to the public can lead to a loss of credibility in the genuine benefits of a good diet. For this reason, she cautioned that criteria for acceptance of evidence should be stringent, and only conclusions that are clearly sound and have potential for being permanent should form the basis for guidelines for the public. Referring to the 1985 USDA/HHS *Dietary Guidelines for Americans* [see NF 3:30-31 and 3:43], she expressed hope that the new FNB committee would coordinate with other agencies so that public and governmental agencies "speak with one voice" to avoid confusing consumers. She also noted that USDA's Human Nutrition Information Service has gathered valuable information on food composition, nutrient content of the U.S. per capita food supply, eating patterns and food costs.

Data on American eating patterns are gathered mainly through USDA's Nationwide Food Consumption Survey which is conducted every ten years. The next survey, scheduled for 1987-88, will be the largest and most comprehensive ever done by the agency. It will document the eating habits of 15,000 to 17,000 individuals in 6,000 "basic" households, and an additional 10,000 to 11,000 individuals in 3,600 low-income households. Interviewers will utilize portable computers to enter data on age, income and education as well as food consumption. Twenty-eight common nutrients will be tracked.

As part of the government's new Joint Implementation Plan for a Comprehensive National Nutritional Monitoring System, the resulting data will be coordinated for the first time with surveys done by other agencies, including the Department of Health and Human Services' Health and Nutrition Examination Survey (HANES-III). This survey, scheduled to begin in 1988, will include health histories, physical and dental examinations, body measurements, and blood tests to measure vitamin and mineral contents.

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FIT FOR LIFE

SOME NOTES ON THE BOOK AND ITS ROOTS

JAMES J. KENNEY, PH.D., R.D.

In 1982, in an article in the National Council Against Health Fraud's newsletter, I attacked some of the fallacies of Harvey Diamond's faddish approach to nutrition. At the time, he was touting "food combining" in seminars called the "Diamond Method." I concluded by stating that from a scientific viewpoint this method was "pure zirconium crystal." Little did I suspect that Diamond and his wife, Marilyn, would later produce the fastest-selling diet book in U.S. history: *Fit for Life* [Warner Books, 1985], which reportedly has 1.8 million copies in print.

Since my little exposé was published, the Diamonds have polished their act enough to become stars of the TV talk show circuit. Perhaps to enhance their brilliance, Harvey obtained a "doctorate in nutrition science" and Marilyn obtained "certification in nutrition counseling" from the American College of Health Science (also called the American College of Life Science). This is an unaccredited correspondence school in Austin, Texas, which teaches a naturopathic philosophy called "Natural Hygiene."

Environmental Nutrition Newsletter calls *Fit for Life* "typical of the new wave of books that intertwine scientific detail with pure nonsense." Other best sellers of this type include *Life Extension* by Durk Pearson and Sandy Shaw, *Dr. Berger's Immune Power Diet* by Stuart Berger, M.D., and *Eat to Win* by Robert Haas. All of these books have made millions for their authors and their irresponsible publishers, largely as a result of appearances on the Donahue and Merv Griffin shows.

Fit for Life's central premise is that nutrition depends more on when and how you eat rather than what or how much you eat. The book has two sections. The first, written in Harvey's "voice," covers the principles upon which the book is based. The second, written in Marilyn's "voice," describes their dietary program and provides recipes and sample menus.

In Part I, Harvey maintains that *Fit for Life* is not a diet but "a way of eating that can be incorporated into your life-style as a way of life, not as a dogmatic regimen." But he promises that those who are "sick and tired of hassling with their weight" can learn to "eat and enjoy it, always feeling satisfied and not deprived, always looking forward to meals, and most important, *always* maintaining a comfortable body weight." Moreover, he offers "permanent results" and claims that he lost 50 pounds within a month of being introduced to Natural Hygiene. In Part II, Marilyn presents her testimonial:

"At the age of 31 . . . I spent much of my time in tears, wondering how I was ever going to feel well enough to get on with my life. No amount of drugs, treatment, or therapy that I had had over the years had done anything to change or improve my situation. In all that time . . . no one ever asked me what I was eating! Harvey did! Natural Hygiene, as Harvey was teaching it, supplied me with answers about my health that I had all but given up on finding . . . I learned that I was in pain and out of energy because I had been overtaxing my system with the *wrong kinds of foods* . . . When I put into practice the principles Harvey recommended, I lost twenty pounds! In a matter of only six weeks, and for the first time in my adult life, I was proud of and comfortable with the shape of my body."

Harvey Diamond says his interest in Natural Hygiene was aroused in 1970 by a man who "explained in a most concise way why I was fat and why I was having such a struggle losing weight and keeping it off. It all made such sense to me that I was dumbfounded at its obvious simplicity." After 3½ years of study with this man (who wishes to remain anonymous), Harvey determined that the teaching and practice of Natural Hygiene would be his life's work.

According to Diamond, Natural Hygiene has ancient roots, but its modern movement began in the

United States in about 1850 with the work of Sylvester Graham and three other medical doctors. During the 20th century, the most prominent promoter was Herbert M. Shelton, D.P., N.D., IN.T., D.N.Sc., who from 1928 to 1981 ran a "health school" which included a clinic, laboratory and teaching program in San Antonio, Texas. In *An Introduction to Natural Hygiene* (1922, 1954, 1963), Shelton said that all medicines are "poisons" and that "any patient who can get well in spite of drugs can get well much sooner and more satisfactorily Hygienically." He advised that eating more than one type of food at a meal is undesirable. He claimed that when people are ill, the food they eat will putrify and ferment instead of being digested. And he claimed that fasting is a safe and valuable method of ridding the intestines of putrified and fermented foods. Shelton died on January 1, 1985, at the age of 89.

Like other cults, Natural Hygiene offers simple solutions to life's complex health problems. In *Fit for Life*, the main problem addressed is unwanted pounds and the simplistic answer is food combining. The book's food plan calls for eating only fruit in the morning and mostly vegetables during the rest of the day. This could lead some people to make a desirable increase in their intake of vegetables. But according to an analysis by Katherine Mulgrave, a nutrition professor at the University of Maine, the *Fit for Life* diet is low in calcium, zinc, iron, and vitamins B₁₂ and D. Readers inspired to embrace Natural Hygiene by abandoning modern medical care will, of course, be at even greater risk.

On September 21, 1982, the *Los Angeles Daily Journal* reported that a federal court jury had awarded \$873,000 to the survivors of William Carlton, a Los Altos man who died after being on a diet of distilled water for 30 days at Shelton's Health School. According to the article, Carlton had died of bronchial pneumonia resulting from a weakened condition that also caused him to lose 50 pounds during his last month of life. The article also stated that he had been the sixth person in five years to die while undergoing treatment at the school, which closed in 1981.

Fit for Life is also based on the ideas of John H. Tilden, M.D., author of *Toxemia Explained* (1926). According to Harvey Diamond, "Tilden's book is considered the tour de force in the field of Natural Hygiene" and explains how "toxemia lays the foundation for putting on excess weight." According to Tilden's theories: 1) toxic waste material is retained if the body does not have sufficient energy to excrete it; 2) common cooking practices create food that is incompletely digested and leaves a toxic residue; and 3) accumulated toxic waste causes overweight. Diamond also explains how: 1) eating foods in the wrong combinations causes them to rot so they cannot be assimilated; 2) combinations such as meat and potatoes, eggs and toast, bread and cheese, or chicken and noodles are "a contributing factor to why

people in this country are dying at age 50"; 3) some foods "cleanse" the body while others "clog" it; 4) eggs rot in the body; 5) refined sugars also ferment and produce acids even when consumed alone because refining strips "every vestige of life" from the sugar; and 6) fruits and vegetables, being high in water content can wash and cleanse the body of toxins—but when fruit is eaten at the end of a meal, its absorption is blocked and it ferments.

Actually, all sugars, whether refined or present in fruit, are almost entirely absorbed in the small intestine. But Diamond declares that "fruit should never be eaten with or immediately following anything"—a rule he calls "unquestionably the most important aspect of *Fit for Life*." Actually, fruits contain pectin, which is fermented. If the Diamonds' theory that fermentation products cause obesity were correct, eating fruit would increase obesity rather than cure it!

Like most advocates of "natural" methods, Diamond repeats a number of "nature-is-best" myths. For example, he claims that "animals in nature are magnificently healthy in comparison to the health that we humans experience." but that pets and zoo animals develop "many of the problems of humans." The fact is that most animals in nature are infested with parasites and succumb to infections and malnutrition. It is only because predators usually kill sick animals that we don't see them stumbling across the plains and through the jungles. Perhaps it has never occurred to Harvey Diamond that the average American lives much longer than any mammal in the wild. The reason pets and zoo animals develop debilitating diseases is because they live much longer than their wild "cousins."

Diamond also claims that many people live well past 100 in various remote areas of the world because they eat "high-water" foods. As evidence for this supposed longevity, he cites a 1973 *National Geographic* article in which Alexander Leaf, M.D., was interviewed following trips to three such areas. (Dr. Leaf is chairman of Harvard Medical School's Department of Preventive Medicine and Epidemiology.) However, in an editorial in the August 1982 *Journal of the American Geriatric Society*, Dr. Leaf explained how further investigation had revealed that many individuals had been

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exaggerating their age in order to enhance their social status or to promote tourism.

The American College of Life Science, where Diamond got his "doctoral" degree, was formed in 1982 by its current president, T.C. Fry, whom Harvey calls "today's most eminent, active proponent of Natural Hygiene . . . a most brilliant spokesperson for health." Although Fry obviously has high native intelligence, he admitted in a recent radio debate that he was a high school dropout. He also told me that viruses do not exist and that it was just coincidence that smallpox and polio epidemics ceased when people were immunized against the viruses that cause these diseases.

According to the Life Science catalog (a booklet called *Careers in Health*), "Whereas medical practitioners look to drugs . . . Life Science presents an entirely different approach. We hold that exuberant and radiant health is normal and natural. We hold that suffering and ailments are abnormal, unnatural and unnecessary . . . Cease to indulge in the causes of disease and disease will not occur." The catalog also claims "you can become an expert nutritionist in less than a year" by taking the school's 111-lesson correspondence course. Students can acquire a certificate of proficiency after 32

lessons, a "bachelor of science degree" after 58 lessons, a "master of science degree" after 84 lessons, and a "doctor of philosophy degree" in nutrition science at the end.

Presumably flushed with the success of his star pupils, Fry announced this year that tuition for his nutrition course would rise from \$875 to \$1,250 and that graduates could expect to earn \$500 to \$1,000 per month from home on a part-time basis. But the future of his school is uncertain. In 1982, the Texas Commissioner of Higher Education ordered Fry to "cease and desist advertising or otherwise offering degree programs without a Certificate of Authority from this agency." Fry replied that his school was exempt from the law because it was a religious institution but later said that it had left the state. In 1986, when it became clear that the school was still operating in Texas and would not stop voluntarily, a temporary injunction was obtained forbidding Fry, the College of Life Science, and the American College of Life Science from using the word "College" or granting academic credits or degrees.

Dr. Kenney is a nutritionist at the Pritikin Longevity Center in Santa Monica, California.

BRIEFS

Notable quote: "Fit for Life seems unprecedented in the amount of misinformation contained. It is appalling that such a book can become a best seller in the latter half of the 20th century. Its only socially redeeming feature is that its popularity may alert American educators of their failure to impart the most fundamental knowledge about health and nutrition to students entrusted to their care."—William T. Jarvis, Ph.D., President, National Council Against Health Fraud, Inc.

Book review newsletter. The Chicago Nutrition Association, which has produced several anthologies of recommended and nonrecommended nutrition books, has begun publishing *Guide to Nutritious Reading* to provide current reviews by professional nutritionists. Issues so far have contained 4-6 reviews. Subscriptions are \$5/year for three issues from CNA, P.O. Box 181, Winnetka, IL 60093.

Shelf-life of tea. According to a Lipton spokesperson, teabags can keep for 1½ years. But for peak flavor, they should be stored in an airtight container and used within a year after purchase. In hot, humid climates, or if the tea becomes damp, disease-causing molds can grow on it.

Court supports treatment standards. In a unanimous decision, the Arkansas Supreme Court has upheld the right of a private hospital to prohibit doctors from using megavitamin therapy and other unscientific procedures within the hospital [*Brandt v. St. Vincent Infirmary*, 287 Ark. 431 (1985)]. The judges reasoned that "a hospital's own medical staff can guarantee reasonableness more capably than the courts."

Health fraud team formed. On April 10 a regional health fraud team representing Connecticut, New York, New Jersey, Pennsylvania, Delaware, Virginia, Maryland and the District of Columbia was established by the Central Atlantic States Association of Food and Drug Officials. (AFDO is the national professional organization of state and local government officials whose local work is similar to that of the FDA.) The new team includes FDA officials as well. Its objectives are to educate consumers, collect and share information about health fraud products, prevent duplication of investigatory efforts, develop coordinated strategies against confirmed frauds, advise the news media about proposed ads for health frauds, and encourage the development of local health fraud groups. It is expected that each regional AFDO association will form a similar team.

Free catalogues. A catalogue listing 937 publications sold by the U.S. Government Printing office can be obtained from: New Catalogue, P.O. Box 37000, Washington, DC 20013. Included are 19 publications on food and nutrition and 35 on other health topics. The quarterly *Consumer Information Catalogue* of free and inexpensive publications is available from: M.B. Woods, Consumer Information Center, Pueblo, CO 81009.

Licensing update. Since 1982, 14 states have enacted nutrition licensing laws. While some make it illegal for unqualified persons to call themselves dietitians and/or nutritionists, others define nutrition practice and who is eligible to do it. According to an American Dietetic Association spokesperson, "The speed with which these laws have passed in today's laissez-faire political climate indicates recognition by many legislators that spurious nutritionists are dangerous."

Quackery victim registry. The American Dietetic Association is interested in documenting reports of people harmed by fraudulent nutrition services. The ADA expects that computerizing this information will generate data useful in educating legislators and reporters about the need for greater public protection from unqualified "nutritionists." Professionals interested in providing data should contact: Michele Mathieu, Manager, Licensure Communications, American Dietetic Association, 430 N. Michigan Ave., Chicago, IL 60611 (telephone 312-280-5020).

Supermarkets responsive. According to USDA's *Food News for Consumers*, supermarkets are generally responsive to customer suggestions. Kroger, for example, stopped wrapping its fruits and vegetables when it learned that customers prefer to pick up and feel them before buying. And protests from embattled parents have prompted many supermarkets to eliminate candy displays from checkout aisles.

Fluoride pamphlets. Sample copies of new pamphlets on water fluoridation can be obtained by writing to FLUORIDE, Dental Health Division, Massachusetts Department of Dental Health, 150 Tremont St., Boston, MA 02111 and also to the American Association of Public Health Dentistry, 10619 Jousting Lane, Richmond, VA 23235. Leaders of local fluoridation campaigns can apply for supplies of free educational literature by writing to the American Dental Association Council on Dental Health, 211 East Chicago Avenue, Chicago, IL 60611. The request should state the types of materials, the quantities needed, and how the materials will be used.

Public opinion on fluoridation. The 1985 National Health Interview Survey conducted by the National Center for Health Statistics found strong support for water fluoridation among persons 18 and older in 17,000 households. Eighty percent said it was important to drink fluoridated water from early childhood to prevent tooth decay, and two-thirds even said that long-term consumption of fluoridated drinking water was important for preventing gum disease.

Fluoridation votes. The U.S. Centers for Disease Control has reported that fluoridation referenda were successful in six out of ten U.S. communities during 1985. Although San Antonio citizens voted 42,141 to 39,048 against fluoridation, proponents believe the groundwork has been laid for a successful vote in the future. Following a 2-year educational campaign, a citywide poll of 24,000 voters found that 73% favored fluoridation. But only 19% of those registered actually voted in a special referendum last November. Meanwhile, the British Parliament passed a bill allowing water suppliers to adjust the levels of fluoride when requested to do so by local health authorities.

Organic farm bill update. The Agricultural Productivity Act, passed last year as part of an overall farm bill, calls for \$2 million a year for research into alternative farming methods [see NF 1-6]. However, actual funding will require passage of an appropriations bill which, as of mid-April, was under review by the House Appropriations Committee.

Health fraud surveys. The FDA has asked Louis Harris and Associates to conduct a telephone poll to determine the prevalence and reasons for use of questionable or fraudulent health products. The main interview will involve 1,500 households. Additional questions will be posed to individuals who have used a questionable product during the past year and to individuals with cancer or arthritis. In another survey just completed by C/J Research, Inc., 10,000 randomly selected individuals were sent questionnaires asking about recent experiences with questionable products. Eighty-two percent of respondents said they had encountered an ad during the past year for a fraudulent product or service, and 49% said they or a family member had purchased a product or service that didn't work. Twenty-nine percent said they believe there is a conspiracy among the medical profession to hold back truly effective cures. However, since only 7.2% of those who were sent the questionnaire returned it, the results may not be representative of the population as a whole.

FEDERAL JUDGE BANS SALE OF BLUE-GREEN MANNA

During the past few years, hundreds of products composed of vitamins, minerals, enzymes, plant extracts and/or related substances have been marketed with unproven claims that they can prevent and treat disease. Under federal laws, all products sold with therapeutic claims are considered drugs and must have FDA approval as safe and effective before they are marketed. Since it is illegal to market an unapproved drug, sellers of such products commonly claim that they are foods or food supplements.

One of the most brazen and outlandish promotions of this type has been carried out by K.C. Laboratories of Klamath Falls, Oregon, and its president, Victor H. Kollman. Since 1982, Kollman and the company have operated a multilevel marketing scheme to sell Blue-Green Manna and related products with claims that they are effective against a wide range of health problems.

In 1983, the FDA began a series of legal actions to stop the scheme, but marketing of the products did not stop. Finally, on February 21, 1986, at the agency's request, U.S. District Court Judge Gus J. Solomon issued a permanent injunction ordering all parties involved to stop manufacturing, distributing and selling blue-green algae (spirulina) harvested from Klamath Lake, Oregon. Explaining his decision, the judge said:

"At the trial on January 9, 1986, the government introduced additional evidence of the widespread use of blue-green algae Manna products, and of the therapeutic claims that were made for these products. Victor Kollman denied that he had made therapeutic claims . . . Nevertheless he continued to claim his product has a beneficial effect on the human body . . . as a food, and not a drug. The government showed that taken at the recommended dosage of 1.5 grams, its value as a nutrient is negligible. Further, the cost of the defendant's products, which exceeds \$300 per pound, is so high as compared to other sources of the same nutrients that it is apparent that these products are not and are not intended to be used as a food."

In November 1985, the judge had ruled that the products were misbranded and unapproved new drugs, and had issued a preliminary injunction against their sale. In his recent order, he cited evidence that more than 2,500 persons had been distributing Manna products and making therapeutic claims for them in defiance of the injunction. He also reported that since the injunction was issued, hundreds of distributors had written or telephoned with claims that Manna products have cured them or members of their families of such problems as Alzheimer's disease, heart trouble, skin disturbances, allergies, prostate problems, lack of sex drive, emotional problems, and alcoholism.

At the January trial, the defendants had argued

that because other algae products are sold as foods or food supplements, they too should be allowed to sell blue-green algae as food—changing the packaging, trade name and distribution system if necessary. But the judge ruled that "the demand can no longer be controlled, even if the defendants have a desire to do it."

Stating that Kollman had attempted to mislead not only the court but also purchasers of the products, the judge concluded that a permanent injunction was necessary to prevent the defendants from "benefiting from their past violations by meeting the demand they had created for their products." (In other words, even if unproven claims were stopped, people who believed the previously made claims would still buy the products.) The defendants have appealed their case but will undoubtedly lose again.

Judge Solomon's ruling is important because it supports the FDA's long-held position that "supplement" products for which therapeutic claims are made are subject to agency jurisdiction as drugs even though their promoters call them foods or food supplements. But it also illustrates how an imaginative promoter may remain in business for a few years despite non-criminal enforcement action by the FDA.

Commenting on the case in the *Kansas City Star*, John H. Renner, M.D., noted that "spirulina has a respectable enough history. It was used as a food source by the Aztecs in Mexico and still is consumed in parts of Africa." But in recent years, "natural-food enthusiasts have viewed spirulina as a wonder food because it contains a high percentage of protein and several vitamins and minerals . . . Spirulina is 65% protein, which is quite high when compared with other sources of protein. However, this doesn't mean much because protein varies greatly in quality and digestibility. It turns out that only a small part of spirulina is usable. Moreover, spirulina costs much more than protein from beef, eggs, skim milk and chicken. The vitamins and minerals it contains can also be obtained more economically from other food sources." Claims that spirulina can suppress appetite, provide unusual energy and stamina, and cure numerous illnesses are simply untrue.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

MOCK BEVERAGES ARE BECOMING MORE POPULAR

John R. Dienhart
G. Stewart Eidel

Healthier eating habits, an aging population, alcohol awareness, and crackdowns on drunk driving have greatly increased the market for nonalcoholic beverages. A recent Louis Harris poll for *Business Week* magazine found that 45% of those surveyed were consuming less alcohol than they did five years ago. Many beverage retailers are encouraging the use of non-alcoholic or low-alcoholic beverages as well as responsible drinking, designated driver programs, and the like.

Sparkling water sales have increased 600% in the last 10 years, and sales of other "old-time" nonalcoholic drinks have been rising. Cider is being sold as sparkling cider. Ginger ale is being blended with orange juice and garnished with fresh flowers to make gingemosa. And "virgin" drinks (virgin mary, coherent colada, and mockarita) are becoming more popular.

Beverage manufacturers have been working at a furious pace to develop "mocktails" and mock beers which taste like their alcoholic counterparts. Seagrams spent over five years and \$30 million to develop St. Regis, the first dealcoholic wine to be mass-marketed in the United States. A nonalcoholic, low-calorie wine cooler was introduced to the Florida beverage market by Paradise Fruit Company. The alcohol was removed from a grape wine and combined with fruit juices, NutraSweet, water and carbonation to create an alcohol-free wine cooler with only 18 calories per 12-ounce bottle. More than 30 nonalcoholic versions of imported and domestic beers, labeled as nonalcoholic malt beverages, are currently available.

The hospitality industry is also involved. Holiday Inns has developed a mocktail program that has enjoyed an excellent response. Red Lobster has introduced "thirst-quencher nonalcoholic beverages" to its menu. And Chi Chi's cleverly markets margaritas and coladas as "nada" beverages. The trend is apparent: the American consumer has an increasing desire for healthier beverages with fresh ingredients, attractive appearance, more flavor and less or no alcohol.

Our experience at Purdue University makes it clear that the mocktail market for young adults is quite large. Last year, 102 participants filled out questionnaires while dining in the John Purdue Room, a student laboratory offering formal dining. The survey found that 34% preferred mocktails over cocktails, but 60% would rather dine in a restaurant that offers both nonalcoholic

and alcoholic drinks. Eighty-one percent said the price of a drink does not affect their choice between non-alcoholic and alcoholic drinks. The John Purdue Room began offering mocktails during the summer of 1985. According to its director, Jeffrey Graves, "the response has been excellent—80-90% of the guests enjoy a mocktail."

These figures should really not be surprising, because many people drink in the presence of others for "social" reasons rather than a desire to ingest alcohol. Drinks provide something to do with one's hands, and a way to look busy when conversation lapses.

The health-care industry may also be affected by the increased attention to nonalcoholic beverages. Non-alcoholic specialty beverages have been available for patients for many years. For example, egg-nogs and protein drinks have provided nutrition for the gastrointestinally disabled. However, most of these drinks have been bland, unpalatable and unattractive. This need not be the case in any food service setting if imagination is added to the drink. Improvements can range from nutritious milkshakes for breakfast to sparkling nectar mocktails at afternoon social gatherings. Beverages can be made more appealing through creative uses of glassware, garnishes and service techniques.

Garnishes of fruits and vegetables can add eye appeal and nutrients to any beverage. Garnishing ideas range from vegetable sticks and slices to chunks of frozen fruits. Ideas are available from ordinary cookbooks and pamphlets developed by major suppliers of the food service industry. LeGout has developed mocktail recipes using Equal (aspartame), non-dairy creamer and LeGout drink bases. Perrier has mocktail recipes for cooling drinks served the natural way. V-8 Juice is a ready-to-serve mocktail enjoyed by today's light drinker. A six-ounce portion has only 36 calories and is high in Vitamins A and C.

The mocktail is not a new concept; however, the expanding market for alternatives to alcoholic beverages is new. Party hosts, restaurateurs, bar owners, health professionals, and others involved in providing food or drink to others would be wise to recognize this trend and be prepared to satisfy the growing number of individuals interested in alcohol-free beverages.

RECIPES

Strawberry Squirt (from Perrier)

Fresh Strawberries	6
Vanilla yogurt	1 cup
Chilled Perrier	6½ ounces

Directions: Blend berries and yogurt at high speed until smooth. Stir in chilled Perrier and garnish with a fresh strawberry and serve. To make Strawberry Squirtsicles, pour the Strawberry Squirt drink into a 4 oz. paper cup. Insert a wooden stick in center and freeze. When frozen, peel off paper cup and eat as a frozen pop.

Yield: 2 servings

Breakfast Shake (from Perrier)

Ripe bananas	2
Eggs	2
Papayas, peeled and seeded	2
Honey	2 tbsp.
Low-fat milk	1 cup
Chilled Perrier	6½ ounces
Nutmeg	pinch

Directions: Place first five ingredients in blender and blend on high speed until smooth. Stir in Perrier until frothy and add nutmeg.

Yield: 2 servings

New York Deli (from Campbell Soup, a prizewinning recipe by Marie Fattore of New York)

V-8 juice	8 ounces
Dill pickle juice	1 tsp.
Coarse mustard	1 tsp.
Prepared horseradish	½ tsp.
Worcestershire sauce	dash
Salt & pepper	to taste

Directions: Shake ingredients together and pour over crushed ice. Serve with a pickle spear.

Yield: 1 serving

Chocolate Cinnamon Coffee (a LeGout mocktail)

Hot strong coffee	7 ounces
Non-dairy creamer	1 ounce
Cinnamon powder	¼ teaspoon
Unsweetened cocoa powder	1 teaspoon
Equal low-calorie sweetener	2 packets
Garnish: Cinnamon stick	1 stick
Whipped topping	1 dollop
Cinnamon powder	1 sprinkle

Directions: Combine all ingredients and stir well. Pour into a coffee mug, garnish and serve.

Yield: 8 ounce drink

Calories per serving: 54

For additional recipes:

Drinks Without Liquor, by Janet Brandt (\$5.95)

Workman Publishing, 1 West 39th St., New York, NY 10018

Drinks for Driving: Non-Alcoholic (\$1.00)

Pillsbury Company, Prevention Resource Center, 2829 VernDale Ave., Anoka, MN 55303

Mocktails, by LeGout

Call 1-800-323-6490, or 1-312-678-1241 in Illinois

The Sunkist Mocktails

Sunkist Growers, P.B. 7888, Van Nuys, CA 91409

Campbell's V-8 Mocktails

Campbell Soup Company, Attn: Kit Mahon, Box 56A, Campbell Place, Camden, NJ 08101

Nonalcoholic Drinks

Oster Corporation, Attn: Elizabeth Kathart, 5055 N. Lydell Ave., Milwaukee, WI 53217

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BULK FOODS MAY HAVE DOUBTFUL FUTURE

Mark A. Kantor, Ph.D.

The bulk food section of the supermarket faces an uncertain future. Although some stores have been successful in selling these loose, unpackaged foods, other retailers report a decline in consumer interest and are cutting back or eliminating their bulk departments.

Large supermarkets may offer over a hundred bulk food items including breakfast cereals, cookies, pasta, beans, dried fruits, flour, spices, and candy. Snacks and candy are among the best selling items, especially jelly beans, nuts, and fruit/nut mixes. Spices and pet foods are also popular. There is less consumer demand for flour and whole-grain foods. Many supermarkets that used to carry liquid bulk items such as syrup, soy sauce, honey, jam and peanut butter, have dropped them because they were too messy.

Some shoppers like bulk foods because they consider fancy packages and plastics unnecessary. Many are "natural" and "health" food enthusiasts who are used to open bins, since food co-ops and "natural food" stores have been selling products that way for years. But when bulk foods were introduced into supermarkets about five years ago, most shoppers considered them a novelty. Some people hailed buying them as an innovative way to shop. For others, obtaining food from open bins made them think of the "good old days" when life was simpler and the pace was slower.

Ask a dozen people their opinion of bulk foods and you will likely get a dozen answers, from "terrific" to "immoral." Some like the convenience while others say bulk foods are not convenient at all. Lack of sanitation is the number one reason given by shoppers who don't buy them. In a recent survey, more than half the people felt that bulk foods pose a potential health problem and are unsafe. Among this group, 13% said that bulk foods should be banned outright. Another criticism of bulk foods is the lack of proper containers to put them in at home.

Is sanitation really a cause for concern? A recent study conducted in California found that customers usually behave responsibly around the bulk food bins. The researchers observed 857 trips to bins by shoppers in 14 supermarkets. No one dropped a scoop onto the floor, put any foreign material into the food, or coughed into the bin. However, shoppers used their hands instead of the scoop 20% of the time and tasted foods from the bins 15% of the time. Most of the tasters were men.

Children in the bin section do appear to pose a problem. Nearly 3 out of 10 children either play with the food in the bins or insert their hands for a sample to taste. Sometimes children taste food after watching a

parent do it.

Some supermarket executives actually encourage customers to taste food from bins. They view this as similar to a store demonstration. Other managers are opposed to tasting, both because of loss of food and because customers who observe the tasting may decide not to buy from bulk bins.

The success of a bulk food section in a supermarket depends to a large extent on how well the section is managed and where it is located in the store. The more successful ones are kept clean and are well supervised. They are located where there is good pedestrian traffic, since the presence of other customers tends to deter tampering.

The FDA has developed guidelines for marketing bulk food which include provisions for self-closing lids and scoops with attached cords that are kept outside the bins in separate sleeves. This arrangement creates a problem because shoppers may have to struggle to keep the lids open while filling their bags. Bins would be easier to use if they had lids with a latch or magnetic fastener to enable them to stay open. The FDA code also requires bin openings to be 30 inches above the floor to prevent children from reaching their contents. But many children are still able to do so.

Bulk foods appeal to traditional consumer values: the ability to see what is being purchased and select whatever quantity is desired. Consumers also hope that less packaging means lower prices.

Do people really save money by buying bulk foods? Sometimes, but not always. The best savings are usually with herbs and spices and with other purchases weighing one pound or less. Bulk items weighing five pounds or more are usually more expensive than the equivalent amount in a package.

Although many supermarkets are phasing out or discontinuing their bulk food sections because of limited success, Giant Foods of Washington, D.C., is not. This retail chain carries bulk foods in about half of its existing stores in the Washington area and plans to sell them in all of its new stores. The company has reported that buyers of bulk foods are usually "highly educated, wealthy, innovative" shoppers, and not necessarily people with large families looking for bargains.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service. His monthly column, "Food and Nutrition Update" is distributed to 50 newspapers throughout Maryland.

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TWENTY-ONE WAYS TO SPOT A QUACK

Victor Herbert, M.D., J.D.
Stephen Barrett, M.D.

Most people think that quackery is easy to spot. It is not! The modern health quack wears a cloak of science. He talks in "scientific" terms and writes with scientific references. He is introduced on talk shows as a "scientist ahead of his time." He may indeed appear to be knowledgeable. The very word "quack" helps his camouflage by making us think of an outlandish character selling snake oil from the back of a covered wagon—and of course intelligent people wouldn't buy snake oil nowadays, would they?

Well, snake oil isn't selling so well lately. But vitamins? Minerals? "Organic" foods? Stress formulas? Tonics? Oral enzymes? The latest diet book? Bust developers? Devices to increase manhood? Herbal remedies? Bee pollen? Ginseng? B₁₅? Laetrile? Homeopathic remedies? Cytotoxic testing for supposed allergies? Systems to "balance body chemistry"? Megavitamins for mental illness? Business is booming for the health quack. His annual take is in the *billions*!

What sells is not the quality of his products but the quack's ability to influence his audience. To those in pain, he promises relief. To the incurable, he offers hope. To the nutrition-conscious, he says, "Make sure you have enough." To a public worried about pollution, he says, "Buy natural." To one and all, he promises better health and longer life.

How can you tell the difference between an expert and a quack? Here are 21 tips to help you spot the quack.

1. *He uses anecdotes and testimonials to support his claims.*

We all tend to believe what others tell us about their personal experiences. But separating cause and effect from coincidence can be difficult. When someone tells you that product X has cured his cancer, arthritis or whatever, be skeptical. He may not have actually had the condition he names. If he did, his recovery most likely would have occurred without the help of product X. Most single episodes of disease recover simply with the passage of time, and most chronic ailments have

symptom-free periods. Establishing medical truths requires careful and repeated investigation—with well designed experiments, not reports of what people *imagine* might have taken place. That's why testimonial evidence is forbidden in scientific articles and is usually inadmissible in court.

Never underestimate the extent to which people can be fooled by a worthless remedy. During the early 1940s, many thousands of people became convinced that "glyoxylide" could cure cancer. Yet analysis showed it was merely distilled water!

Symptoms which are psychosomatic (bodily reactions to tension) are often relieved by any product taken with a suggestion that it will work. Tiredness and other minor aches and pains will often respond to any enthusiastically recommended nostrum. For these problems, even physicians may prescribe a placebo. A placebo is a substance which has no pharmacological effect, but is given to satisfy a patient who supposes it to be a medicine. Sugar tablets and vitamins are commonly used in this way.

2. *He promises quick, dramatic, miraculous cures.*

The promises are usually subtle or couched in doubletalk—so he can deny making them when the feds close in. Such promises are the quack's most immoral practice. He does not want to know how many people have been broken financially or in spirit—by the elation over his claims of quick cure followed by deep depression when the claims prove false. Nor do quacks keep count of how many people they lure away from proper medical care.

3. *He uses disclaimers couched in pseudomedical jargon.*

Instead of promising to cure your disease, some quacks will promise to "detoxify" your body, "balance" its chemistry, release its "nerve energy," bring it in harmony with nature, or "strengthen your immune system." (Of course he never makes before-and-after measurements of any of these things.) This type of disclaimer serves two purposes. Since it is impossible to measure

the process the quack describes, it is difficult to prove him wrong. Moreover, if the quack is not a physician, the use of nonmedical terminology may help him avoid practicing medicine without a license.

4. *He displays credentials not recognized by responsible scientists or educators.*

The backbone of educational integrity in America is a system of accreditation by agencies recognized by the U.S. Secretary of Education or the Council on Postsecondary Accreditation. "Degrees" from unaccredited schools are rarely worth the paper they are printed on. In the health field, there is no such thing as a reliable school that is not accredited. Since quacks operate outside of the scientific community, they also tend to form their own "professional" organizations. Don't assume that all groups with scientific-sounding names are respectable. Find out whether their views are scientifically based.

5. *He encourages patients to lend political support to his treatment methods.*

A century ago, valid new ideas were hard to evaluate and were sometimes rejected by the medical community. But today, effective treatments are welcomed by scientific practitioners and do not need a group to crusade for them. Quacks place political endorsement ahead of scientific acceptance. Despite lack of evidence that their methods work, the quacks may seek to legalize their treatment and force insurance companies to pay for it.

6. *He says that most disease is due to faulty diet and can be treated with "nutritional" methods.*

This is not so. Ask your doctor or inspect any medical school textbook of medicine. They will tell you that most diseases have nothing to do with diet. Common symptoms like malaise (feeling poorly), tiredness, lack of pep, aches (including headaches) or pains, insomnia and similar complaints, are usually the body's reaction to emotional stress. The persistence of such symptoms is a signal to see a doctor to be evaluated for possible physical illness. It is not a reason to take vitamins.

Some quacks seem to specialize in the diagnosis and treatment of problems considered rare or even nonexistent by responsible practitioners. Years ago hypothyroidism and adrenal insufficiency were in vogue. Today's "fad" diagnoses are "mercury amalgam toxicity" and "candidiasis hypersensitivity." Quacks are also jumping on the allergy bandwagon, falsely claiming that huge numbers of Americans are suffering from undiagnosed food allergies and "diagnosing" them with worthless but lucrative tests.

7. *He recommends a wide variety of substances similar to those found in your body.*

The underlying idea—like the wishful thinking of primitive tribes—is that taking these substances will strengthen or rejuvenate body processes that involve similar substances. For example, "raw glandular therapy" ("cellular therapy") involves substances from

animals that supposedly correspond to the "weakened" areas of the human body. Raw pancreas is given for your pancreas, raw heart for your heart, etc. The quack doesn't tell you that these substances are digested and destroyed by the human stomach and intestines—so they can't possibly do you any good.

8. *When talking about nutrients, he tells only part of the story.*

He tells you all the wonderful things that vitamins and minerals do in your body and all the horrible things that can happen if you don't get enough. But he conveniently neglects to tell you that a balanced diet can provide all the nutrients you need, and that the "Basic Four" system makes balancing your diet simple. All it takes for adults is a daily average of four servings of grains, four servings of fruits and vegetables, two of milk products, and two of meat, fish, poultry, eggs, nuts or legumes. (See NF 2:44-45 for further details on the Basic Four Food Groups.)

9. *He claims that most Americans are poorly nourished.*

This is an appeal to fear which is not only untrue, but ignores the fact that the main forms of bad nourishment in the United States are undernourishment among the poverty-stricken and overweight in the population at large, particularly the poor. Poor people can ill afford to waste money on unnecessary supplements. Their food money should be spent for nourishing food.

It is being alleged that Americans are so addicted to "junk" foods, that a well-rounded diet is exceptional rather than usual. It is true that some snack foods are mainly "naked calories" (sugars and/or fats without other nutrients). But it is not necessary for every morsel of food we eat to be loaded with nutrients. The small amounts of vitamins and minerals that our bodies require are easily obtained by eating a variety of foods, and most "fast foods" contain substantial amounts of vitamins and minerals. No normal person eating a balanced diet each day is in any danger of vitamin deficiency.

Don't be surprised if one of your friends or neighbors suggests that you buy "nutrition insurance." More than one million Americans have signed up as distributors for companies that sell supplements person-to-person. A typical sales pitch goes like this: "How would you like to look better, feel better and have more energy? Try my vitamins for a few weeks." People nor-

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mally have ups and downs, and a friend's interest or suggestion, or the thought of taking a positive step, may actually make a person feel better. Many who try the vitamins will mistakenly think they have been helped—and continue to buy them, usually at exorbitant prices.

10. *He claims that fluoridation is dangerous.*

Curiously, quacks are not always interested in real deficiencies. Fluoride is necessary to build decay-resistant teeth and strong bones. The best way to obtain adequate amounts of this essential nutrient is to adjust community water supplies so that the fluoride concentration is about one part fluoride for every million parts of water. But quacks are usually opposed to water fluoridation. It seems that if they cannot profit from an idea, they won't support it.

11. *He claims that modern processing methods and storage remove all nutritive value from our food.*

It is true that food processing can change the nutrient content of foods. But the changes are not so drastic as the quack, who wants you to buy his supplements, would like you to believe. While some processing methods destroy some nutrients, others add them. A balanced variety of foods will provide all the nourishment you need.

12. *He claims that soil depletion and the use of "chemical" fertilizers result in less nourishing food.*

This claim is used to promote the sale of so-called "organically grown" foods. If a nutrient is missing from the soil, a plant just does not grow. Chemical fertilizers counteract the effects of soil depletion. Plants do vary in mineral content, but this is rarely significant in the diet. The quack is also wrong when he claims that plants grown with natural fertilizers (such as manure) are nutritionally superior to those grown with synthetic fertilizers. Before they can use them, plants convert natural fertilizers into the same chemicals that synthetic fertilizers supply.

13. *He claims that under stress, and in certain diseases, your need for nutrients is increased.*

While it is true that the need for vitamins may rise slightly under physical stress and in certain diseases, the need almost never rises above the Recommended Dietary Allowance (RDA)—which can be met by proper eating. Someone who was really in danger of deficiency as a result of illness would be a very ill person who needs medical care, probably in a hospital. Although ads for "stress vitamins" imply that they are helpful against emotional stress, that is absolutely untrue.

Many vitamin pushers suggest that smokers need extra vitamin C. While it is true that smokers have somewhat lower blood levels of this vitamin, these levels are still far above deficiency levels. In America, cigarette smoking is the leading cause of death preventable by self-discipline. Rather than seeking false comfort by taking vitamin C, smokers who are concerned about their health should stop smoking. Moreover, since doses

of vitamin C high enough to acidify the urine speed up excretion of nicotine, they may even cause some smokers to smoke more to avoid symptoms of nicotine withdrawal.

14. *He claims that you are in danger of being "poisoned" by food additives and preservatives.*

This is a scare tactic designed to undermine your confidence in food scientists and government protection agencies. The quack wants you to think that he is out to protect you. He hopes that if you trust him, you will buy what he recommends. The fact is that the tiny amounts of additives used to protect our food pose no threat to human health.

15. *He claims that "natural" vitamins are better than "synthetic" ones.*

This claim is a flat lie. Each vitamin is a chain of atoms strung together as a molecule. Molecules made in the "factories" of nature are identical to those made in the factories of chemical companies. Does it make sense to pay extra for vitamins extracted from foods when you can get all you need from the foods themselves?

16. *He claims that sugar is a deadly poison.*

Many recent books and magazine articles would have us believe that sugar is "the killer on the breakfast table" and is the underlying cause of everything from heart disease to hypoglycemia. The fact is, however, that when sugar is used in moderation as part of a normal, balanced diet, it is perfectly safe. In fact, if you ate no sugar, your liver would make it because your brain needs it.

17. *He recommends that everybody take vitamins or "health foods" or both.*

Food quacks belittle normal foods and ridicule the "Basic Four" of good nutrition. They may not tell you how they earn their living from such pronouncements—via public appearance fees, product endorsements, sale of publications, or financial interests in vitamin companies, health food stores or organic farms.

The very term "health food" is deceptive. All food is health food in moderation; any food is junk food in excess. Did you ever stop to think that your corner grocery, fruit market, meat market and supermarket are also health food stores? They are—and they usually charge less for food that is identical or superior to that provided by "health food" stores.

By the way, have you ever wondered why people who eat lots of "health foods" still feel they must load themselves up with vitamin supplements?

18. *He recommends hair analysis for everyone.*

"Health food" stores, mail-order labs and a variety of practitioners suggest this test. For \$25 to \$40 plus a lock of your hair, you can get an elaborate computer printout of vitamins and minerals you supposedly need. Although hair analysis has limited value in the diagnosis of heavy metal poisoning, it is worthless as a screening device to detect nutritional problems. If a hair analysis laboratory recommends supplements, you can

be sure that its computers are programmed to recommend them to everyone.

19. He tells you it is easy to lose weight.

Diet quacks would like you to believe that special pills or food combinations can be of great help to dieters. But the only way to lose weight is to burn off more calories than you eat. This requires self-discipline: eating less, exercising more, or preferably doing both. There are 3,500 calories in a pound of human fat. To lose one pound a week, you must eat an average of 500 fewer calories per day than you burn up. The most sensible diet for losing weight is one that is nutritionally balanced in carbohydrates, fats and proteins. Most fad diets "work" by producing temporary weight loss—as a result of calorie restriction. But they are invariably too monotonous and are often too dangerous for long-term use. Unless a dieter develops better eating habits, weight lost on a fad diet will soon return.

20. He tells you not to trust your doctor.

Doctors, like everyone else, can make mistakes. But the quack, who wants you to trust him, suggests that most doctors are "butchers" and "poisoners."

21. He claims he is being persecuted by orthodox medicine and that his work is being suppressed because it's controversial.

He may also claim that the American Medical Association is against him because his cures would cut into the incomes that doctors make by keeping people sick. Don't fall for such nonsense! Reputable physicians are plenty busy. Moreover, many doctors engaged in pre-paid health plans, group practice, full-time teaching, and government service receive the same salary

whether or not their patients are sick—so keeping their patients healthy reduces their workload, not their incomes.

Any physician who found a vitamin or other preparation which could cure sterility, heart disease, arthritis, cancer or the like, could make an enormous fortune from such a discovery. Not only would patients flock to him (as they now do toward anyone who falsely claims to cure such problems), but his colleagues would shower him with prizes—including the \$190,000 + Nobel Prize! And don't forget, doctors and their families get sick, too. Do you believe that legitimate doctors would conspire to suppress cures for diseases which also afflict themselves and their loved ones?

We don't mean to imply in this article that everyone who promotes quack ideas is deliberately trying to mislead people. One reason why quackery is so difficult to spot is that most people who spread health misinformation are quite sincere in their beliefs. But where health is concerned, sincerity is not enough!

Dr. Barrett practices psychiatry in Allentown, Pennsylvania, and is a nationally renowned consumer advocate. Dr. Herbert is professor of medicine and chairman of the Committee to Strengthen Nutrition at Mount Sinai School of Medicine, and chief of the hematology and nutrition laboratory at the Bronx VA Medical Center in New York City. He is the author of *Nutrition Cultism* and co-author with Dr. Barrett of *Vitamins and "Health" Foods: The Great American Hustle*. In 1984 both of them received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

BRIEFS

Alcohol labeling defeated. A federal appeals court has overturned a lower court decision and ruled that beer, wine and liquor bottles do not have to carry labels listing all ingredients. According to an Associated Press report, a labeling regulation had been scheduled to take effect in 1983 but was held up by Reagan administration attempts to repeal it and a resulting tangle of legislation. The chief proponent of labeling has been the Center for Science in the Public Interest.

Agricultural breakthrough. Paul Williams, a horticulturist at the University of Wisconsin, has developed strains of broccoli, cabbage, mustard and kale that mature, set seed and die within one month. These fast-growing plants can help increase world food supplies and reduce the time needed to carry out genetic experiments.

New interdisciplinary group. The Association for Food and Society (AFS) has been organized to address a broad spectrum of scientific and political issues related to food and nutrition. Among these are world hunger, malnutrition, food policy, population control, diet and health, food as a social statement, ritual uses of food, changing food styles, eating disorders, changing ideal body images, and the food purchasing habits of consumers. The group hopes to bring together the disciplines of nutrition, sociology, anthropology, medicine, psychology, and political science to study these issues. Its projects will include networking, an interdisciplinary textbook, and a professional journal. Its first annual meeting is scheduled for April 3-5, 1987, at Aquinas College. Anyone interested in joining the Society, attending the meeting or presenting a paper at the meeting can get further information from AFS president, William C. Whit, Ph.D., Professor and Chairperson of Sociology, Aquinas College, Grand Rapids, MI 49506.

Quackery report. Dr. James Lowell has updated, referenced and indexed 81 of his columns from the *Arizona Daily Star* and published them as a softcover anthology called *Health Hoaxes and Hazards*. Dr. Lowell, an NF associate editor, is Professor of Life Sciences at Pima Community College and a board member of the National Council Against Health Fraud. Many of the articles are unique because they include quotes from interviews he conducted with quackery promoters. His topics include questionable weight-loss products, cancer quackery, vitamin and mineral supplements, diet and behavior, phony nutrition assessment tests, and dangerous "health" products. Copies are \$12.50 postpaid from James A. Lowell, Ph.D., 5003 E. Cooper, Tucson, AZ 85711.

Food expenditures rise slightly. According to Food Institute reports, Americans spent \$1,182 per capita at U.S. food stores in 1985, up \$39 (3.4%) from 1984. They also spent \$549 per capita at eating and drinking places, up \$22 (4.2%).

Responsibility for drunken acts shifted. Colorado's new tort reform law, which took effect on July 1st, includes a provision placing the responsibility for sobriety in the hands of the drinker and freeing restaurants and party hosts from being liable for the drunken behavior of their patrons and guests. The law was passed in response to skyrocketing liability insurance premiums faced by professionals, businesses, nonprofit organizations, and local governments.

FDA bans sulfites in salad bars. Sulfiting agents have been used to control microorganisms and to delay spoilage in many foods and drugs. They have also been used to keep vegetables looking fresh in salad bars [see NF 2:49-51]. However, the FDA has determined that a small percentage of individuals can experience asthmatic attacks, hives, diarrhea or other symptoms when exposed to sulfites. Most reactions have been mild, but a few deaths from anaphylactic shock have been reported. In July, the agency published regulations banning their use on raw fruits and vegetables. Warning labels are already required when sulfites are added as preservatives in many packaged foods. But labeling will now be required for smaller amounts of sulfites sometimes used in baking and other processes, if the final product contains detectable levels of sulfites (10 parts per million). The new regulations are scheduled to take effect next January. The Bureau of Alcohol, Tobacco and Firearms has proposed that sulfite use in wines and beers be disclosed.

Prevention supports nutritionist licensing. In an article by its editorial staff, the September 1986 issue of *Prevention* magazine has recommended that nutritionists be licensed "to help assure that the nutritionist you consult is well qualified." The article also tells where to get qualified advice.

Fit for Life update. An article in the September 1986 *Vegetarian Times* states that Harvey and Marilyn Diamond, authors of *Fit for Life*, have begun videotaping their methods and are working on another book scheduled for publication next June. They also expect to establish a restaurant in Los Angeles and to open similar ones throughout the nation. The article also says that as a result of the book's publicity, the American College of Health Science (from which Harvey acquired his unaccredited degree) had gained 200 students, bringing its total to 1,800. However, T.C. Fry, the school's dean, has agreed to a permanent injunction barring him from representing his school as a college or granting any more "degrees" or "academic credits" unless he acquires a certificate of authority from the Texas Department of Higher Education. (For further details, see NF 57-59.) He has renamed his operation Life Science Institute ("A Nonprofit Educational Organization") and begun to produce instructional videotapes. In a recent flyer, he said that the Diamonds have been advanced \$1,000,000 for their next book and that he is slated to edit and help document it.

New nutrition center. The National Center for Nutrition and Dietetics has been launched by the American Dietetic Association Foundation (ADAF). Its activities will include a research library, computerized information services, continuing education programs, a nutrition hotline, a speakers referral bureau, professional review of nutrition-related materials, and development of food industry study panels. ADAF was founded in 1967 to carry out the charitable and educational activities of the American Dietetic Association.

Dubious award. Robert S. Mendelsohn, M.D., has received the National Nutritional Foods Association's 1986 Rachel Carson Memorial Award for his "concerns for the protection of the American consumer and health freedoms." (NNFA is the major organization of health food industry retailers, wholesalers and suppliers.) Mendelsohn, a vicious critic of the medical profession, has been active against nutritionist licensure, water fluoridation, and compulsory immunization of children. Previous Carson award winners have included Gloria Swanson, Lendon Smith and Linus Pauling.

Vitamin packs. *Health Foods Business* reports an industry trend toward marketing groups of supplements in plastic packs for daily use. "No longer is it necessary for a person to be well versed in nutrition to select a combination of nutrients from the hundreds of possibilities available. There are now packs tailored to many specific nutritional needs—from arthritis to athletic endurance," the magazine said. Packs commonly cost three or four times as much as ordinary multiple vitamins. Their primary appeal is to serious athletes, but products like "Brain Power Pack" and "Longevity Pack" also sell well.

QUESTION BOX

Q. Does bran supply calories?

A. Bran, the outermost layer of cells of the cereal grains, consists mostly of two types of fiber, cellulose and hemicellulose, which are digested to a large degree by the bacteria that inhabit the large intestine. The bacteria break down the fiber to varying degrees and release products that can be absorbed and utilized by humans for energy. Researchers disagree, however, over how much is absorbed. Absorption depends on different factors such as the types of bacteria inhabiting an individual's intestine and the length of time the material remains in the intestine. So although the breakdown products of fiber may serve as potential energy sources for humans, it is difficult to say how many calories are supplied to any given individual.

Q. What are "free-range" eggs?

A. An article in the January 1986 *Vegetarian Times* states that these come from chickens which are allowed to roam about in an indoor barn rather than being caged. Also marketed as "organically grown" eggs, they are claimed by proponents to be more nutritious and better-tasting. The chickens that produce them are also said to be under less stress. Farmers who agree to follow the guidelines of the Chicago-based Farm Animals Care Trust (F.A.C.T.) are permitted to market their eggs under F.A.C.T.'s "Nest Eggs" label, which signifies that their hens eat a diet free from chemical additives and pesticides. According to the article, free-range eggs cost 2-3 times as much as factory-farmed eggs, but "a growing number of people are willing to back their ethical beliefs with their purchasing dollars—even if it only benefits some chicken in a barn somewhere."

"Twinkie" case #2? The widow of James Huberty, who killed 21 people and wounded 19 others two years ago in a shooting spree at a McDonald's restaurant in San Ysidro, California, has sued the fast-food chain. According to a UPI story, the suit claims that monosodium glutamate (MSG), routinely added to McDonald's foods, was a contributing factor to Huberty's rage. The suit also alleges that Huberty had been poisoned by high levels of lead and cadmium to which he had been exposed while welding metals for an Ohio company which was named as co-defendant in the suit.

Free report on low-calorie sweeteners. The American Council on Science and Health has updated its position paper on aspartame, saccharin and cyclamate, all of which it considers safe. For a free copy of the 44-page booklet, send a self-addressed 4"x9½" envelope with 56¢ postage to Low-Calorie Sweetener Report, ACSH, 47 Maple St., Summit, NJ 07901.

New antiquackery groups. Chapters of the National Council Against Health Fraud have been formed in New York and Florida. Information on their activities can be obtained by writing to NCAHF New York Chapter, 86-39 Woodhaven Blvd., New York, NY 11421 and NCAHF Florida Division, P.O. Box 160, New Port Richey, FL 33552.

New method to identify irradiated foods. Scientists at the National Bureau of Standards (NBS) have developed an extremely sensitive procedure to detect whether or not a sample of meat has received radiation processing. Previously, no reliable method has been available to tell whether a foodstuff other than dried spices has been irradiated. The new technique is expected to work with vegetable matter and seafood as well. In addition, it should be possible to develop a scale to determine how much radiation has been administered. Although food itself does not become radioactive, the total dose of radiation must be carefully controlled to produce the desired effect without damaging the food. The FDA sets maximum exposure limits for the lifetime of food products. These limits present a problem for regulators and food importers who may need to determine whether a shipment has ever been irradiated. While further experiments are needed, NBS researchers are optimistic that their procedure will provide a useful, accurate test. At acceptable levels, irradiation kills harmful microorganisms and insects and extends the shelf life of food by retarding spoilage.

NEW HELP FOR LACTOSE INTOLERANCE

Mark A. Kantor, Ph.D.

For the millions of Americans who have trouble consuming milk because they can't digest lactose, help has arrived. Low-lactose milk products are now available in many supermarkets, and oral lactase tablets have been developed which permit lactose-containing foods to be comfortably eaten.

Lactose ("milk sugar") is a disaccharide (double sugar) found in milk products. It is broken down into its component monosaccharides (single sugars), glucose and galactose, by the intestinal enzyme lactase. These simple sugars are readily absorbed into the bloodstream.

Children usually have adequate amounts of lactase and are able to drink milk without too much difficulty. The main exception are infants who are allergic to the protein in cows' milk and therefore must drink soy-based products or goats' milk. Children may also refuse milk if they don't like its taste, but parents can disguise the milk with flavored syrups or by making it into puddings.

As people grow older, the amount of lactase in the small intestine gradually declines. If the lactase level becomes excessively depleted, some dietary lactose remains undigested in the intestines, causing water to be drawn in from the body. The undigested lactose is also fermented by gas-producing bacteria naturally present in the colon. These conditions result in the characteristic symptoms of bloating, diarrhea, and stomach cramps.

The decline in lactase that occurs with aging is technically known as "lactase nonpersistence" but is commonly called "lactose intolerance." It is probably an evolutionary adaptation which arose because milk was not as necessary for adults as it was for infants.

The age of onset of lactose intolerance varies. Symptoms may begin during late childhood, early adolescence, or not until adulthood. Because the condition is a genetically programmed event, the amount of milk that one drinks during childhood does not influence whether or not the problem eventually develops or its degree of severity.

Worldwide, about 70% of people have some degree of lactose intolerance. In the United States, it is most common among Blacks, American Indians and people of Asian, Middle-Eastern, and East-European Jewish background. It is much less common among people of Scandinavian and Western European ancestry.

The inability to drink milk can create a significant problem for adults because the need for calcium continues throughout life. The adult RDA of 800 mg is difficult to obtain without supplements if dairy products

are excluded from the diet, and experts now advise women to consume even more. Moreover, in addition to its established role in metabolism, calcium is important in helping to prevent osteoporosis and may have a role in preventing high blood pressure and colon cancer in certain individuals.

Fortunately, a low-lactose commercial milk product is available in most supermarkets. The product, called LactAid, is low in fat as well as 70% lactose-reduced. It also comes in a high-calcium version (500 mg/cup) called CalciMilk.

These lactose-reduced milk products contain a lactase enzyme derived from the yeast *Kluyveromyces fragilis*. The enzyme hydrolyzes the lactose of the milk into glucose and galactose which are readily digested. These simple sugars, however, impart a slightly sweet taste to the milk. All the other properties of low-lactose milk are the same as those of ordinary low-fat milk.

LactAid, Inc., also manufactures liquid and tablet forms of lactase enzyme which are sold in some pharmacies. Consumers can produce their own lactose-reduced milk by adding 4-5 drops of liquid enzyme to a carton of regular milk, shaking gently, and letting the carton remain in the refrigerator for 24 hours. Lactase tablets can also be swallowed just prior to eating a lactose-containing food, which enables the enzyme to break down the lactose during the initial stages of digestion in the stomach.

Lactose intolerance is not an all-or-nothing condition. Some people are able to drink one glass of milk with no problems, but develop symptoms if they have a second glass. Most lactose-intolerant people can eat hard or soft cheeses and ice cream without too much difficulty because they contain little or no lactose.

Yogurt is somewhat higher in lactose than milk because milk solids are added to it, but it can usually be consumed by lactose-intolerant people. During the manufacture of yogurt, the lactic acid starter culture produces lactase, which pre-digests some of the lactose. In addition, after yogurt is eaten, the bacteria multiply in the small intestine and produce lactase which digests much of the remaining lactose. In contrast to yogurt bacteria, those in buttermilk and unfermented ("sweet") acidophilus milk do not help lactose-intolerant individuals.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service. His monthly column, "Food and Nutrition Update," is distributed to newspapers throughout Maryland.

SWEET ACIDOPHILUS MILK

Manfred Kroger, Ph.D.

Sweet acidophilus milk may have quietly appeared in the dairy case of your supermarket. Contrary to what its name may suggest, it tastes neither sweet nor acidic. It is simply a low-fat milk to which bacteria called *Lactobacillus acidophilus* have been added. The dairy probably has also added vitamins A and D to the milk and most certainly will have pasteurized and homogenized it.

Why would anyone want another milk product? Is the dairy industry going the way of its soft drink competitors who offer a bewildering number of choices? Not really. There has always been acidophilus milk. But because of its intensely sour and often astringent taste, it did not become popular outside of pockets in Europe and the Near East where it originated.

There is a big difference between acidophilus milk, which has been fermented by bacteria, and sweet acidophilus milk, to which bacteria are added without subsequent fermentation. True acidophilus milk resembles cultured buttermilk and yogurt, and people who love these products may also consume acidophilus milk.

The human digestive system requires the presence of certain bacteria for proper functioning and the owner's well-being. Intestinal bacteria are an important part of the body's immunological defense system and also help prevent colonization by disease-causing microorganisms. Benign bacteria on the inner surface of the intestinal wall produce antigens that stimulate the body's defense system after absorption. We provide the bacteria with a place to live, and they help us stay well. Some bacteria, such as those in yogurt, also generate enzymes that are useful in our digestive processes, especially lactose utilization. Biologists call this mutually beneficial live-and-let-live arrangement *symbiosis*. Loss of the normal intestinal flora, which often occurs after treatment with certain antibiotics, can lead to diarrhea caused by organisms that normally would not thrive.

Decades ago it was established that lactobacilli, bifidobacteria, and certain streptococcal bacteria are

the ones which normally inhabit the human intestine. They also thrive in milk. The process of deliberately growing them in a medium such as milk is called *culturing*. Yogurt, cultured buttermilk and the sour kind of acidophilus milk are true bacterial cultures; they are sold around the world as cultured or fermented milk products.

The reason why cultured acidophilus milk has never conquered the American market is probably its bad taste. But Yankee ingenuity has found a way to bring us the benefit of acidophilus bacteria without the taste problem. About ten years ago, food scientists at North Carolina State University developed a process which allows *Lactobacillus acidophilus* bacteria to be precultured and added to cold milk where they remain viable until the milk is consumed days later. This, of course, enables consumers to ingest the culture without any unpleasant taste. In fact, sweet acidophilus milk tastes like any other low-fat milk. It's called sweet because it isn't sour. No sweetener has been added. The name will mislead some people, but informed consumers look beyond a product's name and learn what's in it and what it does.

Although no specific health claims are made by the producers of sweet acidophilus milk, scientific evidence is accumulating that there may be beneficial effects. It has been found, for example, that *Lactobacillus acidophilus* is capable of lowering the activity of intestinal enzymes responsible for the production of cancer-causing chemicals. However, until more research is done, it is premature to recommend sweet acidophilus milk for the prevention or treatment of any disease. It should simply be recognized as another good dairy product whose consumption in the United States has increased dramatically during the past decade.

Dr. Kroger is Professor of Food Science at The Pennsylvania State University.

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LIFE EXTENSION PART I: THEORIES OF AGING

Jack Z. Yetiv, M.D., Ph.D.

Some people try to achieve immortality through their offspring or their works. I prefer to achieve immortality by not dying.

—Woody Allen

During the past few years, hopes for extending life have been discussed increasingly in both scientific circles and the popular press. This article evaluates scientific theories and some of the strategies they suggest. Part II of this article discusses life-extension books and questionable supplement products being promoted to the public.

Although the terms *life expectancy* and *life span* are often used interchangeably, they mean different things. Life expectancy is the average number of years that people of a certain age are likely to live. In the United States, for example, life expectancy at birth is now 73 for males and 78 for females. Life span is defined as the average length of life of a species, and maximum life span is the maximal age obtainable by a member of a species. Although it has been claimed that some humans have lived more than 150 years, the maximum documented age for humans is about 115 years. Average life expectancy has increased dramatically from about 45 years at the turn of the century to about 75 years today as a result of improved sanitation, nutrition, and medical care. But maximum life span, which appears to be characteristic for each species, has changed little—if at all—over thousands of years.

Theories of aging

Although many theories have been trumpeted as the cause of aging, it is most likely that several mechanisms working together are responsible for the overall process. The leading theories are:

- *Progressive damage to DNA.* Deoxyribonucleic acid (DNA), located in cell nuclei, provide the molecular basis of heredity. From the time cells are created, their

DNA is subjected to damaging environmental influences as well as intrinsic errors in DNA replication. Environmental factors include solar radiation, x-rays, and chemical mutagens and carcinogens. Although animals and humans have mechanisms to repair this DNA damage, the rate of damage is slightly greater than the rate of repair.

This theory holds that aging is the result of multiple DNA defects which exceed recuperative capabilities. It is supported by the fact that cells from people with progeria or Down's syndrome (mongolism) are less able to repair artificially induced DNA damage. Progeria is a condition in which children become aged and die during their teens. Down's syndrome victims live longer, but still have a shorter-than-normal life expectancy. In both conditions, the cells divide fewer times than normal cells do. Cancer cells, on the other hand, appear able to reproduce themselves indefinitely. Perhaps they "know" how to escape or completely repair the random damage discussed above. Proponents of the damaged DNA theory suggest that if the DNA repair mechanisms could be perfected, aging would be forestalled and immortality within reach.

- *Free radical damage.* Free radicals are by-products of many chemical reactions in the body. They are highly reactive and can attack many important cellular components. Unlike DNA damage, free radical damage appears irreversible. Fortunately, however, enzymes such as superoxide dismutase (SOD), glutathione peroxidase, and catalase deactivate free radicals and render them harmless. It has been hypothesized that when these mechanisms are insufficient, tissues in the vicinity of the free radicals are permanently damaged. If this actually happens, it is likely that free radical damage is responsible for only a small part of the aging process.

- *Programmed limit to number of cell divisions.* Unlike the random damage theories above, this theory

and those below relate to the DNA genetic "program" contained within every cell of all animals. This genetic blueprint determines such characteristics as the sex, hair color, height, intelligence, and probably the life span of the individual and the species.

During the early 1960s, Leonard Hayflick observed that human fibroblasts (connective tissue cells) would only divide about 50 times in tissue culture. He concluded that the DNA blueprint allowed only 50 divisions. The fact that fibroblasts from older people undergo fewer divisions than do those from younger persons supports Hayflick's hypothesis of a built-in quota of cell divisions. This hypothesis holds that aging and death occur as the maximum number of all divisions is approached.

- **Immunologic obsolescence.** It is known that immune system function declines as people age. The thymus gland, which was important in the development of certain immune cells (T-cells), shrinks from adolescence onward. Infections become somewhat more difficult to fight and antibody responses to vaccinations are diminished. The immune system also has more difficulty differentiating "self" from "foreign" proteins. When this happens, the body has more difficulty in attacking invading organisms and has a greater tendency to turn upon its own "self" proteins, resulting in autoimmune diseases.

- **Aging clock.** This theory holds that all major events in life, including growth, maturation and aging, are coded in the DNA "tape." A species-specific, chronologically organized script calls out the steps of life like the caller at a square dance. One of these steps is the aging process. This orderly destruction contrasts with the random damage theories described above. However, it does seem logical that nature provides built-in obsolescence for older adults who have already served their primary evolutionary purpose of reproduction.

Life extension strategies

The May 2, 1985 issue of *The New England Journal of Medicine* contains an excellent evaluation of life extension strategies by Edward L. Schneider, M.D., and John D. Reed, Jr., B.S., of the National Institute of Aging. (Reprints of this article, which cites 194 references, can be obtained by writing to Dr. Schneider at the National Institute of Aging, National Institutes of Health, 9000 Rockville Pike, Bethesda, MD 20205.) Here is a summary of the authors' views plus my own:

- **Caloric restriction.** Several studies in animals have shown that cutting their caloric intake by 50-60% can significantly increase maximum lifespan. However, this action also retards their growth and development, so it is not practical for humans. Milder forms of food restriction begun early in life can produce moderate life extension in rats but still result in slight retardation of

growth. Research in humans suggests that being lean is advantageous, but further research is needed to determine whether there is an optimal weight favoring life extension.

Caloric restriction has received almost no attention from promoters of so-called life-extension products. Perhaps this is because "starvation" cannot be sold at a profit and would be quite unpopular as well.

- **Exercise.** It is widely accepted that regular exercise will prolong life. Exercise has beneficial effects on several aging processes as well as on cardiovascular disease. People who exercise regularly tend to be more health-conscious, to weigh less and to be nonsmokers. However, it appears that although exercise is beneficial to health and well-being, it is not clearly related to longevity. Increased life span has been demonstrated in laboratory rodents who began regular exercise programs early in life. So far no studies of this type have been reported with humans.

- **Antioxidants.** Some proponents of the free radical theory recommend supplements of selenium, vitamins C and E, BHT and other free radical "scavengers." Supposedly these substances will delay aging by "soaking up" errant free radicals that have escaped capture by the body's own free radical patrols. Although antioxidants can deactivate free radicals in the test tube, there is no credible evidence that taking them as supplements will extend human life span. No scientific studies have been done in humans, and animal studies so far have been contradictory—a point seldom mentioned by life-extension promoters. It is also significant that the animals in these studies usually lost weight, which means that their increased longevity may have been caused by low weight rather than antioxidant treatment. No studies so far support a recommendation to take megadose antioxidants, especially since any compound can be toxic in large doses.

Several years ago a study of readers of *Prevention* magazine showed no decrease in mortality among individuals taking large amounts of vitamins [*Proceedings of the National Academy of Sciences* 79:6023-27, 1982]. In fact, increased mortality was seen in those consuming more than 1000 IU of vitamin E daily. However, the latter observation could be due to the fact that sicker peo-

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ple may have greater attraction to vitamin supplementation.

- *Superoxide dismutase (SOD)*. Noting that the amount of SOD in the tissues of various animal species appears related to their life span, proponents suggest that consuming SOD supplements may enhance longevity. However, SOD is a protein which, like other proteins, is broken down by the enzymes of the digestive tract. Thus SOD taken by mouth is digested to amino acids and cannot even reach the tissues as intact SOD. Furthermore, it has not been shown that increasing tissue SOD levels is of value; this has actually been demonstrated in mice [American Journal of Clinical Nutrition 37:5-7, 1983].

- *Levodopa*. This drug, commonly used with good results in the treatment of Parkinson's disease, has also been proposed as useful for the aging process in general. Mice treated with near-toxic levels of levodopa have experienced increased survival, but they also had substantial weight loss. Lower doses of the drug had no effect on survival. Thus it is possible that the decrease in weight was responsible for the improved survival. Some studies have found that patients with Parkinson's disease treated with levodopa lived longer than did untreated patients. Yet they still died earlier than the average for their age.

- *Immunologic manipulation*. Many immunologic treatments have been proposed, including the transplantation of immune cells from young animals into old and the administration of thymic hormones. But no such approach has been tested in human beings. Coenzymes Q are another group of compounds proposed as immune stimulators. Part of the rationale is the observation that the levels of these coenzymes in several organs decline with age. There is some evidence that they may enhance the immune response when injected into mice. However, they cannot be recommended for humans because they may also cause organ damage, especially in tissues with poor circulation.

- *Gerovital H-3*. This is one of the most widely promoted "life-extending" nostrums. It is a preparation of procaine hydrochloride (a substance used as a local anesthetic), with benzoic acid and metabisulfite added as preservatives. The only documented effect of Gerovital is a slight antidepressant property. While its Rumanian promoter, Dr. Ana Aslan, has reported life-extending capabilities in rodents, others have been unable to demonstrate such effects. According to an article in the April 1986 *FDA Consumer*, buyers of Gerovital may not even be getting what they pay for. When the FDA analyzed a sample purchased from Peak Health International, a Colorado firm, it contained no procaine hydrochloride.

- *Centrophenoxine*. This drug has been hypothesized to delay aging by decreasing the accumulation of lipofuscin, often referred to as "age pigment." Although

life-extenders theorize that preventing the accumulation of this pigment may prevent the aging process, there is little evidence to support this. In fact, human nerve cells can accumulate large amounts of lipofuscin without any apparent decrease in their function. Thus, although lipofuscin accumulation may accompany aging, it is probably functionally unimportant. An analogy can be made to the skin wrinkling that occurs with aging. Curing this wrinkling (if it could be done) would be unlikely to reverse the aging process.

- *Dehydroepiandrosterone (DHEA)*. This hormone is another compound whose level declines with aging. This fact has led to the speculation that DHEA supplementation will reverse the aging process. Again, just because something changes as one ages does not prove that it plays a role in the process. Although DHEA is a weak male sex hormone, its exact role in the body is unclear. Some animal studies suggest that DHEA administration causes decreased food intake. But blood levels of DHEA in rodents are quite different from those of humans, and DHEA's role in these animals may also differ from that in humans. There are no human studies of DHEA supplementation. Since it is a hormone whose potential side effects are unknown, its intake by "life-extenders" seems inadvisable.

Dr. Yetiv, whose Ph.D. is in pharmacology, is the author of *Popular Nutritional Practices*, reviewed on page 80 of this issue.

QUESTION BOX

Q. What is UHT milk?

A. The term UHT refers to a sterilization process known as Ultra-High-Temperature treatment. This process involves heating the milk to approximately 140°C (285°F) for 1-3 seconds followed by cooling and immediate sealing in germ-free containers. The containers can be held unopened at room temperature for 3-6 months (and thus cost less to store), but refrigeration is essential after opening. Even though the heat treatment is more severe, vitamin losses in UHT milk are not much greater than with conventional pasteurization and still are insignificant. UHT milk can be convenient for picnickers, campers, and people living in remote areas or with limited refrigerator space. It has an acceptable taste, although some people perceive a "cooked" flavor. UHT milk is not yet widely available in American markets, but it is popular in Europe where its cost is the same as for pasteurized milk. Only one processing facility is now operating in the United States.

IF YOU MUST GET RIPPED OFF, AARP WILL SELL IT TO YOU CHEAPER

Stephen Barrett, M.D.

The American Association of Retired Persons (AARP), which prides itself on educating its members and saving them money, has been involved in important antiquackery activities. At the same time, despite warnings from me, its pharmacy service has been selling questionable supplement products and promoting some of them with misleading advertisements and books.

AARP, which currently has 21 million members and over 3,000 chapters, is open to anyone 50 or over who pays \$5 dues. In return for this modest sum, members receive *Modern Maturity* (a well-written bimonthly magazine) and *AARP News Bulletin* (a newspaper published 11 times a year), and are eligible for a wide variety of other services, including group insurance plans. AARP produces syndicated radio and television programs, and newspaper columns. It also produces books and pamphlets, many of which cover health topics.

AARP Pharmacy Service, which was founded in 1959 and reportedly has millions of customers, is the largest private nonprofit mail-service pharmacy in the world. It fills prescriptions and sells hundreds of products through a catalog that is updated about twice a year. The two most recent issues devote about 25 of their 144 pages to vitamins, minerals and other "food supplements," many of which have the same ingredients as popular national brands but are sold at lower prices. Catalogs issued during the previous three years have contained fewer pages, with about 25% of their space covering these products.

AARP's 1985 balance sheet lists operating revenues of \$150,675,000. Its pharmacy service is operated by Retired Persons Services (RPS), Inc., a separate corporation sponsored by AARP. RPS pays a royalty to AARP, but the amount involved, its gross sales, and the percentage of "supplement" sales are not public information.

In September 1985, I sent a lengthy letter to AARP's executive director, Cyril F. Brickfield, complaining that at least 30 supplement products listed in AARP's February 1985 catalog were useless, irrationally formulated, or misrepresented. Among other things, I pointed out:

- AARP's Stress Formula with biotin and folic acid was recommended because "a busy lifestyle puts extra demands on your body." But people with "busy lifestyles" do not need more vitamins than do those who are less busy. The catalog lists other "stress formulas" without saying what type of stress they are supposedly for. Most people buy "stress formulas" because they mis-

takenly think that these products help with emotional stress or other stresses of everyday life. Even the nutrition director of Lederle Laboratories (makers of Stresstabs) has stated publicly that vitamins are useless against emotional stress and that no one eating a balanced diet needs Stresstabs.

- The catalog claims to offer "proven formulations suited for most every lifestyle." Dietary supplementation may be advisable if people don't eat properly, but vitamin needs do not vary significantly with their "lifestyle."

- AARP's Activitamins was recommended "if you play tennis or golf, or like to bike, jog or walk." Engaging in these activities does not create any special vitamin needs.

- AARP's VitamInsurance is an irrational and overpriced combination of ingredients. A person who wants to take a supplement for "insurance" should take one that contains no more than the Recommended Dietary Allowance (RDA) for any ingredient. VitamInsurance contains considerably more and costs 36½¢/day, about ten times the cost of AARP's RDA formulation.

- AARP Energy Formula is irrationally formulated and deceptively named. Vitamins and minerals do not supply energy. Only calories supply energy. The formula is suggested "for those who want a combination of B-Complex vitamins plus iron, Minerals and Vitamin C." Anyone who wants such a formula is confused.

- AARP's Megavitamin Formula is not appropriate for anyone. Some of the dosages it contains should not be taken without medical advice. Two of its ingredients, PABA and choline, are not vitamins for humans and serve no useful purpose as supplements. Another megavitamin product in the catalog contains 25,000 International Units of vitamin A, an amount that can build up to toxic levels in susceptible persons.

- AARP's rutin tablets are a complete waste of money since rutin is not a nutrient and has no therapeutic value. The same is true of AARP's biotin tablets. Biotin deficiency is virtually nonexistent, and there is no reason to take biotin for any other reason.

- AARP sells 1000 I.U. capsules of vitamin E. There is no reason for anyone to take this amount, which can cause fatigue and other problems.

- AARP carries a dozen vitamin C products with dosages ranging from 100 to 1000 milligrams. A note on the same page suggests falsely that vitamin C helps prevent colds and many other viral infections.

• AARP's Antipollutant Formula is claimed to protect people from "pollution." I believe this claim is illegal as well as false.

• Various minerals are offered without a warning that no one should take them without medical advice. Chelated minerals are also offered. These cost twice as much as regular minerals but have no proven advantage.

• Amino acids are offered even though there is no rational reason to buy them. Use of single-ingredient amino acid supplements has not been proven safe.

• AARP's Bee Pollen Plus Royal Jelly may be good for bees, but it is a ripoff for humans and can cause allergic reactions.

• Garlic capsules are another product with no proven usefulness.

• Alfalfa tablets are offered with a note that alfalfa is called "the great healer." However, it has no proven healing ability.

• Another note suggests that lecithin supplements can help prevent arteriosclerosis. There is no scientific evidence for this.

My letter to Mr. Brickfield suggested that AARP inform its members that: 1) nutrient needs can easily be met by proper eating; 2) vitamin and mineral intake should be limited; 3) dosages over the RDA are seldom needed and should not be taken without medical advice; 4) "natural" vitamins—which cost more—are neither better nor different from ordinary vitamins; and 5) "stress" vitamins are fraudulently represented in ads to the public. At the same time, it could teach its members how to evaluate whether their regular daily diet is adequate and whether any supplementation is appropriate.

Within a week, Paul R. Bergeron, II, marketing vice president of AARP Pharmacy Service, replied that: "Vitamin supplementation is as controversial today as it was 30 years ago when I began my career as a pharmacist. The points you raised in your letter . . . are well taken, and I appreciate you taking the time to state your opinions. But I also receive sound comments and opinions that tend to disagree with yours. My dilemma results . . . What vitamin supplements do we offer? At this time, I choose to supply quality, low cost products that our members want and buy. When the evidence is strong that doses or formulations are not in our members' best interest—we discontinue the products involved . . . Currently, we are considering changes in

some of the products you discussed. That's why your comments were appreciated. Our main concern is for the health care costs of AARP members. I think our changing product mix properly addresses the needs and wants of our members."

A few weeks later I wrote again to Mr. Brickfield, asking whether AARP is really interested in trying to protect its members from wasting money on vitamins they don't need. If it is, AARP could easily consult experts of its own choosing to resolve Mr. Bergeron's "dilemma" of not knowing what to believe. I also asked whether AARP would be willing to publish advice in its catalog even though it might decrease vitamin sales. (Such action, of course, would be one of the most important and newsworthy events in the history of consumer protection.)

Brickfield replied by assuring me that AARP is "indeed interested in trying to protect its members from wasting money on vitamins they don't need" but "recognizes that there is no clear and compelling consensus on the question of vitamin supplementation." He also said that future editions of the pharmacy service catalog "will present all sides of the vitamin supplementation question."

When the February 1986 catalog arrived, some of the misleading statements I had complained about were gone, but most of the questionable products were still there. The catalog contained two articles about supplementation. One, from the National Institute on Aging, advised against taking supplements without determining whether they are needed. The other, attributed to the Vitamin Nutrition Information Service (VNIS), claimed that vitamin and mineral deficiencies are common among older Americans and suggests taking a supplement "just to be sure." (Though not identified in the catalog, VNIS is a subsidiary of Hoffmann-La Roche, which wholesales most of the vitamin ingredients used by other manufacturers.) Neither article warned that amounts higher than the RDAs should not be taken without medical advice.

This catalog also offered for sale *The Healthy Heart Book*, by Richard P. Huemer, M.D., past-president of the Orthomolecular Medical Society, an organization of physicians who believe in megavitamin therapy. Although the book contains some sound advice, it also suggests that everyone take supplements of vitamins, minerals, antioxidants, choline and inositol to protect

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their heart. (Many of the claims made for these products would be illegal advertising or labeling.)

The August 1986 catalog eliminated the articles on vitamins and also dropped the book. But it included another called *Vitamins and Minerals*, which is part of a series of health books published by Springhouse Corporation, Springhouse, Pennsylvania, under the guidance of the American Family Health Institute, whose medical board includes some well credentialed professionals. However, although the book states that the best way to meet dietary needs is through foods, it contains many false and misleading passages that promote unnecessary supplements. For example, it says that water-soluble vitamins must be replaced daily, which is untrue. Although storage is limited, they are stored in sufficient amounts that missing any of them for days or even weeks is unlikely to cause any trouble whatsoever. The book says that smokers can benefit from extra vitamin C, which is also untrue. It also says that PABA, choline and inositol are vitamins.

AARP Pharmacy Service occasionally engages in misleading advertising outside of its regular catalog. Ads in *AARP News Bulletin* have suggested using AARP's Stress Formula for "a busy lifestyle" and that stocking up on vitamin C tablets is a good way to "prepare for the cold season." And an ad in the AARP Pharmacy Service Bonus Book warned against "harmful free radicals" and suggested supplements of "the protector vitamins" (C, E and beta-carotene) to "ensure added protection."

What makes all of this puzzling is the fact that AARP is significantly involved in fighting quackery on other fronts and has published many outstanding publications on other health topics. Most notably, its Health

Advocacy Service has developed an outstanding slide-and-lecture program warning that "today's quacks combine alluring promises with sophisticated marketing techniques to rake in billions of dollars each year."

Curiously, one of the program's messages is: "There is enough wholesome and appetizing food in our supermarkets so that most of us can easily obtain the nutrition we require. The only person who should determine if you need a vitamin, mineral or other food supplement is your doctor or a professional nutritionist."

This month's *Consumer Reports* magazine contains a brief article criticizing AARP's promotion of Activitamins and its willingness to sell such products as bee pollen and royal jelly, rutin, alfalfa and biotin. The article quotes Mr. Bergeron to the effect that if AARP didn't carry such products, its members would buy them somewhere else.

In my opinion, AARP and its pharmacy service have been acting unethically. If AARP can advise consumers properly on dozens of other issues, why can't it do so about supplements? A clear and compelling scientific consensus certainly does exist on the points I have raised. AARP surely has the resources to identify it. If AARP believes that to satisfy its members it must carry questionable products, why can't it discourage their purchase? After all, AARP and its pharmacy service are supposedly nonprofit.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

BRIEFS

Diet and behavior report. In November 1984, the American Medical Association and the International Life Sciences Institute-Nutrition Foundation held an interdisciplinary symposium on diet and behavior [see *NF* 2:11-13]. Participants at the meeting generally agreed that: 1) although diet does affect behavior, the effects are subtle; 2) diet has not been established as a significant causative factor or as having therapeutic potential in the management of abnormal behavior; and 3) based on existing evidence, it is premature to utilize information on the effect of diet on behavior to influence health policy. A special 256-page supplement to *Nutrition Reviews* containing all of the papers presented at the meeting is now available for \$12.00 from the International Life Sciences Institute, Suite 111-N, 1126 16th St., N.W., Washington, DC 20036.

Hair analysis lab fined. On May 2nd, Analytical Research Laboratories (ARL), Inc., of Phoenix, Arizona, signed a consent agreement with the New York State Attorney General to stop "soliciting or accepting hair specimens for laboratory examination where the purpose is to determine possible excesses or deficiencies in nutrient mineral levels or toxic metal levels in the body." The agreement also directed the company to pay a \$1,000 penalty plus \$1,000 for court costs, and to make restitution to any New York customer who filed a claim within 90 days. The Attorney General acted because a health food store proprietor had been using hair analysis as the basis for recommending vitamin and mineral supplements. ARL was never licensed to operate within New York State, and hair analysis for the purpose of determining nutrient levels is not legal there.

USDA information guide. *How to Get Information from the United States Department of Agriculture* is a 16-page booklet which tells how to get information from the Department and its various agencies. For a free copy, telephone 202-447-7454.

Health claims for light attacked. FDA's August 27th *Enforcement Report* contains a "Health Fraud Notice" calling the Vita-Lite Fluorescent Lamp a "gross deception of the consumer" because of its labeled claims. The product, made by the Duro-Test Corporation, North Bergen, N.J., and sold through health food stores, is a full-spectrum fluorescent lamp designed to simulate sunlight. In advertising and store displays, Vita-Lite was claimed to improve visual acuity, reduce fatigue, help fight "winter blues," and help fight osteoporosis by increasing intestinal absorption of calcium; but the FDA said these claims were unsubstantiated. On August 28, New Jersey's District Court refused Duro-Test's request to restrain distribution of the FDA report. The company then agreed to discuss labeling revisions with the agency in an attempt to resolve the matter without further litigation.

New meat labeling rules. The U.S. Department of Agriculture has given producers of meat and poultry products until March 1987 to meet stricter labeling requirements for "lite" or "lean" meat and poultry products. "Extra lean" will be reserved for products containing no more than 5% fat, and the actual amount of fat must appear on the label. "Lean" and "low fat" claims can be used on those containing no more than 10% fat. "Light," "lite," "leaner" and "lower fat" can be used on those containing at least 25% less fat than the majority of such products on the market. But the comparison must be explained on the label. The new policy resulted from a petition by the Center for Science in the Public Interest.

Doctors being pressured. Claiming that doctors pay too little attention to nutrition, the Center for Science in the Public Interest has asked its members to send form letters "anonymously (or not)" urging their doctors to obtain free educational materials from various organizations on dietary strategies for preventing heart disease and cancer.

FOOD IRRADIATION UNDER ATTACK

Irradiation is a valuable way to kill harmful microorganisms and insects, and to extend the shelf life of certain foods by retarding spoilage [see NF 2:25-27]. But the health food industry is urging its followers to oppose it. To stimulate political activity, opponents are suggesting that irradiated foods are dangerous. Health food industry publications have been publishing articles and/or letters to the editor asking their readers to take action.

Some of the propaganda involved resembles that of opponents of fluoridation. For example, the National Coalition to Stop Food Irradiation (NCSFI), P.O. Box 590488, San Francisco, CA 94159, calls irradiation "food fascism." It claims that gamma radiation "destroys essential nutrients in foods" and "produces toxic chemical by-products in foods which are scientifically documented to cause latent diseases." It also claims that "irradiation with cobalt-60 or cesium-137 provides an apparent social justification for recycling radioactive wastes from nuclear weapons production and nuclear power plants." One of NCSFI's aims is to pass municipal and county legislation requiring labeling of all irradiated foods sold

to retail customers. Bumper stickers have been distributed with the message: "Don't Nuke My Food!"

Rep. Douglas Bosco (D-CA) has introduced the Food Irradiation Safety and Labeling Requirement Act of 1986 (H.R. 4762), which already has more than 30 sponsors. This bill would: 1) stop the FDA from implementing regulations that allow food producers to irradiate pork and fresh produce [NF 3:33, 3:39]; 2) impose a 2-year moratorium on use of food irradiation; and 3) require the Secretary of Health and Human Services to arrange for studies on the safety and nutritional value of irradiated foods.

H.R. 4762 would also extend labeling requirements to foods whose components have been irradiated and to irradiated foods sold at restaurants. In a recent fundraising appeal, the People's Medical Society [NF 2:81-83] asked members to sign form letters to Congress and the FDA supporting this provision and asking that labels also be required to disclose the presence of "fumigants, pesticides, waxes and dyes that are added to foodstuffs *after* they are harvested."

BOOK REVIEWS

Title: Popular Nutrition Practices: A Scientific Appraisal (1986)
Author: Jack Z. Yetiv, M.D., Ph.D.
Publisher: Popular Medicine Press, P.O. Box 12607-N, Toledo, OH 43606
Price: \$23.95 hardcover, \$17.95 softcover
Reviewed by: Stephen Barrett, M.D.

To produce this outstanding volume, Dr. Yetiv spent four years collecting and distilling scientific articles on more than 100 nutrition topics of current concern. Included in its 318 pages are such subjects as dietary balance, diet and heart disease, dietary fiber, osteoporosis, weight control, diet and hypertension, diet and cancer, diet and behavior, carbohydrate metabolism, diabetic diets, food allergies, food additives, vegetarianism, and rational usage of vitamins and minerals. Many types of nutrition quackery are discussed, some in detail and others briefly. An appendix tells how the scientific method is used to determine today's truths. The material is detailed enough for professionals yet lucid enough for laypersons. More than 1,000 references are cited so that readers wishing to delve more deeply will find it easy to do so. [*Nutrition Forum* subscribers can obtain softcover copies for \$16 each from LVCAHF, P.O. Box 1747, Allentown, PA 18105. Payment must accompany order.]

Title: Nutrition in Oral Health and Disease (1985)
Editors: Robert L. Pollack, Ph.D., and Edward Kravitz, D.Sc.
Publisher: Lea and Febiger, 600 Washington Sq., Philadelphia PA 19106
Price: \$29.95
Reviewed by: John E. Dodes, D.D.S.

This textbook is excellent for a course on nutrition at a dental school. Dentists, dental hygienists and dietitians who deal with patients undergoing extensive dentistry will also find it valuable, particularly the last section on general nutrition information. The book is 474 pages long, contains an accurate index, and is printed in an easy-to-read typeface. Understanding it requires a solid background in health sciences, especially biochemistry and physiology.

Written by 30 prominent contributors, the book thoroughly covers the role of diet and nutrition in health and disease at each stage of life plus various other topics such as food preservation and setting up nutrition education programs for professionals. An outstanding chapter on food fads and fallacies, written by Dr. Kravitz and National Council Against Health Fraud president William T. Jarvis, Ph.D., is particularly important because dentists and hygienists need to be able to educate their patients in this area. Many chapters end with a list of recommended readings in addition to references. Most of the authors don't overstate the role of nutrition in dental disease. The symptoms of vitamin and mineral deficiency are amply discussed, as are the problems caused by overdosing on supplements.

Typical of first editions, some chapters are far superior to others and there is considerable repetition. The book's major defect is that some of its authors seem overeager to connect nutrition and disease. Some advance unsupportable assumptions about food supplements benefiting the general population, which in this country is mostly overfed and free of deficiency diseases. For example, assumptions are made that periodontal disease may be partly due to "end organ deficiency." No research has demonstrated such a mechanism or that periodontal disease can be improved through vitamin supplementation alone.

The text's perspective of fluoridation is also flawed. It is stated several times that daily fluoride intake of as little as 2 ppm (about twice the optimum level for public water supplies) can cause "overdosage." This is described as a "narrow safety margin," despite the fact that the only adverse effect of fluoride at 2 ppm is whitish opaque areas—detectable only by trained observers—on the teeth of a very small segment of the population. The minimum fatal dose for an adult is approximately 2 grams of fluoride—hundreds of times what people consume daily in water and food supplies combined. Until a better protectant against cavities is found, it is unfair and misleading to denigrate fluoride. But these are minor flaws in a basically excellent book.

Dr. Dodes, a dentist in Woodhaven, New York, is director of the New York Chapter of the National Council Against Health Fraud.

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LIVE CELL ANALYSIS: HIGH-TECH HOKUM

James A. Lowell, Ph.D.

NutriScreen Live Blood Analysis is a simple procedure for obtaining a quick and accurate assessment of your blood. With only a sample, taken virtually without pain from your finger, NutriScreen is able to provide a composite of over 25 aspects from your live blood. Darkfield microscopy now allows us to observe multiple vitamin and mineral deficiencies, toxicity, tendencies toward allergic reaction, excess fat circulation, liver weakness and arteriosclerosis. Through new, improved technology in video, patients are able to view their own drop of blood on television while they simultaneously receive their analysis.

So reads a flyer from a Los Angeles chiropractor who uses live cell analysis, the latest in a seemingly endless succession of questionable tests used as the basis for prescribing food supplements. This procedure is carried out by placing a drop of blood from the patient's fingertip on a microscope slide under a glass coverslip to keep it from drying out. The slide is then viewed with a dark-field microscope to which a television monitor has been attached. Both practitioner and patient can then see the blood cells, which appear as dark bodies outlined in white. The practitioner may also take polaroid photographs of the television picture for himself and the patient.

Dark-field microscopy is a valid scientific tool in which special lighting is used to examine specimens of cells and tissues. The objects being viewed stand out against a dark background—the opposite of what occurs during regular microscopy. This allows the observer to see things which might not be visible with standard lighting. Connecting a television monitor to a microscope for diagnostic purposes is also a legitimate practice. Called telepathology, the technique was little used until recently because it was assumed that the quality of video transmission could not provide adequate detail for accurate pathologic diagnoses. Improved technology has resulted in the development of practical applications,

but live cell analysis of the type described in this article is not one of them.

Three companies are selling equipment and protocols for live cell analysis: Livcell Analysis, Inc., of Laguna Hills, California; NutriScreen Live Blood Analysis, of Covina, California; and Physicians Cyto Laboratories, of Fort Lauderdale, Florida. These companies claim that live cell analysis can be used to identify a wide variety of health problems by examining characteristics of blood cells and other matter visible on the screen. (The chart which follows examines this claim.)

The Livcell system, which costs practitioners \$10,300, includes a dark-field microscope, television camera and monitor, patient education packets and brochures, wall charts, a "technical manual," a "nutrition manual," and a four-day training seminar. The equipment can also be leased for \$5,000 a year. Those who pass a test are "certified" by the company. Once a year, meetings are held to keep owners apprised of new developments. Prospective customers for the system are given a sales packet which includes a description of the equipment, testimonial letters and a profitability projection.

Most of the testimonials in the promotion packet are from chiropractors, but one is from Jeffrey Bland, Ph.D., who speaks frequently at health food industry meetings about how to promote supplements [see NF2:33-36 and 3:33-38]. Bland's letter, dated February 7, 1986, states:

"It is clear that the dark-field microscope examination of whole blood is a useful tool in visualizing aspects of the end products of metabolism . . . It appears as if this tool could be extremely useful in promoting better acceptance and personal commitment to nutrition and lifestyle modification."

Livcell's profitability projection is based on using the test to modify the behavior of one new patient per day, five days per week, 50 weeks per year. Committed

patients would pay \$50 for their initial test and \$30 each for two retests. Each initial test, the projection states, will generate sales of about \$60 worth of food supplements on which the practitioner makes 50% profit. With all tests, retests, and supplement sales, a practitioner who owns the equipment would net \$61,000 per year. NutriScreen also includes a profitability projection

in its packet for prospective customers. With five new patients a day (22 days a month) paying \$30 for the test and \$50 for supplements, practitioners would gross over \$100,000 per year just on initial visits.

Livcell's *Technical Manual* describes the appearance of normal blood and 24 "blood indicators" which supposedly signify specific diseases or deficiencies.

CLAIMS VS. FACTS

This chart lists some of the "blood indicators" which live cell proponents claim are useful in diagnosing health problems.

"Blood indicator"	Proponents' interpretation
Separation of red blood cells	Too little separation means oxygen delivery and carbon dioxide removal are reduced, typically caused by too much dietary fat.
Shape of red blood cells	Non-round red cells, caused by toxins entering the body, do not perform or survive well.
Size of red blood cells	They may be too small due to iron deficiency anemia or too big due to B-12 deficiency or rarer conditions.
Rouleaux (red cells that appear stacked like coins)	Caused by "acute phase protein" in the blood. If the condition doesn't respond to nutritional therapy in seven days, additional testing should be performed to rule out arthritis, diabetes, gallbladder disease, rheumatic heart, hepatitis and many other serious conditions.
Red cell clumping	Indicates about the same problems as rouleaux, but may be more serious.
White blood cell count	If too high or low, it tells about bacteria, viruses and use of medication.
Hypersegmentation of neutrophils (a type of white blood cell whose nucleus has several lobes)	Extra lobes mean that the person is deficient in iron, folic acid, or vitamin B-12.
Vitality of white blood cells	Lack of movement or round shape of neutrophils indicates decreased immunity.
Allergy cell count	High eosinophil count indicates possible allergy, food sensitivity or presence of parasites.
Waste (non-blood material) in the blood stream	Immune system or organs of elimination are ineffective.
Spicules (small, slender sharp-pointed pieces)	May signify liver or bowel toxicity.
Fat (chylous material) in blood	Results from a diet high in fats or simple sugars.
Platelet clumping	Can lead to cardiovascular consequences but can be corrected by dietary adjustments, nutritional supplements and smoking cessation. May also indicate marijuana or cocaine use.
Parasitized red blood cells	Bacteria and viruses are present because the body's immunity is low.
Protoplasts	Large germs whose presence may indicate weakness of the body's immune system.

cies. The book is referenced, although few of the references have anything to do with observation or analysis of blood under a dark-field microscope. Once identified, the indicators can be looked up in the *Nutrition Manual* which recommends supplements and additional tests.

A practitioner using these manuals might, for example, determine that a patient has an excess of

eosinophils, a type of white cell which normally makes up 1-3% of the white blood cells. According to the *Technical Manual*, counts over 4% may be related to about 50 diseases, including Addison's disease, scarlet fever, cancers of the lung, ovary and stomach, allergic rhinitis, impetigo, Hodgkin's disease and scabies. The *Nutrition Manual* says that too many eosinophils are a reason to

It was prepared with the help of Ronald Spark, M.D., a pathologist at Tucson Medical Center who uses dark-field microscopy on a regular basis for legitimate medical purposes.

Scientific facts

Oxygen and carbon dioxide have nothing to do with the amount of separation. It is actually determined by the method of preparing the slide. Although extremely high blood levels of fat can cause red cell aggregation, dietary fat does not produce this condition in normal individuals.

Unusual shapes can occur with long-term alcohol abuse and a few relatively uncommon hereditary diseases such as sickle cell anemia. Live-cell analysts don't specify what "toxins" they are talking about.

Although this interpretation is correct, most people performing live cell analysis have insufficient training to actually identify or treat any conditions they discover.

Rouleaux and clumping occur when blood is placed under a microscope without first being suspended in proper solutions to control acidity and agglutination. Rouleaux occurring in other tests can be related to the diseases mentioned, but their occurrence during live cell analysis is not.

The white cell count can be affected by infections and a few medications, but live cell analysis is unlikely to produce accurate counts. Automated equipment used in standard laboratory practice is far more accurate than manual counting methods.

Iron deficiency does not affect the appearance of neutrophils. B-12 status can be related to the number of lobes in their nuclei, but only highly skilled technicians using special stains and techniques (not dark-field microscopy) can determine the average number of lobes accurately.

Neutrophils don't propel themselves but simply float in the fluid in which they are suspended. So the amount of "movement" depends upon the viscosity of the blood on the slide. The shape of neutrophils has no relationship to immunity.

So many different conditions can increase the number of eosinophils that it is not valuable as a primary diagnostic tool. Even if it were, the live cell procedure is not suitable for counting eosinophils accurately.

Although the levels of waste products in the blood can be related to the functioning of various organs (such as the kidneys), these chemicals cannot be seen but require chemical tests to measure them.

Spicules are artifacts, the most common causes of which are contamination and drying of the blood sample.

The amount of chylous material (fat coated with protein to make it soluble enough to travel in the blood) in the blood increases after eating. But it is not readily visible under dark-field illumination unless special techniques are used.

Platelets are difficult to judge under dark-field procedures, even for experts.

The organisms live cell promoters claim to be able to find are extremely rare.

Bacterial protoplasts have poorly developed cell walls and are not visible under dark-field illumination.

take supplements of pantothenic acid, vitamin B₆, vitamin C, bioflavonoids, adrenal tissue concentrate, para-aminobenzoic acid (PABA), vitamin B₂, and "mycellized" vitamin A. The manual also recommends a special diet, hair analysis to check selenium and zinc levels, and another live cell test in 30 days.

Physicians Cyto Laboratories is a clinic specializing in allergy and immunology testing. Founded in 1978, it began marketing its "Darkfield Video Analysis" in 1985. Marketing director Stephen Thompson says that the test is used "as a general health screening tool on all of our patients" and that "the blood is a window to an individual's health and can reflect various problems." According to Thompson, the screening reveals nutritional, allergy, or other problems in about 90% of its patients, most of whom sign up for additional testing and "recovery" programs. (Conventional allergists believe that less than 15% of the general population suffers from food allergies.)

I first saw live cell analysis performed at a health food convention in Phoenix in the Fall of 1984. A few months later, to sample the test's efficacy, I attended a convention in California accompanied by a 27-year-old woman who was recovering from a serious motorcycle accident. Following the accident, she had been in a coma and required close monitoring of her nutrition status during a hospital stay in which she received artificial feedings. She still had slurred speech, a tremor of her hands and head, and a limp that necessitated use of a cane. While I watched, she underwent NutriScreen Live Blood Analysis for the special convention price of only \$15.

The woman performing the test billed herself as a nutrition counselor and "metabolic technician" certified by the International Health Institute (IHI) in Dallas, Texas. (IHI was founded by William Donald Kelly, a dentist who claims to be able to cure a wide variety of ills, including cancer, by adjusting nutrient intake according to a person's supposed metabolic type.) The "technician" paid no attention to our patient's medical history or obvious physical problems but merely asked whether she had eaten or ingested alcohol within the past 24 hours. Then she obtained a blood sample by having the patient press a lever attached to a mouse-trap-like device into which she placed her finger. (I assume this device was used because the practitioner, being unlicensed, could not legally draw blood.)

Using the test, the counselor determined that our patient had "+ 2 protein linkage," spicules, red cell and platelet aggregation, "pulsating white cells," and other abnormal cells, which live cell analysts claim indicate iron deficiency, B-vitamin deficiency and other problems. None of these cited factors actually indicates the conditions she diagnosed. If our patient really had been deficient in iron or folic acid (a B-vitamin), many small or large red cells would have been visible on the video screen. But the practitioner failed to report any.

To correct the problems she claimed to find, she

recommended iron chelated with vitamin C, B-complex vitamins, folic acid, hydrochloric acid, lecithin, fish oils, vitamin E, selenium and other antioxidants. Furthermore, she said, our patient needed to have her immune system stimulated and her liver detoxified. (The latter is usually accomplished by a combination of fasting and coffee enemas.)

Since we were from Arizona and the nutritional counselor would not be able to treat our patient herself, she told us to contact the Nutritional Counseling Service in Dallas, Texas, to locate a certified metabolic technician from the Tucson area. When we did, we received literature describing a "metabolic therapy" program that would include hundreds of supplements a day and cost as much as \$1,000 a month for the first year until the patient achieved good health. Since the program was individualized, however, they advised that we attend their 2½-day "Resort to Health Workshop" in Dallas at a special cost of only \$350 plus room and board.

This literature was soon followed by a letter from a Phoenix chiropractor who signed himself as a "Metabolic Doctor" and identified himself as a representative of the Alumni Association of the International Health Institute. He promised that by examining a computer printout which he would prepare, our patient would see "for the first time, an estimate of what's happening in your body, and it is such a relief to be given exact instructions on how to help the imbalances that keep you from experiencing the good health that you seek and so rightfully deserve."

Even if live cell analysis were a valid test, I suspect that most practitioners are performing it improperly. The three I have observed so far didn't always clean their microscope slides carefully between patients. (Dirt and dust which show up under the microscope can then be misinterpreted as components of the blood.) No agents were used to prevent dehydration or clotting or to control salinity, pH or temperature. Factors like these can account for variations in rouleau patterns, red-cell clumping and the formation of "spicules." Some of the patterns one practitioner saw resulted from his microscope being out of focus and disappeared when I adjusted it properly.

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Bill Shaddle, general manager of Livcell Analysis, Inc., says that 400 to 500 dark-field units are being used in the United States for nutritional assessment, including about 350 from his company. He told me that his company promotes live cell analysis as a device for patient education. However, its brochure states that the test indicates "the need for specific nutrients to support, strengthen, and rebuild weakened organs and systems." Shaddle also told me that the basic techniques were developed about six years ago by James Privitera, M.D., a California physician, who founded Livcell Analysis but later left to launch NutriScreen.

Privitera has been involved in questionable practices in the past. In 1975, he was convicted and sentenced to six months in jail for conspiring to prescribe and distribute laetrile as a cancer remedy. In 1980, after the appeals process ended, he served 55 days in jail but was pardoned by California Governor Jerry Brown following a letter-writing campaign generated by the National Health Federation (NHF), a group that promotes questionable health methods. Privitera was a member of NHF's board of governors when the letter-writing campaign took place.

Shaddle and two others who helped Privitera promote Livcell Analysis are former employees of Nu

tri-Dyn, an Illinois-based company which sells supplements of ground-up animal organs called "glandulars" which supposedly strengthen corresponding human organs when consumed. Seminars on live cell analysis have been promoted to chiropractors by the company's main distributor. In 1982, an undercover investigator from WBBM-TV, Chicago, recorded Shaddle telling Nutri-Dyn sales trainees that although there was no proof that company products could cure diseases, they should claim they do anyway. "You've got to be able to do it to survive," he said, "so everybody does it."

Clearly, there are serious questions about both the value of live cell analysis and the credibility of those promoting it. As is the case with many questionable procedures, live cell analysts combine a curious mixture of science and pseudoscience. The test itself is useless in diagnosing most of the conditions which the live cell analysts claim to detect.

Dr. Lowell is a professor of life sciences at Pima Community College and is president of the Arizona Council Against Health Fraud. Some of the documents mentioned in this article were supplied by John Renner, M.D., president of the Kansas City Committee on Health and Nutrition Fraud and Abuse.

FALSE ADS FOR VIOBIN WHEAT GERM OIL APPEAR DOOMED

Viobin Corporation has been a subsidiary of the A.H. Robins Company since 1973. A few days before the acquisition, the Pennsylvania Department of Health embargoed a quantity of Viobin Wheat Germ Oil until the manufacturer promised to stop advertising that the product could "relieve heart stress." But the company continued to suggest that its products would improve physical fitness and athletic performance.

Over the years, Viobin has advertised that Viobin Wheat Germ Oil (liquid), Promtabs (tablets), and Prometol (capsules) will increase endurance, stamina, vigor and total body reaction time, and will help overcome fatigue. The company has also claimed that these benefits were backed by "more than 18 years of University research."

During 1984, after the National Advertising Division (NAD) of the Council of Better Business Bureaus asked for substantiation of these claims, Viobin told NAD that it would discontinue them "in a spirit of cooperation" even though it felt the advertising in question could be scientifically supported [see NF 2:14]. However, the claims continued to appear in Viobin ads for at least six months after the agreement with NAD was announced.

Now the Federal Trade Commission (FTC) has charged Viobin and A.H. Robins with false advertising. Under a proposed consent agreement, they would be prohibited from representing that wheat germ oil can help consumers improve endurance, stamina, vigor or other aspects of athletic fitness, or that its active ingredient octacosanol is related in any way to body reaction time, oxygen uptake, oxygen debt or athletic performance. In addition, Viobin must state in any ads within the next year that "earlier studies of the effects of wheat germ oil and octacosanol on endurance, stamina or vigor do not meet the criteria for modern testing" and that the company no longer makes claims that wheat germ oil supplements will improve endurance, stamina or vigor. Within six months following final ratification of the proposed agreement, the company will also have to place one ad including this disclosure in each publication that carried its ads during 1985. According to FTC staff, the purpose of this provision is to remedy false impressions created by Viobin's false and deceptive advertising.

The consent agreement has appeared in the *Federal Register* and is open to public comment until December 9, after which the FTC will decide whether to make it final.

BRIEFS

Welcome support for fluoridation. Prevention Magazine has published an excellent discussion of fluoridation in its November "Ask Prevention" column. Summarizing the favorable viewpoints of major health organizations, the column airs a prominent public health official's view that "a few opponents of fluoridation try to condemn the practice by taking out of context and misrepresenting legitimate pro-fluoride scientific research." Prevention vigorously opposed fluoridation during the lifetime of its founder, J.I. Rodale, who died in 1971. But its current editors believe it is a valuable public health measure.

Cytotoxic lab zapped. The Attorney General of the State of Washington has secured a consent agreement barring Medical Service Center and its owner, Mark Lovendale, from making a large number of false claims about cytotoxic testing. The company, based in Irvine, California, had been claiming that the test can diagnose food allergies and sensitivities that supposedly cause arthritis, epilepsy, multiple sclerosis and many other diseases. A civil penalty of \$300,000 and court costs and attorneys' fees of \$30,000 were suspended provided the company permanently desist from any business in Washington involving cytotoxic testing or related services. (For additional information on cytotoxic testing, see NF 1:17-19, 2:39, 2:62, 2:84, and 2:91.)

QUESTION BOX

Q. Can any foods consumed before bedtime help people fall asleep?

A. Controlled studies suggest that the amino acid tryptophane administered in doses of one gram or more can reduce the time it takes some people to fall asleep. However, self-administration of individual amino acids is not a recommended practice. It is not known whether human sleep patterns are affected by tryptophane normally present in typical meals or snacks. Touted sleep-inducers like milk contain very small amounts of tryptophane (0.12 grams in 8 ounces of milk). A bedtime snack or warm drink (such as soup or decaffeinated tea) may be comforting, but a dull book or warm bath will probably do more to lull people to sleep. Alcoholic beverages can help induce sleep but may cause the sleeper to wake up early when the effect of the alcohol wears off.

NF's editor honored. At its annual meeting, the American Dietetic Association (ADA) awards honorary membership to one or two individuals who have made significant contributions to nutrition and dietetics. On October 27, 1986, Dr. Stephen Barrett was given this award for "tireless work against health fraud" and "leadership in numerous organizations that promote and support nutrition and good health." Later that day he gave tips on fighting nutrition quackery to an audience of 2,500 dietitians and was videotaped for ADA and Cable News Network programs on that subject.

In-store computer terminals. According to an article in the *Washington Post*, computerized devices now being tested in supermarkets can provide store directories, nutrition information, discount coupons, and printed recipes tailored to individual specifications. Although computers have considerable potential for helping shoppers, they can deliver advertising messages and also influence purchasing decisions in subtle ways.

Mail-order diet fraud stopped. The Federal Trade Commission has announced that marketers of several mail-order diet schemes have signed a provisional consent agreement settling charges that they made false, misleading and unsubstantiated claims in advertising their programs and products. In June 1985 the Commission issued an administrative complaint against Buckingham Productions, Inc., and related companies and individuals who marketed the Rotation Diet, "No Frills" Rotation Diet, Freedom Diet, Freedom Plus! Diet, and Rotation-Freedom Diet. The complaint challenged their claims that dieters could eat virtually unlimited quantities of any food for four days each week and still lose weight if they followed a severely restricted low-calorie diet during the rest of the week and took the company's vitamin supplements and wafers. The complaint also challenged claims that the usual monthly loss was 8-20 pounds for women and 12-25 pounds for men. Under the proposed agreement, Buckingham is prohibited from claiming that consumers can eat as much as they want and still lose weight without disclosing that weight loss depends upon the reduction of total caloric intake. Buckingham also agreed that if testimonials from its employees were used in the future, the fact of their employment would be disclosed in the ads. [Note: Buckingham's Rotation Diet is completely unrelated to Dr. Martin Katahn's best-selling book, *The Rotation Diet*.]

New dietary guides. The U.S. Department of Agriculture has issued seven booklets to help people implement its 1985 Dietary Guidelines for Americans [see NF 3:30-31]. Each booklet contains a self-evaluation and practical tips for following one guideline. To order a set, send \$4.50 to U.S. Govt. Printing Office, Supt. of Documents, Washington, DC 20402. Ask for *Dietary Guidelines and Your Diet*, publication #001-000-04467-2, 1986.

Twinkie #3. The Associated Press has reported that assault charges were dropped against Tony Doherty, a 21-year-old Irishman who claimed that allergy to potatoes caused him to try to strangle his father. According to the story, a judge dismissed the charges after concluding that two packages of potato chips had turned Doherty from pleasant and likable into a wild man. The court was told that a clinic in Manchester had discovered that Doherty was allergic to potatoes, beef, onions and strawberries, and that his personality began to change after he moved into a hostel which served mostly potatoes and beef.

AARP agrees to stop two false ads. After discussion with the National Advertising Division (NAD) of the Council of Better Business Bureaus, AARP Pharmacy Service pledged to stop suggesting Activitamins for seniors who "play tennis or golf, or like to bike, jog or walk." AARP also indicated it would discontinue ads suggesting that supplements of "the protector vitamins" (C, E and beta-carotene) would "ensure added protection against harmful free radicals." AARP Pharmacy Service is operated by Retired Persons Services, Inc., a subsidiary of the American Association of Retired Persons. Dr. Stephen Barrett triggered the NAD intervention after AARP officials failed to heed his complaints [see NF 3:76-78]. AARP's Oct-Nov-Dec 1986 catalogue contains no claims for Activitamins but now suggests that members "ask your doctor about the increased need for vitamin C due to aging and smoking." (There is no such increased need.)

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

Free article on nutritionist licensing. A copy of *Prevention Magazine's* article supporting nutritionist licensing can be obtained by sending a self-addressed stamped envelope to Licensing Reprint, P.O. Box 1747-N, Allentown, PA 18105.

Fluoride lesson plans. Lesson plans on water fluoridation for kindergarten through grade 12 have been developed for San Antonio schools. Information about them can be obtained by writing to Linda S. Crossett, R.D.H., Administrator, Texas Fluoridation Project, Bureau of Dental Health, Texas Department of Dental Health, 1100 W. 49th St., Austin, TX 78756.

Book Review

Title: Parents' Guide to Nutrition (1986)

Author: Susan Baker, M.D., and Roberta Henry, R.D.

Publisher: Addison Wesley, Reading, MA 01867

Price: \$10.95

Reviewed by: Melanie R. Polk, M.M.Sc., R.D.

This is a comprehensive and readable primer on nutrition during pregnancy, infancy, childhood and the teen years, with a great deal of information applicable to adults as well. It covers the development of food habits, feeding problems, and nutritional needs for all ages, and gives practical suggestions for meals and snacks for both sick and healthy children. For example, why not add nutrients via bran, wheat germ, whole wheat flour to chocolate chip cookie batter, when we know the kids want the cookies and would trade or discard what we think nutritious but they dislike?

Readers can approximate their "nutrition IQ" via a quiz which contains ample discussion. A glossary and resource list are included along with helpful charts and tables throughout.

Suggestions are given for those who have limited time and/or money. Fad diets are evaluated, and suggestions made for traveling, cooking with kids, and nutrition basics. Most worthy of comment, however, is the reliability of information. In this age of widely distributed nutrition hogwash, it is refreshing to encounter a trustworthy resource for those interested in good nutrition.

Mrs. Polk is an assistant professor at the University of Connecticut's School of Allied Health Professions and is a consulting nutritionist in private practice in West Hartford, Connecticut.

MARGARINE VS. BUTTER

Manfred Kroger, Ph.D.

Butter and margarine are food fats that are generally considered spreads—for bread—although they can be utilized in many other ways. Both are very much alike in composition: 80-81% fat, up to 1% protein, 1-2% salt (if salted), and 16-18% water. The food energy content of both is about 3,300 calories per pound and 100 per tablespoon (14 grams). A well "buttered" slice of bread could easily deliver 20-40 calories through the spread alone.

Even the color, flavor and price of butter and margarine are virtually indistinguishable. That was not always so. Butter used to be much more expensive and its flavor has always been preferred by chefs and homemakers. Many years ago, margarine was pale yellow or even paler and had to be dyed with a dab of food coloring supplied in the package, if one chose to do so. Yes, in the 1950s the butter interests saw to it that this upstart product called oleomargarine pretending to be butter had a rough time competing. For a time, it was actually illegal in some states to sell margarine with the color already worked in so that consumers in these states had to knead the package to blend in the color. Nineteen states had major restrictive margarine laws.

Butter has enjoyed several thousand years of human use and acceptance. It was probably made wherever milk was consumed. Margarine is a relative newcomer, a creation of modern food technology. Responding to a government offer of a prize for the manufacture of a satisfactory butter substitute, the French chemist Hippolyte Mege-Mouriez created a brand-new product which has enjoyed increasing sales for well over 100 years.

Of course, margarine is a vegetable product. The label indicates which oils were used in its manufacture. There are many vegetable oils to choose from, and two margarines are hardly ever made from the same source. Butter is always made from cream obtained from the milk of a domesticated female dairy animal, usually the dairy cow in this part of the world.

When cream is churned—agitated in a special container—it soon "breaks" into buttermilk and butter.

This is not the buttermilk sold to consumers. What North Americans purchase as buttermilk is really "cultured skim milk"—also called "cultured buttermilk"—a product of bacterial fermentation. But that is another story.

Margarine is the result of the creation of a special semi-solid water-in-oil emulsion. Butter is also a water-in-oil emulsion, and physically the two are quite similar. But margarine is far more variable with regard to fat source and far more complex and variable in its manufacture. Three skills must be brought into play when making margarine: establishing the right emulsion from the proper choice of fats, developing the right "buttery" flavor (don't forget that margarine was made to imitate butter), and obtaining the right spreadability or "melt" of the margarine in the mouth. These are the essential margarine qualities. The art of the food technologist is to put them all together in the "right" way.

Butter always contains butterfat (milk fat) and can harden excessively when refrigerated (a definite consumer complaint and drawback to sales). But margarine is made from a mixture of oils and fats, hydrogenated (hardened) oils, or partially hydrogenated oils which maintain just the right consistency, even when refrigerated. Vegetable fats are substantially more polyunsaturated than butter and maintain softness at lower temperatures. Polyunsaturation in food fats has lately been linked to desirable nutrition/dietary qualities and has given margarine sales a further boost.

Annual U.S. per capita margarine consumption has gradually grown to 11 pounds, up from 2 pounds in the 1920s, while butter consumption has decreased from 10 pounds to less than 5 in that 60-year period. It is interesting to speculate on these past consumption trends. What caused the rise and fall? Was it price, health, flavor or spreadability?

Dr. Kroger is Professor of Food Science at The Pennsylvania State University.

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FDA CONSIDERING POLICY FOR HEALTH MESSAGES ON FOOD LABELS

Odom Fanning

When Congress is in session, a typical day includes many committee hearings on proposed laws or government regulations. With abundant opportunity for the airing of views, why would a trade association hold a simulated hearing?

In the case of the Food and Drug Administration's proposed policy on health messages for food labels, the Council for Responsible Nutrition (CRN) felt it wasn't getting the attention it deserved. CRN represents about 40 supplement manufacturers and wholesale distributors. Its request to meet with Health and Human Services Secretary Otis R. Bowen, M.D., was turned down. FDA Commissioner Frank E. Young, M.D., Ph.D., did meet with CRN officials but said he would not consider changing FDA's draft document until it was published in the *Federal Register* for public comment.

Controversy had erupted in 1984 over ads suggesting that the high fiber content of Kellogg's All-Bran made it useful in preventing cancer [see NF 2:69 and 3:19-20]. The ads had been designed with help from the National Cancer Institute (NCI) and were acceptable to the Federal Trade Commission. But FDA officials thought that linking a specific food product to NCI's general dietary guidelines might make All-Bran a "drug" subject to premarket proof of effectiveness. Kellogg, CRN, and other industry groups then petitioned the agency to allow certain health claims in food advertising or labeling.

Frustrated by its inability to influence the FDA proposal before it was made public, CRN staged a model Congressional hearing on September 8, 1986, at its annual meeting in Washington, D.C. The meeting's overall theme was "Health Messages—New Directions and New Opportunities." In his opening remarks, CRN president J.B. Cordero called the draft FDA document "one of the worst-kept secrets in Washington." After noting that CRN had gotten its copy by filing a Freedom of Information request with the FDA, Cordero read from the draft's preamble:

"In this notice, the Food and Drug Administration (FDA) discusses a new and innovative initiative concerning the placing of health-related claims or information on food labeling and the criteria it will apply in evaluating the propriety of such labeling.

"The agency also announces its intention to form a Public Health Service committee that will attempt to develop health messages appropriate for use on food labeling.

"FDA recognizes that this new initiative represents a substantive change in past agency policy and, because of the complexity of the matter and the broad public interest, wishes to proceed cautiously and deliberately in its regulatory approach. Consequently, while this notice represents current policy used by FDA to regulate health messages on food labeling, the agency is soliciting public comments on whether the policy is appropriate and reasonable or requires specific revision."

After indicating that CRN's hearing was designed in part "to provide useful comments—as FDA requested—to those who shape public health policy," Cordero observed:

- The FDA proposal represents a significant step forward toward encouraging food manufacturers to make health claims. The document incorporates many of CRN's points and should be viewed favorably by its members.

- Nevertheless, substantial differences remain, especially in FDA's negative attitude about the expected application of this policy to dietary supplements.

- While CRN applauds the progress it has helped bring about, it will not remain silent until the prejudice (real or perceived) against vitamin and mineral products is excised from FDA policy.

Cordero also said, "Until recently, the policy of the FDA seemed to be to prohibit a company from making a health claim for a particular food product. Such a claim used to make the product a drug under the Food, Drug, and Cosmetic Act, and thus subject to the new

drug approval process. Today, this prohibition seems to be changing due to the actions of the Kellogg Company when it launched its All-Bran cereal campaign in October 1984. These advertisements precipitated a nationwide debate that challenged FDA either to conclude that All-Bran was an unapproved new drug or to modify its health message policy position."

Cordero listed seven "social dynamics" he believed had shaped the FDA policy review:

1. Accumulating evidence suggests relationships among certain foods, dietary habits, and health problems and supporting dietary and lifestyle changes.

2. Consumers are becoming increasingly aware of, and interested in, the relationship among diet, health, and costs.

3. Congress, federal agencies, and many health professional groups believe that consumers need more information about the role of nutrition in the maintenance of promotion of health and about the relationship between nutrition and diseases.

4. Food manufacturers want and need a mechanism to provide accurate, truthful, and non-misleading information about the potential role that specific foods may play in improving diet and promoting good health.

5. Wellness and fitness have become "commodities" that are being marketed and have become big business.

6. Every level of our health care system is under pressure to reduce costs.

7. FDA long has believed that it is important to promote general health measures that will improve public understanding, increase self-help toward disease prevention, and lower overall mortality and morbidity statistics.

Cordero said that "affected interests . . . have moved from the argument over whether the public should be informed. Now the focus is on how accurate, truthful and nondeceptive information can be provided while holding at bay 'the jackals of nutritional fraud.'" One question he hoped CRN's hearing would address is whether health messages should be permitted for supplements as well as conventional foods.

For the mock hearing, key Congressional staffers played the roles of members of Congress while FDA officials and others "testified" during a lively 3-hour session. The chair was W. Benjamin Fisherow, counsel, Subcommittee on Oversight and Investigations, House Committee on Energy and Commerce. From the same committee staff came two House colleagues: Edwin H. Allen, associate counsel of the parent committee, and Robert S. Adler, counsel, Subcommittee on Health and the Environment. The participant from the Senate was W. Douglas Campbell, majority (Republican) health counsel, Committee on Labor and Human Resources.

"There is no turning back," said Fisherow in opening remarks. "There will be a policy from the FDA sooner or later. It will try to separate the good claims

from the bad claims, and it will apply to all segments of the food industry . . . to the honest businessman and the knave alike."

He urged food supplement marketers to exercise caution, however. "If there is an early overload of claims, particularly claims at the margin, you may find yourself facing an overreaction from the regulators," he warned. He also suggested that the FDA must be prepared to protect the marketplace by enforcing whatever regulations it establishes, for "if the honest businessman sees competitors getting away with murder, he may feel forced to do the same. Then we have something approaching chaos. We could have an ugly marketplace, and that's no good for anyone."

He also said that "any message significant enough to put on a food product's label is important enough to be featured in its advertising. It's unfortunate that we have two separate regulatory agencies that will be regulating the same information directed to essentially the same audience for essentially the same purposes, but I think we're stuck with it. The Federal Trade Commission is not going to give up its responsibility to regulate advertising. The Food and Drug Administration certainly is not going to give up its responsibility to regulate labeling. So while we have to deal with that, we don't have to deal with the kind of conflict we saw in the All-Bran case between FDA and FTC. The worst thing we can envision is 60 million American consumers seeing a message in advertising on television that would result in misbranding if it appeared on the product's label."

The first to face the panel were two FDA officials: Allan L. Forbes, M.D., director, Office of Nutrition and Food Sciences, Center for Food Safety and Applied Nutrition, and Fred H. Degnan, associate chief counsel for enforcement, Office of General Counsel.

Dr. Forbes pointed out that "this all started with fiber but right at the very beginning it became patently obvious that the whole scope of nutrition science is involved. It's not just non-nutrient components of foods, it's vitamins and minerals, micronutrients, macronutrients, protein, fats, and so on . . . And then there's the related matter of how much of whatever it is you're talking about is biomedically significant . . . One of the most difficult problems to deal with is if you provide a claim, is it specifically related to what's in the package or is it of a more generic nature."

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Mr. Degnan cautioned that health-related information on food labeling may produce a distorted impression of the relative value of individual foods. With respect to supplements, he said that although FDA policy permits factual statements on labeling, the support for health messages is based on data relating good health to total dietary pattern rather than to individual supplements.

Following their prepared testimony, Fisherow asked Dr. Forbes whether the staff of the FDA is prejudiced against the dietary supplement industry, feeling that the industry markets products improperly, sells products that are unnecessary in some instances and unsafe in others, and has taken advantage of the FDA through Congressional action.

"It just isn't so," Forbes responded. "We are concerned about nutrient toxicity. Every nutrient in the book is toxic at some given amount over some given period of time. On the other hand, it's not an FDA perspective, it's a national nutritional community perspective that there is a very significant role for dietary supplements, vitamins and minerals—and other components of foods—under very specific sets of circumstances. Whenever there is doubt about the adequacy of a diet, it's perfectly appropriate and very useful for a dietary supplement to be applied: for example, the elderly individual whose total caloric consumption may well be 1,000 to 1,200 calories a day and is accompanied by a lack of physical activity. It is virtually impossible under those circumstances for that individual to receive an adequate supply of vitamins and minerals. A well balanced vitamin and mineral supplement is of immeasurable value to sustain the nutritional health of such an individual.

"Similarly, you have circumstances such as infancy, pregnancy, and a whole host of disease states where the diet is compromised. So there is a very positive foundation at FDA and in my own mind for the acceptance of a major public health role for dietary supplements. That's a simple fact." [A bit too simple for those of us who believe that correction of an inadequate diet is generally preferable to supplementation—Ed.]

More questioning elicited from Dr. Forbes some comments about education: "Nutrition understanding by the general public is poor. The basic problem is absence of solid nutritional education in elementary and secondary schools. That's the core dilemma . . . Food labeling is only a mini-part of all that." Later he added: "There's absolutely no earthly reason why the food label can't be one more vehicle for conveying reasonable information to the general public. But I would not anticipate that its impact would be massive. I hope it would be useful."

Later he was asked whether "in the typical American on the typical American diet there are nutritional deficiencies that ought to be addressed by nutritional supplements?" He responded: "The policy of our government spelled out in the Dietary Guidelines is that

if you eat a well balanced diet, there's rarely a need for supplement . . . The nutritional status of Americans is good . . . There are vulnerable groups with deficits of one nutrient or another . . . but there is no evidence of massive deficits in the general population."

CRN's mock hearing did an excellent job of addressing the complex question facing the FDA: Is there a way to permit health claims for food and supplement products without opening the floodgates to nutritional fraud? No simple answer appears on the horizon.

Mr. Fanning is a freelance writer who produces the nationally syndicated action column, "Help-Mate."

BRIEFS

America's food bill. According to a Food Institute report, sales by food retailers exceeded \$413 billion in 1985, accounting for 30% of all retail trade in the U.S. "Supermarkets are aggressively marketing convenience foods while convenience stores are attacking the fast food business," the report said.

Phony apple juice. Beech-Nut Nutrition Inc., two of its executives, and three of its suppliers have pleaded innocent to criminal charges of marketing millions of bottles of bogus apple juice between 1978 and 1983. According to an Associated Press report, a 470-count indictment charges that the product, labeled as 100% apple juice for babies, was actually made from flavored concentrate. The company and its officers allegedly sold the phony juice to avoid taking a \$3.5 million loss in inventory. The judge presiding over the case, which will be tried in the U.S. District Court in Brooklyn, N.Y., has predicted a lengthy trial. Beech-Nut was also named in a \$10 million class-action lawsuit filed in Philadelphia.

Liquor manufacturers sued. A 24-year-old Chicago man has filed suit against two liquor companies seeking compensation for his seven years of alcoholism. The suit also asks that the companies be required to place warning labels on their products stating that alcohol consumption is addictive. According to *Physicians Financial News*, a recently formed group called the Council for Law and Education on Alcohol Risks plans to file further suits with the hope of gaining money for education and research on alcoholism. The Council's founder, New York lawyer Gary Rubin, says it is looking into the best way to apply product liability law to alcohol-related problems.

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HOMEOPATHY: IS IT MEDICINE?

Stephen Barrett, M.D.

During the past few years, increasing numbers of homeopathic remedies have been offered for sale in health food stores and elsewhere. Their promoters suggest that they are safe, effective, natural remedies which have no side effects. This report summarizes a year-long investigation of homeopathy I conducted on behalf of *Consumer Reports* magazine.

Homeopathy's roots

Homeopathy dates back to the late 1700s when Samuel Hahnemann (1755-1843), a German physician, began formulating its basic principles. Hahnemann was justifiably distressed about bloodletting, leeching, purging, and other medical procedures of his day which did far more harm than good. He was also critical of medications like calomel (mercurous chloride) which was given in doses that caused mercury poisoning. Instead, he developed his "law of similars"—that the symptoms of disease can be cured by substances which produce similar symptoms in healthy people. The word "homeopathy" is derived from the Greek words *homeo* (similar) and *pathos* (suffering or disease).

Although ideas like this had been espoused by Hippocrates in the 4th century B.C., and by Paracelsus, a 15th century physician, Hahnemann was the first to use them in a systematic way. He and his early followers conducted "provings" in which they administered herbs, minerals and other substances to healthy people, including themselves, and kept detailed records of what they observed. Later these records were compiled into lengthy reference books called *materia medica*, which are used to match a patient's symptoms with a "corresponding" drug.

Hahnemann believed that diseases represent a disturbance in the body's ability to heal itself and that only a small stimulus is needed to begin the healing process. In line with this—and to avoid toxic side effects—he experimented to see how little medication could be given and still cause a healing response. At first he used small doses of accepted medications. But later he used enormous dilutions and concluded that the

smaller the dose, the more powerful the effect—a principle he called the "law of infinitesimals."

That, of course, is just the opposite of what pharmacologists believe today. As summarized in the 1977 report of an Australian Parliament committee of inquiry: "For each [drug] property, there is a clearly defined dose-response relationship in which increasing the dose increases the effect . . . There is not one example in the whole area of pharmacology in which simple dilution of a drug enhances the response it produces any more than diluting a dye can produce a deeper hue, or adding less sugar can make food sweeter."

Homeopathy's remedies

Homeopathic drugs are prepared as follows: If the medicinal substance is soluble, 1 part is diluted in either 9 or 99 parts of a water and/or alcohol solution and shaken vigorously; if insoluble, it is finely ground and pulverized in similar proportions with powdered lactose (milk sugar). One part of the diluted medicine is diluted, and the process is repeated until the desired concentration is reached. Dilutions of 1 to 10 are designated by the Roman numeral X ($1X = 1/10$, $2X = 1/100$, $3X = 1/1,000$, $6X = 1/1,000,000$). Similarly, dilutions of 1 to 100 are designated by the Roman numeral C ($1C = 1/100$, $2C = 1/10,000$, $3C = 1/1,000,000$, and so on). Most remedies today range from 6X to 30X.

According to the laws of chemistry, there is a limit to the dilution that can be made without losing the original substance altogether. This limit, called Avogadro's number (6.023×10^{23}), corresponds to homeopathic potencies of 12C or 24X (1 part in 10^{24}). Hahnemann himself realized there is virtually no chance that even one molecule of original substance would remain after extreme dilutions. But he believed that the vigorous shaking or pulverizing with each step of dilution leaves behind a spirit-like essence which cures by reviving the body's "vital force." Hahnemann's theories have never been accepted by scientifically oriented physicians, who charge that homeopathic remedies are placebos (inert substances).

Because homeopathic remedies were actually less dangerous than those of 19th-century medical orthodoxy, many medical practitioners began using them. At the turn of the century, homeopathy had some 14,000 practitioners and 22 schools in the United States alone. But as medical science and medical education advanced, homeopathy declined sharply, particularly in America, where its schools either closed or converted to modern methods. The last pure U.S. homeopathic school closed during the 1920s, but Hahnemann Medical College (Philadelphia) continued to offer homeopathic courses on an elective basis until the late 1940s. A few graduates from other modern medical and osteopathic schools later became homeopaths by taking courses here or abroad or by training with a practicing homeopath.

Homeopathic remedies were given legal status by the 1938 Federal Food, Drug, and Cosmetic Act, which was shepherded through Congress by Senator Royal

Copeland (D-NY), a prominent homeopathic physician. One provision of this law recognized as drugs all substances included in the *Homeopathic Pharmacopeia* of the United States. Soon to be in its ninth edition, this book lists more than 1,000 substances and the historical basis for their inclusion: not modern scientific testing, but homeopathic "provings" conducted as long as 150 years ago.

Today's marketplace

The 1985 directory of the National Center for Homeopathy, in Washington, D.C., lists some 300 licensed practitioners, half of them physicians and the rest mostly chiropractors, naturopaths, dentists, veterinarians or nurses. But Jay P. Borneman, of Swarthmore, Pennsylvania, whose family has been marketing homeopathic remedies since 1910, believes that several hundred more consider themselves homeopaths and that many conventional physicians utilize one or a few homeopathic remedies for specific conditions. Larger numbers of homeopaths practice in England, France, India, Germany, the Soviet Union and several other countries where homeopathy is more popular.

Laypersons are also involved in practicing homeopathy. Some operate offices, which may not be legal. A few unaccredited schools have offered correspondence courses leading to certificates or "degrees" in homeopathy. (One of them is Donsbach University, the unaccredited correspondence school whose nutrition "degrees" triggered the current drive by dietitians for nutritionist licensure [see NF 2:40].) Consumers interested in homeopathic self-treatment can obtain guidance through lay study groups, books, and courses sponsored by the National Center for Homeopathy.

Most homeopathic practitioners still rely on materia medica in choosing among the thousands of remedies available. But a few utilize computerized electrical devices which they claim can help match the remedies to the patient's diseased organs. "Classical" homeopaths—who follow Hahnemann's methods closely—take an elaborate history to fit the remedy to the individual (see page 4). They prescribe one substance at a time, while non-classical homeopaths may prescribe several.

Homeopathic remedies are available from practitioners, health food stores and drugstores, as well as manufacturers who sell directly to the public. A few products are sold person-to-person through multilevel marketing companies. Home remedy kits are available from several companies. Jay Borneman believes that U.S. sales of homeopathic products probably total no more than \$15 million a year, with half done by five companies that have been in business for 75 to 150 years.

According to FDA officials, homeopathic remedies used to be marketed on a small scale by these five companies, mainly to serve the needs of licensed practitioners. "These drugs bore little or no labeling for con-

HOMEOPATHIC HOME REMEDY KITS

The National Center for Homeopathy's Homeopathic Household Kit (\$35.00), prepared by Luyties Pharmacal Company, contains 28 remedies and an index-card-sized list of suggested uses. Among the indicated uses are sudden fever, enlarged tonsils, fretfulness, frequent or painful urination, food poisoning, earache, nosebleed, puncture wounds, and delayed menstruation. The price includes a copy of the book *Homeopathic Medicine at Home*. A bumper sticker, "Homeopathy: the safer medicine" is available for \$1.00.

HRI-Dolios' Homeopathic Household Kit (\$34.95) contains 24 remedies, each containing five to nine ingredients and named according to its purpose. Included are: Diarrhea, Glandular for Women, Glandular for Men, Travel Sickness, Trauma, Bed Wetting, and Hepatic Dysfunction. The directions for all are identical: "5 granules under the tongue 3 times a day or as directed by physician."

Boiron-Borneman, Norwood, Pennsylvania, offers a Natural Home Health Care Kit for \$59.95. It contains 40 remedies for a wide range of common ailments including colds, flu, hoarseness, indigestion, bruises, motion sickness, poison ivy, insect bites, menstrual pain, colic, and teething. The kit contains four pages of instructions written in the style of a materia medica. The instructions warn: "None of the medicines listed should be used on a seriously ill individual. A doctor should be consulted immediately. If . . . an individual's condition does not improve rapidly (within one or two days), a physician should be consulted as soon as possible."

sumers because they were intended for use by homeopathic physicians who would make a diagnosis and either compound a prescription, dispense the product, or write a prescription to be filled at a homeopathic pharmacy," says William G. Nychis, the FDA's expert on homeopathy. "The pharmacies also sold a limited number of nonprescription homeopathic products. During the past decade, however, the homeopathic marketplace has changed drastically. New firms have entered the field and sold all sorts of products through health food stores and directly to consumers."

Jay Borneman readily admits that "there is a lot of insanity operating under the name of homeopathy in today's marketplace. Companies not committed to homeopathy's principles have been marketing products that are unproven, untested, not included in the *Homeopathic Pharmacopeia*, and combination products that have no rational or legal basis. Some are simply quack products called homeopathic for marketing purposes."

Perhaps the most blatant promotion was that of Biological Homeopathic Industries, Albuquerque, New

Mexico, which in 1983 sent a 123-page catalogue to almost 200,000 physicians nationwide. Among its products were BHI Anticancer Stimulating, BHI Antivirus, BHI Stroke, and 50 other types of tablets claimed to be effective against serious diseases. In 1984, the FDA forced the company to stop distributing several of the products and to tone down its claims for the rest.

In September 1985, agents of the FDA and Pennsylvania Health Department seized some \$125,000 worth of drugs sold person-to-person by Probiotic, Inc., of Reading, and Homerica, Inc., a subsidiary. The products were labeled Skin Relief, Human Power Recharger, and Pain Control, and did not state what they were for, what was in them, or how to use them. Other questionable products are listed in the chart below.

Homeopathy's legal status

In most states, homeopathy can be practiced by any physician or other practitioner whose license includes the ability to prescribe drugs. Three states—Ari-

QUESTIONABLE HOMEOPATHIC REMEDIES MARKETED AS NONPRESCRIPTION DRUGS DURING THE PAST TWO YEARS

Company	Product Names
Bioforce of America, Ltd. Plainview, N.Y.	Arthritis Formula, Asthma Formula, Circulation Formula, Prostate Formula, Liver & Gall Bladder Formula
Biological Homeopathic Industries Albuquerque, New Mexico	Bleeding, Chest/Pleurisy, Liver, Pancreas
Boericke & Tafel Philadelphia, Pennsylvania	Spasmodic Croup, Suppressed Menses, Hemorrhoids, Simple Kidney Disorders, Dribbling of Urine
Consumer Express* Lakes Charles, Louisiana	Arthritis, Menopause, Allergy, Enzyme (for fatigue)
Dolisos Las Vegas, Nevada	Hepatic Dysfunction Drops, Vermifuge Drops (Children)
Humphreys Pharmacal Incorporated Rutherford, New Jersey	Simple Fevers, Simple Diarrhea, Asthmatic Paroxysms, Irregular or Delayed Menses
Longevity Marina Del Rey, California	BeLite (for weight reduction), Male Essential, Female Essential
Luyties Pharmacal Company St. Louis, Missouri	Whooping Cough, Worms, Insomnia, Enlarged Prostate, Gonorrhoea, Gall-Stones, Heart Tonic
Nutritional Factors (Natra-Bio products) Concord, Calif.	Arthritis, Chest Cold, Flu, Herpes, Exhaustion
Seroyal Brands, Inc. Concord, California	Cardio Forte, Thyro Forte, Renal Forte, Ovarian Forte
Standard Homeopathic Company Los Angeles, California	Hoarse Cough, Hacking Cough, Bronchial Cough, Loose Moist Cough, Dry Cough, Spasmodic Cough, Bedwetting Tablets

*Consumer Express is a multilevel marketing company. One of its distributors has distributed a fact sheet which claimed that the company's Master-Key Formula 1 can lower blood pressure, cleanse the liver, improve memory and act on degeneration of the heart.

zona, Nevada and Connecticut—have separate homeopathic licensing boards. The Nevada situation is notable because some of its practitioners acquired licenses as homeopaths after other states revoked their medical license for cancer quackery.

Arizona's licensing boards are subject to "sunset" review, which means they will be abolished unless reauthorized by the Arizona legislature. Last year, as the expiration date for the homeopathy board drew near, the state's homeopaths joined forces with health food stores to lobby vigorously. To counter the idea that a board might not be needed because there were only a handful of homeopaths in the state, the American Institute of Homeopathy (a group of about 100 classical

homeopathic physicians) urged its members to apply for licensure in Arizona "to show that there are doctors interested in practicing homeopathy today." According to the National Health Federation, a health food industry group which helped with the campaign, close to 2,000 supporters attended hearings and state legislators got hundreds of handwritten letters supporting homeopathic licensing. The reauthorization bill passed unanimously.

Public protection regarding drugs is based on a framework of federal laws and regulations which require that drugs be safe, effective, and properly labeled. But the FDA has not applied this framework to homeopathic remedies. Since most homeopathic remedies

"FITTING THE REMEDY TO THE INDIVIDUAL"

"Do you like your home temperature warm or cold?"

"How is your thirst?"

"Do you drink tap water? Ice water?"

"Do you eat ice?"

"Do you drink a whole glass at a time or just sip it? What's your nature?"

The questioner was David Wember, M.D., who has been practicing classical homeopathy in Falls Church, Virginia, for more than 10 years. His office resembles that of a standard family practitioner except for cabinets and open shelves which contain thousands of remedies in small bottles.

Dr. Wember, one of America's most prominent homeopaths, is a board member of the National Center for Homeopathy and directs its seminars for doctors. His manner is alert and extremely warm. On most days, he sees 10 to 12 patients, new ones for an hour and others for half an hour. ("A bit more time than the average medical doctor," he notes.) On the particular day when I observed, his patients complained of headaches, diarrhea, overweight, chronic tension, and arthritis—symptoms typically seen in any general medical office. Each patient was asked standard medical questions plus many more about such things as emotions, moods, food preferences, and reactions to the weather.

"Homeopathy is based on all of the patient's symptoms, both emotional and physical." Dr. Wember explained. "This includes likes and dislikes, cravings and aversions to foods, and the patient's relationship to the environment. They involve the whole person and are more important than pain in the knee, or something like that, which is a symptom of only part of the person. We try to fit the remedy to the nature of the individual rather than a disease process."

As a patient's answers began to suggest a familiar pattern, Dr. Wember compared them to lists in a homeo-

pathic materia medica and asked questions to confirm his hunches. The remedy arrived at, he removed a few granules from one of his many bottles, placed them on the patient's tongue, and arranged for another appointment.

"I treat with whatever is most natural and least toxic. Most of the time I can use homeopathic remedies, which have no toxicity. But sometimes I will use drugs. For example, penicillin for a strep throat or recurrent ear problem that isn't getting better homeopathically. But most often it's the other way around. They have recurrent problems and keep getting antibiotics. Over a period of time we get them off antibiotics and the problems go away."

When asked how he responds to the charge that homeopathic treatment can delay needed medical care, he replied: "Above all, I'm a doctor. When I believe someone needs drugs or surgery, I refer that person. My approach has the advantage of not rushing in with treatment that might have harmful side effects. Many patients who see me are afraid of doctors and drugs and would not go to a regular doctor. They feel they can trust me because I don't overtreat. If they need medical care, often I can convince them to go for it. So with these patients, homeopathy fosters medical care rather than delaying it."

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contain no detectable amount of active ingredient, it is impossible to test whether they contain what their label says. They have been presumed safe, but unlike most other drugs, they have not been proven effective against disease by scientific means such as double-blind testing. If the FDA were to require such proof for homeopathic drugs to remain on the market, the industry would not survive unless it could persuade Congress to change the law.

The American Association of Homeopathic Pharmacists, a group of leading homeopathic manufacturers, has proposed that homeopathic remedies remain marketable without a prescription for minor ailments that do not require complex medical diagnosis or medical monitoring. Traditional homeopathic remedies used for the treatment of serious diseases would be available by prescription only from physicians and others authorized by state laws to prescribe drugs. The FDA is considering this proposal and hopes to issue a policy guide for homeopathic products in the near future.

In January 1986, the North Carolina Board of Medical Examiners revoked the license of George A. Guess, M.D., the state's only licensed homeopathic physician, after concluding that he was "failing to conform to the standards of acceptable and prevailing medical practice." (The decision has been appealed to the courts.) Dr. Guess is a 1973 graduate of the Medical College of Virginia and was board-certified in family practice from 1976 through 1983. But in 1978 he began practicing homeopathy. During the North Carolina proceedings, another family practitioner testified that although Dr. Guess is intelligent and well trained in orthodox medicine, "homeopathy is not medicine. It's something else."

Most pharmacy school educators seem to feel the same way. Last year I sent a questionnaire to the deans of all 72 U.S. pharmacy schools. Faculty members from 49 schools responded. Most said their school either doesn't mention homeopathy at all or considers it of historical interest only. Hahnemann's "law of similars" did not find a single supporter, and all but one respondent said his "law of infinitesimals" was wrong also. Almost all said that homeopathic remedies were neither potent nor effective, except possibly as placebos for mild, self-limited ailments. About half felt that homeopathic remedies should be completely removed from the marketplace.

Homeopathic research

Probably the best review of homeopathic research is the two-part article by A.M. Scofield, Ph.D., a British biochemistry professor. In the *British Homeopathic Journal* [73:161-180 and 73:211-226, 1984], he concludes: "Despite a great deal of experimental and clinical work there is only a little scientific evidence to suggest that homeopathy is effective. This is because of bad design, execution, reporting or failure to repeat promising experimental work and not necessarily because of the inefficacy of the system which has yet to be properly tested on a large enough scale . . . It is hardly surprising in view of the quality of much of the experimental work as well as its philosophical framework, that this system of medicine is not accepted by the medical and scientific community at large."

Scofield cautions against dismissing homeopathy simply because its underlying philosophy does not fit accepted scientific premises. Feeling that "some of the experimental work already done suggests that homeopathy may be of value," he recommends that carefully controlled experiments be done to test homeopathy further.

One apparently well designed study was published in the British journal *Lancet* on October 18, 1986. In this study 56 hay fever patients who received a homeopathic preparation of mixed grass pollens had fewer symptoms than a comparable group of 52 patients who received a placebo. Whether this type of finding can be consistently reproduced remains to be seen.

Overview

During my lengthy investigation, I was impressed by the warmth and sincerity of the homeopathic leaders I met. But the key question is whether homeopathy is effective.

Consumer Reports concluded in its January 1987 issue that, "Unless the laws of chemistry have gone awry, most homeopathic remedies are too diluted to have any physiological effect . . . CU's medical consultants believe that any system of medicine embracing the use of such remedies involves a potential danger to patients whether the prescribers are M.D.'s, other licensed practitioners, or outright quacks. Ineffective drugs are dangerous drugs when used to treat serious or life-threatening disease. Moreover, even though homeo-

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pathic drugs are essentially nontoxic, self-medication can still be hazardous. Using them for a serious illness or undiagnosed pain instead of obtaining proper medical attention could prove harmful or even fatal."

Homeopathic leaders insist that their remedies are effective and that studies *do* support this viewpoint. They also suggest that homeopathy's popularity and long survival are evidence that it works. But the only way for homeopathy to gain acceptance by the scientific community would be to demonstrate positive results through repeated experiments designed with the help of critics and carried out with strict safeguards against experimenter bias and fraud.

If the FDA required homeopathic remedies to be proven effective in order to remain on the market, homeopathy would face extinction in the United States. But no indication exists that the agency is considering this. FDA officials regard homeopathy as relatively be-

nign and believe that other problems should get enforcement priority. Moreover, if the FDA attacks homeopathy too vigorously, its proponents might even persuade Congress to rescue them. On the other hand, some level of enforcement is needed to prevent the homeopathic marketplace from getting completely out of hand.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. The following homeopathic proponents reviewed drafts of this article and made helpful suggestions: Jay P. Borneman, David G. Wember, M.D.; Jacquelyn Wilson, M.D., president, American Institute of Homeopathy; Julian Winston, editor, *Homeopathy Today*; and Dana Ullman, M.P.H., president, The Foundation for Homeopathic Education and Research.

MY VISIT TO THE NEVADA CLINIC

Stephen Barrett, M.D.

A few physicians who consider themselves homeopaths use "electrodiagnostic" machines to help select the remedies they prescribe. The main proponent of this method in the United States is F. Fuller Royal, M.D., owner and medical director of The Nevada Clinic, Las Vegas, Nevada. Dr. Royal is a member of Nevada's homeopathic licensing board and was its president from 1983 to 1985.

Nevada Clinic publications state that electrodiagnosis is one of the most effective aids for diagnosing illness and that "there are no incurable diseases, only ignorant physicians." The initial clinic visit—which spans a two-day period—commonly costs \$700 to \$800, including \$165 for allergy testing and \$100 for homeopathic remedies. The program also includes lectures on nutrition and allergies.

The clinic is located in a small shopping center near the outskirts of Las Vegas. It has 10,000 feet of floor space with more than 40 rooms. The spacious waiting room is tastefully decorated and seats 18 people. Most staff members wear white uniforms with royal blue jackets. There are four physicians, each of whom sees about 70 patients during a 4½-day work week. Patients are typically asked to return three times during the six months after their first visit and annually thereafter. Most learn of the clinic through word-of-mouth or ads in homeopathic or health food publications. After making an appointment, they are sent medical history forms to complete.

Upon arrival at the clinic, patients are given a name tag and asked to sign an insurance form and a consent form which acknowledges that the clinic spe-

cializes in electrodiagnosis, uses homeopathic methods, has made no guarantees, and will not function as their primary physician for routine examinations or other necessary treatment.

After signing the forms, patients receive a 71-page *Patient's Handbook* and are shown a 20-minute videotape, both of which introduce the staff and explain the clinic's methods. Then they are escorted to the various rooms where examinations and educational programs are carried out. They are weighed, blood pressure is taken by a nurse, and specimens of urine and blood are taken for laboratory analysis. Since overnight fasting is required for some of the blood chemistry tests, a snack of juice, nuts and rice cakes is provided after the blood is drawn. (Some clinic "veterans" bring their own snacks.)

All patients at The Nevada Clinic are diagnosed with a computerized galvanometer called the INTERRO. This is said to measure changes in the skin's electrical resistance which indicate whether the body's organ systems have proper "electromagnetic energy balance."

To use the device, the doctor probes "acupuncture points" on the patient's hands and feet and interprets numbers on the computer's screen. (The less the electrical resistance, the higher the score.) One wire from the computer goes to a brass cylinder covered by moist gauze which the patient holds in one hand. A second wire is connected to a probe which the doctor touches to the patient's other hand or foot. When he does so, it completes a low-voltage circuit and causes a band to rise from 20 to up to 100 on a scale on the

computer screen. Readings over 60 are said to represent "inflammation," readings of 48 to 60 are normal, and readings below 48 represent "degeneration," which may signify cancer or atherosclerosis. The device makes a whining noise resembling that of an electrical motor; the higher the number, the louder the noise.

The INTERRO is programmed so that charts and tables can be placed on the screen to help the doctor select from approximately 1,700 homeopathic remedies. By selecting certain remedies and retesting with the probe, the doctor determines which remedies will balance the disturbed energy flow in the patient's body. (According to the *Patient's Handbook*, "the magnetic blueprint of the homeopathic remedy flows through the body via the electrical current and resonates in harmony with the body, returning an abnormal reading to normal.") One or more remedies may be placed in a tray attached to the computer to receive an energy transfer.

The INTERRO and another device are used to diagnose allergies. During the latter procedure, vials of common allergy-causing substances are placed in the tray so they become part of the circuit.

Mercury dental fillings are probed with another electrodiagnostic device said to measure negative electrical potentials, which, if too great, indicate that toxic amounts of mercury or other metals may spread to surrounding tissues and cause eventual damage to nearby nerves.

Some patients are tested by the clinic nutritionist with a device in which vitamins, minerals and enzymes are placed in a tray connected to a meter that supposedly indicates whether the patient needs them.

Last October, at Dr. Royal's invitation, I underwent all of the electrodiagnostic tests except for vitamin testing. After testing me on the INTERRO, he said I had a number of electromagnetic blockages and had "temporomandibular joint stress, probable subclinical allergies, and possible mild early preclinical arthritis."

After determining what he thought was the most appropriate remedy, he placed a vial of vitamin B₁₂ in the tray and "transferred an electromagnetic blueprint" to it. He explained that it was desirable to overcome "energy blocks" caused by the scars in my skin. Since the energy travels mainly through acupuncture meridians on the surface of the skin, he wanted to remove the blockage by injecting the specially prepared B₁₂ into the points of blockage: my appendectomy scar, the areas inside my throat from which my tonsils had been removed, the skin near my jaw joints, and my vaccination scar. After doing this, he retested and said that most of the blocks were gone, but my jaw showed considerable tension and should be manipulated. After doing that, he prescribed five homeopathic remedies for home use and advised me to have my dentist replace one of my mercury amalgam fillings with another material.

During the testing, I noticed that the harder the probe was pressed to my finger or toe, the higher the reading on the INTERRO screen. Royal readily acknowl-

edged this, but said, "that's why it takes a lot of training to use the equipment properly."

The manufacturer's literature states that if the INTERRO is used for medical diagnosis in the United States, it must bear the label "FOR INVESTIGATION USE ONLY. The performance characteristics of this product have not been established" and that diagnosis must be confirmed with an accepted medical procedure. But Royal told me that no such label was needed.

A sign in the clinic pharmacy warns that homeopathic remedies should be kept away from electrical outlets and appliances and should not be x-rayed at airport entries. The reason for this is that "remedies possess electromagnetic fields [that] become distorted and unpredictable when strongly affected by other magnetic fields."

The nutrition lecture was conducted by a woman who said she had taken correspondence courses through Donsbach University (an unaccredited school) and the American Nutrition Consultants Association. Her main advice was to eat less meat and more fresh fruits, vegetables and other unprocessed foods. She recommended installation of a home water purifier. She also said that aluminum pots can cause Alzheimer's disease, that milk (other than goat's milk) is not good for adults, that microwave cooking "zaps the life force" and changes the molecular structure of foods, and that sunshine beneficially stimulates the pituitary gland.

Royal calls his approach "bioenergetic medicine" and says it is the wave of the future. He was introduced to it by Floyd Weston, a former insurance executive who had investigated its use in Germany. (According to a 1981 article in the National Health Federation's *Public Scrutiny*, Weston learned about electrodiagnosis after organizing a group of businessmen "to conduct a worldwide search for the answer to good health.")

When Weston approached him, Royal was practicing medicine in Oregon and felt that the medical climate would be hostile toward electrodiagnosis. So Weston investigated the situation in Nevada and reported that influential persons were interested in having another type of tourist industry besides gambling and had promised him that Royal would not be bothered there by medical authorities.

In 1979, before Royal could relocate, Oregon's board of medical examiners became concerned about his use of electrodiagnosis and ordered him to take written and oral competency examinations. He passed the written examination, and since he had been planning to move anyway, it was agreed that the oral exam would be dropped and his Oregon license classified as inactive. The Governor of Nevada subsequently appointed Royal to a homeopathic advisory board, and a homeopathic licensing law was passed which included "noninvasive electrodiagnosis" as part of the definition of homeopathy. So this practice is now legal in Nevada.

The Nevada Clinic of Preventive Medicine

opened in 1980, but in 1983 its name was shortened because insurance companies would not honor claims from a "preventive medicine" clinic. ("With the name change," the clinic newsletter notes, "more patients' insurance claims are being paid.") Royal originally directed the clinic's medical aspects and Weston directed its business aspects, but in 1983 they parted company, and in 1984, Royal became sole owner and operator.

Royal struck me as an extremely sincere person who believes in what he is doing and wants very much to help those who consult him. His clinic set-up radiates caring and concern. The atmosphere is unhurried, and the staff is friendly, efficient and energetic. Everything is explained in detail, an aspect of treatment missing from many medical practices. From a marketing standpoint, the clinic set-up is outstanding.

So far 16,000 patients have been seen at The Nevada Clinic. Royal said he plans to double the clinic's size, to add a mini-kitchen and physical therapy department, and to computerize all patient records so that statistical reports will be easy to compile.

Do Royal's methods actually help people? It would be easy to suggest that since electrodiagnosis and homeopathy are outside the realm of accepted medical practice, such treatment is worthless. But Royal says that most of his patients suffer from headaches and/or allergies. These conditions often have an emotional

component that can be influenced by a positive doctor-patient interaction—which most patients who trust The Nevada Clinic are likely to have.

Does the clinic lure people away from effective treatment? My single visit could not determine this, but several patients told me they had not been helped by their previous doctors. Royal said he does not accept cancer patients because "if they get better, physicians will say it was a spontaneous remission or that the patient did not have cancer at all; and if they die, I'll get blamed. It's a no win situation."

Royal said he does not want to treat severe neurological disorders such as amyotrophic lateral sclerosis ("Lou Gehrig's disease") or the late stages of multiple sclerosis. Nor does he wish to treat illnesses severe enough to require hospital care or surgery. Regarding medications prescribed by other doctors, he said, "All medications are to be continued until improvement is noted by the referring doctor and/or the patient. We advise patients to follow the advice of their personal physician and to give us progress reports at specific times."

It would be fascinating to conduct a well designed study to measure what Royal is actually accomplishing. He seems open and self-confident enough to cooperate with such a study if an appropriate person or agency were interested in carrying it out.

BRIEFS

Nutrition programs for computers. *The Journal of Dietetic Software* (P.O. Box 2565, Norman, OK 73070) is now an annual publication with quarterly newsletter updates. The 96-page annual includes over 100 software descriptions, sample printouts, and articles about software applications in nutrition and food service. The newsletter updates cover software programs, conferences, and services for professionals who use software. A one-year subscription costs \$30 (\$35 outside the U.S.).

Diet/breast cancer study. The National Cancer Institute (NCI) has announced plans to study the effect of a low-fat diet on the incidence of breast cancer in 30,000 women at high risk for the disease. According to a recent NCI report, most Americans consume about 40% of their calories from fat. The study will examine the effects of diets with only 20% fat, which is less than the 30% level generally recommended for cancer and heart disease prevention. Peter Greenwald, M.D., Director of NCI's Division of Cancer Prevention and Control, says, "the 20% level is so low that we also will be testing the feasibility of staying on such diets."

Cholesterol education program. The National Heart, Lung and Blood Institute has begun a program to encourage Americans to lower their blood cholesterol levels to lessen their risk of coronary heart disease. Health professionals interested in counseling patients about this can obtain a free information packet from The National Cholesterol Education Program, NHLBI-NIH, C-200, Bethesda, MD 20892.

Grapefruit pillmaker squeezed again. In September 1986, World Communications Inc. filed for bankruptcy, listing liabilities of about \$5 million and assets of \$3 million. Most of the creditors are independent television stations that carried the company's ads for tapes and records as well as its "fat-burning" Grapefruit 45 program. World's president Jay Kholos blamed the company's cash-flow problems on its dispute with the U.S. Postal Service. Postal authorities seized \$4 million in C.O.D. payments after the company violated an injunction against misleading advertising of its diet plan [see NF 2:38]. The authorities are seeking to return the money to customers and may ask for a large civil penalty as well.

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THE LEGACIES OF PAAVO AIROLA

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Sherée L.T. Thompson

Health Plus Publishers, of Scottsdale, Arizona, a division of Airola, Inc., actively markets its books through health food stores. To encourage them to stock up, one of its recent mailings urged: "Take just one of our books, *How to Get Well*, by Dr. Paavo Airola (800,000 copies sold to date—mostly in health food stores). That book recommends vitamins, minerals and other supplements, herbs, juices, and natural foods for more than 60 common ailments, as well as equipment such as juicers, seed grinders, and flour mills."

"For example: for osteoporosis . . . you have the potential of selling: 14 vitamins and supplements, modestly estimated at \$5.00/product; 5 herbal products @ \$3.00 each; groceries . . . \$20; possibly a piece or two of equipment such as a juicer or seed grinder (\$200). TOTAL: \$305.00 . . . And your customer will most likely return for replenishment of supplements and foods."

"These figures might not be accurate, but you get the picture. Now multiply these figures times hundreds of customers and 60+ ailments, and you can see what far-reaching effects one book such as *How to Get Well* can have on your overall sales volume."

The book's jacket states that Paavo Airola, Ph.D., N.D., was "an internationally recognized nutritionist, naturopathic physician, award-winning author, and renowned lecturer. He studied nutrition, biochemistry and biological medicine in Europe, then spent many years studying ancient, herbal, and alternative healing methods during his world-wide travels. His clinical experience was acquired while directing various biological medical clinics in Europe and Mexico. Because of his pioneering work and extensive knowledge, Dr. Airola is looked upon as a world-leading authority on nutrition and holistic medicine." Several of his other publications label him "America's foremost nutritionist" and "America's #1 bestselling health author." But none of them provides details of his educational background.

Airola's books are similar to each other, and a few simply duplicate chapters of other works with new titles. Overall, he touts a diet that stresses fresh, raw, organically grown fruits, vegetables, and grains. Animal proteins are out, except for farm-fresh-fertilized eggs, and unpasteurized cows' or goats' milk. Airola claims that meat causes cancer and that protein requirements can be met from plant sources if they are eaten raw. Enzymes, he says, make the protein in these foods complete. His recommendations also include a regimen of vitamin, mineral, and herbal supplements, fermented foods, and a collection of health and beauty "secrets" from countries all over the world.

Airola died in 1983, but 11 of his 14 books and booklets are still sold by Health Plus Publishers:

- *Stop Hair Loss* (1965), a 32-page booklet, suggests methods for preventing baldness and for restoring hair to bald heads. Airola recommends headstands and a scalp operation to increase scalp circulation, and various dietary rules and food supplements such as kelp (dried seaweed) to "feed your hair from within."

- *How to Keep Slim, Healthy, and Young with Juice Fasting* (1971), an 80-page book said to have 500,000 copies in print, describes how to fast for up to 40 days on juices made from raw fruits and vegetables. Included are stories of how Airola supposedly cured patients of arthritis, cancer, asthma, obesity, diabetes, and abnormal heart rhythms, all with juice fasting. Prolonged fasting is dangerous because it causes breakdown of proteins in vital organs such as the heart and kidneys. But Airola claims (incorrectly) that the body decomposes only dead, dying and damaged cells, tumors and abscesses, and that all vital organs are spared. He says raw juices are "youthifying" and calls juice fasting "the oldest and most effective healing method known to man." His recommendations include string bean skin tea for diabetes, carrot juice for emphysema, and apple

juice for nervousness. But he also attempts to disclaim responsibility by stating (in boldface type): "The information in this book is not intended as diagnosing or prescribing; it should be used in cooperation with your doctor to solve your health problems. In the event you use the information yourself, you are prescribing for yourself, which is your constitutional right, but the author and publisher assume no responsibility."

- *Swedish Beauty Secrets* (1971), a 32-page booklet, claims that "Sweden, a little, far-away Scandinavian country, has produced more internationally known beauties than any other country in the world." Airola attributes this to use of "certain elements in their daily diet and beauty care which the latest scientific research has proven to be miraculous beauty aids." He considers rose hips the "number one beauty aid" because their vitamin C prevents wrinkles from collagen breakdown due to vitamin C deficiency. He also states that they will keep the complexion "velvety fresh" by combating bacterial putrefaction and preventing constipation, which he considers "the enemy of beauty."

- *Are You Confused?* (1971), a 224-page book said to have over 700,000 copies in print, covers his basic philosophy with each of his health "secrets" described at length. To help readers decide what information is "absolutely reliable, objective and scientifically correct," he suggests that "laboratory research and animal tests are only of limited value as compared to the thousands of years of actual human experience with nutrition capable of producing superior health."

- *How to Get Well* (1974), a 304-page book, offers "a complete therapeutic program" for more than 60 health problems, including arthritis, bladder infection, cataracts, diabetes, emphysema, heart disease, impotence, multiple sclerosis, paralysis (from a stroke) and stomach ulcers. For each of these conditions, he recommends "foods, vitamins, food supplements, juices, herbs, fasting, baths and other ancient and modern nutritional and biological modalities." The vitamin guide lists 23 "vitamins" although the scientific community recognizes only 13.

Occasionally he includes some facts. His discussion of heart disease, for example, correctly identifies smoking, high blood pressure, diabetes, lack of exercise, high blood cholesterol and other "risk factors." But for treating heart disease he advises a diet that contains no salt, sugar, coffee, meat, distilled water or refined carbohydrates. He also states: "Do not drink chlorinated water. Chlorine destroys vitamin E in the body, which is absolutely essential for the health of the heart. This is extremely important."

- *The Miracle of Garlic* (1978), a 48-page booklet, claims that garlic can help or correct high blood pressure, heart disease, diabetes, arthritis, cancer, emphysema, digestive disorders, intestinal worms, insomnia, colds, allergies, asthma and many other conditions. Al-

though recent research suggests that garlic may have some health benefits, Airola's claims were premature and go far beyond what is possible.

- *Everywoman's Book* (1979), a 640-page book, covers women's health issues, including childbirth, adjusted to his philosophy. The book begins with a disclaimer that its information is offered "purely for educational or experimental purposes" and that the author and the publisher "assume no responsibility in regard to the effectiveness of, or possible harm incurred from correct or incorrect application of therapeutic approaches described within." Airola's questionable ideas include: 1) headstands might make the breasts firmer; 2) sugar should be completely excluded during pregnancy or lactation; 3) immunizations generally do more harm than good, but if you want your child to get them anyway, administer large daily doses of vitamin C for one to two weeks beforehand; 4) eating lots of salty foods prior to conception will increase the odds of having a boy, while eating calcium-rich foods will increase the odds of having a girl.

- *The Airola Diet and Cookbook* (1981), a 288-page book, contains a weight-loss diet, a "complete vitamin guide," a "complete mineral guide," and over 200 recipes developed and tested by Airola's daughter, Anni Airola Lines, who is a registered dietitian. The diet is based on what he calls "three basic food groups": 1) grains, legumes, beans, seeds and nuts; 2) vegetables; and 3) fruits. Though his advice to consume ^{new} amounts of fresh fruits, vegetables, and whole ~~grains~~ is commendable, Airola's diet is almost devoid of complete protein sources. He makes no attempt to complement vegetable protein sources because he believes raw vegetables, buckwheat, and millet provide complete proteins—which they do not. Like many strict vegetarian diets, his "optimum diet" tends to be low in calories as well. The "vitamin guide" lists 22 vitamins. Although this book is the most conservative of Airola's works, it still displays ignorance of many basic food and nutrition concepts.

- *Hypoglycemia: A Better Approach* (1977), a 192-page book, is Airola's basic three-food-group diet with emphasis on curing "low blood sugar," which he claims affects over 20 million Americans.

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• **Cancer: Causes, Prevention, and Treatment—The Total Approach** (1972), a 48-page booklet, begins: "I want to make it perfectly clear that I do not offer a cure for cancer. I only report how cancer is successfully treated in several of the biological clinics in Europe." In a footnote, he explains that this disclaimer was made "mainly to protect myself against persecution by overzealous government agencies, who, in the name of the public, mercilessly attack anyone who not only dares to advise but even to report on unorthodox cancer therapies."

The booklet gives Airola's personal list of 22 causes of cancer, including animal protein, salt, and heated vegetable oils. His "anti-cancer diet" excludes meat, fowl, eggs, fish and cows' milk, and includes juice fasting, and systematic undereating, which he described as a low-protein diet eaten as several small meals per day. His "anti-cancer supplements" include: up to 150,000 International Units (I.U.) of vitamin A per day (an amount likely to build up to toxic levels); pangamate and laetrile (which he calls vitamins B-15 and B-17 even though they are not vitamins); 5,000 mg of vitamin C; 1,000 I.U. of vitamin E; and digestive enzyme supplements "to help the body better utilize nutrients, particularly proteins." He concludes by advocating laetrile and other "non-toxic unorthodox treatments."

Curiously, Airola's daughter acknowledges that pangamate and laetrile are incorrectly referred to as vitamins and omits them from her own Health Plus

book, *Vitamins and Minerals: The Health Connection* (1985), in which she claims there are 17 vitamins.

• *Worldwide Secrets for Staying Young* (1982), a 208-page book, covers "proven and effective ways to halt and reverse the aging processes and live a long and healthy life." Each of the first 13 chapters covers "health and longevity secrets" from one part of the world. For example: rose-hip tea and whey (Sweden); rye (Finland); fermented foods, mineral water, and juice fasting (Germany); soured milk (Bulgaria); pollen-rich honey, garlic and onions, and buckwheat (Russia); ginseng and gotu kola (China); and skipping breakfast, except for a piece of fruit (Pitcairn Islands). Claiming that "one of the true fountains of youth is optimum nutrition," Airola recommends an "optimum diet" composed mainly of seeds, nut and grains, vegetables, and fruits, supplemented with "special super-foods" and food supplements. He also claims that humans should live to the age of 120 unless they "kill themselves prematurely by violating the basic laws of health and life."

Despite all this, Airola was only 64 when he suffered a fatal stroke.

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BRIEFS

Free report on sugar. *Sugar: Fact and Fiction*, a well written booklet about controversies involving sugars, is available from The Sugar Association, 1511 15th Street, N.W., Washington, DC 20005.

Sugar safety supported. An FDA task force on the health aspects of sugars has concluded that except for tooth decay, no evidence exists that sugars are hazardous to the general public at current consumption levels. Eleven staff members of the FDA Center for Food Safety and Nutrition participated in the project, with some focusing on sugar intake while others abstracted and reviewed the scientific literature. The task force report—152 pages of text with more than 900 references—concluded that sugar consumption does not cause diabetes, high blood pressure, heart disease, gallstones, cancer or behavioral changes in children or adults. Furthermore, sugars do not play a unique role in causing obesity or dietary imbalance. Similar conclusions were reached by the Federation of American Societies for Biology when it reviewed sugar for the FDA ten years ago.

Notable quote. "The key word in quackery is promotion. Quacks quack. Legitimate researchers also work with unproven methods . . . The difference is they do it in a guarded, responsible fashion—they don't promote unproven methods publicly or commercially."—William T. Jarvis, Ph.D., *U.S. News & World Report*, December 8, 1986.

FTC attacks Agricultural Commissioner. Federal Trade Commission Chairman Dan Oliver has initiated a National Consumer Fleece Award to be given annually to "those who use government powers to deprive consumers of the benefits of competition." The first award was given to New York State Agricultural Commissioner Joseph Gerace. According to the January 12th *FTC News Notes*, New York City has the highest milk prices in the United States because the New York Milk Cartel enjoys an "anti-consumer monopoly." Last year, when Farmland Dairies of New Jersey was permitted to sell milk in Staten Island, prices immediately fell. But Commissioner Gerace refused to license Farmland for the rest of the city. A few days after the "award," Gerace left office.

Hospitals marketing frozen dinners. Metropolitan Medical Center of Minneapolis and United Hospital of St. Paul have developed new types of frozen dinners called "Nutritious Cuisine." The dinners, which are targeted to senior citizens, are nutritionally balanced and have reduced levels of fat, sugar and sodium. The hospitals saw a need for such products when a survey revealed that 91% of home health service patients had a special dietary requirement and half had to cook for themselves. Marketing rights have been sold to North Star food company of Minnesota.

Resources for dietitians. Consulting Nutritionists, a Dietetic Practice Group of the American Dietetic Association, has published its 1986-1987 Resource List of 41 practice aids developed by registered dietitians. The list includes such items as videotaped cooking classes for special diets, a hand-held computer for nutritional assessments, and a body image questionnaire to help treat eating disorders. For a free copy, send a stamped (39¢ postage), self-addressed 4"x9 1/2" envelope to Candace Mattson, R.D., 9545 Delphi Road, S.W., Olympia, WA 98502.

Court orders raw milk ban. U.S. District Judge Norma Holloway Johnson has ordered the U.S. Department of Health and Human Services (HHS) to ban interstate shipment of raw (unpasteurized) milk and raw-milk products. The judge ruled that unpasteurized milk is unsafe and that agency officials have been arbitrary and capricious in refusing to ban its sale. The FDA stayed a proposed ban in 1973 and began drafting regulations again in 1982, but stalled until prodded by Public Citizen's Health Research Group (HRG), an organization founded by Ralph Nader. HRG petitioned the agency in April 1984, and together with the American Public Health Association (APHA), filed suit in September 1984 to force a response. After public hearings in October 1984 [See NF 2:1-4 and 2:20], FDA Commissioner Frank Young, M.D., Ph.D., suggested a ban in a memo to HHS Secretary Margaret Heckler. But she rejected this idea and ordered Dr. Young to deny HRG's petition [NF 2:28]. HRG and APHA then sued again [NF 2:62], and the American Academy of Pediatrics filed a supporting brief. Noting that HHS had spent more than 13 years studying the raw milk issue, Judge Johnson concluded, "It is undisputed that all types of raw milk are unsafe for human consumption and pose a significant health risk. The appropriate remedy in this case is, therefore, an order compelling the agency to promulgate a regulation prohibiting interstate sale." She also said that HHS can prohibit intrastate sales if an interstate ban is not effective. The main producer of raw milk in the United States is the Alta-Dena Certified Dairy of City of Industry, California.

Pauling Institute criticized. A fundraising appeal by the Linus Pauling Institute of Science and Medicine was sharply criticized in an article in *The Washington Post*. The appeal, dated October 6, 1985, began, "If you are worried about the spreading of the AIDS epidemic, then I have important news for you. There is growing evidence that vitamin C is effective in the treatment of AIDS . . . That's exactly why the Linus Pauling Institute needs your support today." The letter was signed by G. Richard Hicks, executive vice president, who claimed in an interview that Donald Abrams, M.D., assistant director of the AIDS clinic at San Francisco General Hospital, "has told us that of the AIDS patients he has treated, those who survive the longest are the ones who take large amounts of vitamin C." But Abrams denied making such a remark and said he has not tested vitamin C efficacy in AIDS. Thomas H. Jukes, Ph.D., Professor of Space Sciences at the University of California/Berkeley, said that using fear of AIDS to raise funds for an unproven treatment is "exploiting the public."

Comatose patient allowed to die. Paul Brophy, a 49-year-old former Boston firefighter became the first comatose patient allowed by a state supreme court to have artificial feeding removed while he was still alive. Brophy, who suffered profound brain damage in 1983, had been comatose for three years but could have been maintained indefinitely on life-support systems. His wife won the right to have his feeding disconnected when the Supreme Judicial Court of Massachusetts reversed a lower court decision [see NF 3:7]. Testimony in the case showed that Brophy would not have wanted to be kept alive by artificial means in a hopeless state. The high court ruled that artificial life support could be terminated if it is clear that the patient would not have consented to such treatment. Brophy died eight days after the feeding was stopped.

Force-feeding dispute rages on. Elizabeth Bouvia, a 29-year-old Los Angeles quadriplegic who was fed through a nasogastric tube against her wishes, has sued a county hospital and its ethics committee which recommended the feedings. Ms. Bouvia attracted nationwide attention in 1983 when she petitioned a California court to order her doctors to stop tube-feeding her and give her painkillers so she might die. After the court ruled against her, she transferred to the county hospital where she professed no suicidal thoughts and began eating without the tube. However, her weight dropped considerably and tube-feeding was resumed. She then returned to court and won a ruling that her right to be left alone outweighed the hospital's desire to see her gain weight and remain healthy. Now in another hospital, she is eating voluntarily but has lost more weight.

Sulfite labeling for alcoholic beverages. The Bureau of Alcohol, Tobacco and Firearms has issued regulations requiring labeling of alcoholic beverages that contain sulfur dioxide levels of 10 parts per million or more. By January 8, 1988, a sulfite declaration must appear in the labeling of such beverages before they leave domestic bottling plants or the custody of U.S. Customs.

Cash for losing weight. U.S. Healthcare, a Pennsylvania-based Health Maintenance Organization (HMO), is offering to reward members who lose weight through its Healthy Eating Program. Members can enroll by paying \$35 for a program guidebook and being assigned a weight goal by their primary HMO physician. Participants are awarded \$25 for reaching goal weight, \$50 for maintaining it six months, and \$100 for maintaining it a year. They can also earn a sweatsuit, a bathroom scale, exercise equipment and other incentives.

Magazine survey. The American Council on Science and Health has again rated nutrition advice given in popular magazines. The survey covered articles published during the past 2½ years in 25 magazines. A 3-person panel did the scoring, awarding points for both accuracy and readability. Five magazines were rated excellent: *Consumer Reports* (95% of possible points), *Better Homes & Gardens* (94%), *Changing Times* (93%), *Consumers Digest* (86%), and *Parents* (86%). Fourteen were rated generally reliable: *Glamour* (85%), *Good Housekeeping* (85%), *Essence* (82%), *McCall's* (82%), *Self* (82%), *Vogue* (82%), *Family Circle* (81%), *Modern Maturity* (81%), *American Health* (79%), *Seventeen* (79%), *Health* (78%), *Reader's Digest* (76%), *Woman's Day* (76%), and *Gentlemen's Quarterly* (73%). Three were rated inconsistent: *Mademoiselle* (70%), *Redbook* (69%), and *Prevention* (64%). Three were judged unreliable: *Cosmopolitan* (62%), *Ladies' Home Journal* (62%), and *Harper's Bazaar* (42%). The survey report is available for \$2 from ACSH, 47 Maple St., Summit, NJ 07901.

GENERAL NUTRITION PLEADS GUILTY

In 1984, General Nutrition, Inc., three of its officers and two of its store managers were charged with criminal violations of the Federal Food, Drug, and Cosmetic Act. The indictment accused them of conspiring to promote and sell an evening primrose oil product (Gammaprim) with claims that it is effective against high blood pressure, arthritis, multiple sclerosis and other diseases [see NF 1-20]. Gammaprim had been promoted with newspaper and magazine articles, radio talk show discussions, flyers, and claims made by salespersons to customers. Although the company termed the product a "food supplement," the promotional claims made it a drug that could not be legally marketed without FDA approval, which it lacked. The indictment also contained six counts of misbranding related to Gammaprim purchases made by undercover FDA investigators at GNC stores in western New York State.

In motions to stop the prosecution, the defendants had claimed that 1) their right to free speech was being violated; 2) the prosecution was unfair because many other companies making health claims in advertising have not been prosecuted; 3) Gammaprim should not be considered a drug because it is not inherently toxic; and 4) the laws under which they are being prosecuted are too vague. In May 1986 these motions were dismissed by a federal judge who noted that the defendants were aware, or should have been aware, that they were breaking the law.

In October, the company pleaded guilty to four counts of misbranding a drug and agreed to pay \$10,000 to the government as reimbursement for costs of prosecution. Its former president, Gary Daum, and a current vice president, David E. Walsh, each pleaded guilty to one of the misbranding counts. The remaining counts of the indictment and all charges against other employees were dismissed. In December, Daum was sentenced to pay a \$1,000 fine.

General Nutrition, Inc., with more than 1,000 outlets, is the largest chain of health food stores in the United States and Canada. Settlement of this case climaxed a series of federal enforcement actions that began several years ago. In 1985, the company signed consent agreements with the U.S. Postal Service to stop making unsubstantiated claims for 14 of its products sold by mail [NF 2:7 and 2:47]. In 1986, an FTC administrative law judge ruled that ads for another product were deliberately misleading and concluded that "General Nutrition's unconscionable, false and misleading advertising found in this case is not an isolated incident but part of a continuing pattern" [NF 3:38].

Although these enforcement actions have involved small penalties, they have had a dramatic effect on General Nutrition's marketing practices. During the past six months, it has not used flamboyant ads or made illegal therapeutic claims for any products.

SUGAR SUBSTITUTE IN FDA'S LIMBO

James A. Lowell, Ph.D.

Last summer Nichole Walker, a former Cayone del Oro math teacher and mother of four, won a red ribbon at the Pima County (Arizona) Fair for her recipe for sugarless whole-wheat orange-pecan muffins. While winning a ribbon is not so unusual, there was something different about her recipe: she used the finely ground leaves of an herb called Stevia. Since the word got out about Walker's recipe, the stores that carry Stevia haven't been able to get enough of the plant to fill the demand.

Stevia sells for 80¢ to \$3 an ounce. There is a problem with its sale, however. According to Blondell Anderson of the FDA's division of food and color additives, Stevia is illegal to sell because it is not on the "GRAS" list of foods or food additives — those "generally recognized as safe." But it is available at health food stores and the FDA has made no attempt to remove it.

Stevia rebaudiana is the botanical name for this member of the sunflower family which originated in Paraguay and Brazil. There, where it is widely used as a sweetener, it is known by various names such as Caa-hee-hee, Caa-enhem and Azuca-caa, all of which mean "sweet herb."

Although Stevia lacks FDA approval for sale in the United States, it is commonly used in other parts of the world. The plant parts themselves and various compounds derived from them are also approved as food additives in Japan, where they have been used as low-calorie sweetening agents and sugar substitutes since the mid-1970s. In fact, 11 Japanese firms have formed a consortium known as the Stevia Konwakai to study the effects and uses of the sweetener.

Dozens of chemical compounds are found in the leaves and stems of Stevia. The major ones responsible for the sweet taste are known as steviosides and rebaudiosides. These ingredients make Stevia about 300 times sweeter than sugar, and make the number of calories per gram insignificant. It is so sweet, says Walker, that she only needs half a teaspoon to sweeten 1½ dozen of her muffins.

Pure stevioside has a very bitter and persistent aftertaste, but when it is diluted it is comparable to products such as cyclamates and aspartame. Unlike aspartame, it doesn't break down under high temperatures, so it can be used for baking.

Over the years, questions have been raised about Stevia's safety. A report in the August 1960 *Endocrinology*, for example, indicated that the action of male sex hormones might be blocked by large intakes of the

herb. This could explain the effects discussed by other researchers in an article in *Science* [Nov. 29, 1968, p. 1007] which described how the Paraguayan Matto Grosso Indians used Stevia as a contraceptive. Moreover, laboratory experiments on rats indicated that an extract of its leaves and stems added to their water might have an anti-fertility effect.

Additional concerns were raised by two pharmaceutical researchers at the University of Illinois in Chicago who found that some of the compounds formed from the digestion and breakdown of the sweetener could cause genetic mutations in bacteria. Since other chemicals which cause similar effects in bacteria may also cause mutations and cancer in humans, they recommend that further tests be carried out to be sure that Stevia is safe. Other experiments indicated that Stevia might act as a respiratory poison, although no toxic effects were noted when the sweetener was given to laboratory animals over extended periods of time.

However, since the 1960s, numerous follow-up studies have failed to confirm that Stevia causes any harm or has any contraceptive effect. And in Japan, where it has been used for years, no harm has been reported in humans who used either the herb or sweeteners derived from it.

Walker said the only trouble she had with Stevia was that it turned her tapioca green.

Dr. Lowell is a professor of life sciences at Pima Community College and is president of the Arizona Council Against Health Fraud.

QUESTION BOX

Q. What is durum wheat?

A. It is one of the three wheat species that are commercially important. The others are bread wheat and club wheat (used mainly for biscuits and pastries). The two varieties of durum wheat—red and white—are hard spring wheats grown primarily in North Dakota. The flour of durum wheat (called "semolina") is used to make pasta products. Semolina, when mixed with water, yields a very elastic paste that can be extruded to create the many different pasta shapes that we have come to enjoy.

HERBALIFE AGREES TO PAY \$850,000 PENALTY

Herbalife International, Inc., and its president Mark Hughes, have agreed to pay \$850,000 to settle charges by the California Attorney General that the company made false medical claims and engaged in an illegal pyramid-style marketing scheme. Herbalife has been selling its products through a multilevel marketing program in which the amount of money received by its distributors depended upon the amounts purchased by them and by those whom they recruit as distributors.

The Attorney General's suit, filed in 1985, cited the following questionable claims made for Herbalife products:

- Slim and Trim Formulas comprise an effective weight loss program which can produce a typical weight loss of 10-29 excess pounds a month.

- Cell-U-Loss can attack "cellulite," eliminate inches, suppress appetite, improve circulation, and help many other conditions.

- Herbal-Aloe can aid digestion, "heal" and "cleanse the system."

- N.R.G. can increase energy, increase mental alertness, and provide a "nutritional lift." (The fact that caffeine is one of its active ingredients was not disclosed.)

- Lifeline aids the cardiovascular system.

- Schizandra Plus can combat damage that leads to premature aging.

- Tang Kuei is effective against hot flashes and can help the regularity of the menstrual system and relieve menstrual disorders.

- Flora-Fiber "scrubs and cleanses" the intestine with fiber and prevents disease.

- K-8 stops "induced depression" and "elevates your mood so you can handle stress."

The suit also charged:

- Early editions of the *Herbalife Official Career Handbook* made illegal claims that various herbal ingredients were effective against more than 70 diseases and conditions. Although most of these claims were deleted in subsequent editions of the handbook, the company had not replaced the original pages sent to distributors with the revised pages or asked these distributors to destroy them.

- Similar testimonial claims were made in com-

pany broadcasts over cable television.

- To attract new distributors, the TV programs and company magazine contained stories of individuals who made large amounts of money by building large networks of Herbalife distributors. These representations are misleading because there is no reasonable basis to assert that most people who become distributors will earn large sums.

- Although the company offered a "full warranty" on all of its products, customers who tried to invoke the warranty were often thwarted in their efforts by the defendants.

The court order settling the case, dated October 14, 1986, forbids representations without reasonable basis that:

- Herbalife products contain herbs that can curb appetite, burn off calories, or cleanse the system.

- Product users can lose weight without reducing caloric intake.

- Cell-U-Loss can eliminate "cellulite."

- Other products or their ingredients are effective as specified in the Attorney General's complaint.

The court ordered strict limits on testimonials and said that the caffeine content of N.R.G. should be disclosed in the career book and on the product's label. It also ordered Herbalife to change its marketing program so that distributors can profit only from retail sales and are discouraged from maintaining (and possibly becoming stuck with) large product inventories in order to qualify for bonuses.

The \$850,000 penalty—payable over a five-year period—was assessed to reimburse the state for costs, attorneys' fees, expenses of investigation, and other expenses. Mark Hughes was ordered to post a \$400,000 security deposit to cover possible default by the company.

On December 3, 1986, *The Wall Street Journal* reported that Herbalife merged with a Utah-based shell corporation and plans to raise \$14 million with a public stock offering. The company netted \$7.6 million on sales of \$115.7 million during the first half of 1986 and \$12.4 million on \$462.9 million of sales in 1985. (For additional information about Herbalife, see *NF* 2:65-68 and 2:73-77.)

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THE RISE OF THE HUMBLE POTATO

Howard D. Lerner

Foods have long been victims of superstition and ignorance. Because an evil witch in a certain fairy tale decided to use "poison mushrooms" as her brew base, many otherwise adventurous eaters balk when they see a dish featuring mushrooms. Even the familiar peanut was snubbed until the turn of the century when George Washington Carver demonstrated its versatility by inventing peanut butter.

The potato, like the peanut and the mushroom, has also had public relations problems. Scottish clergymen of the 18th century preached against eating potatoes because they're not mentioned in the Bible. Even modern-day children are occasionally told that their ears will sprout spuds if not cleaned regularly.

The potato (*Solanum tuberosum*) had been cultivated by the Incas for thousands of years before Francisco Pizarro and his Spanish Conquistadores encountered it during their invasion of Peru. Europe did not, however, share Pizarro's enthusiasm over the spud. As late as 1774, potatoes were refused in Germany. Only after King Louis XVI and Marie Antoinette of France declared them fashionable in 1785 did the potato receive its due. Today it ranks fourth in the world in importance behind wheat, rice and corn as a staple crop.

The potato, heartiest of vegetables, survives in the torrid deserts of Africa and even under the frozen tundra of Alaska. Its resistance to harsh conditions so appealed to Irish farmers that by 1845, the "prat" was Ireland's sole crop. When the Late Potato Blight fungus hit Ireland in 1845, the resulting "Potato Famine" killed one million Irish people over a six-year period. Another million escaped the famine by sailing to America. As a result, the Irish are now one of the largest ethnic groups in America.

The potato may again be on the verge of changing world history—this time by feeding millions of starving people. Scientists at the International Potato Center in Lima, Peru, are developing strains of potatoes more resistant to pests. Hearty hybrids with meshed skins, impervious to infestation, are now available.

Unlike corn or wheat, the potato does not produce seeds suitable for planting. To obtain a good yield from a thousand acres of land, a farmer must plant a thousand tons of mature potatoes. An equal harvest of corn requires only a hundred pounds of seed. Scientists have succeeded in producing "potato seeds" from the tiny berries that grow on the potato plant, a method that can save poor countries millions of dollars in equipment costs and storage. Before long, it is hoped, potatoes will supply the world with an abundant food source.

Virtually all the world loves potatoes, and the United States is no exception. According to The Snack Food Association, potato chips alone grossed more than \$3 billion for manufacturers last year. Yet the big potato

money-maker is the "French fry." Once served by Thomas Jefferson in the White House, this European snack was popularized here by the J.R. Simplot Company of Boise, Idaho. Simplot began producing French fries after World War II. Today, the company processes 100,000 raw potatoes every hour of the day and night. McDonald's claims the largest portion of them in frozen form. Fast food restaurants sell most of the five billion pounds of French fries produced each year in the U.S.

Our taste for the potato, however, is not limited to French fries and potato chips. Today, the versatility of the potato is being hailed. Baked potatoes are still popular, and potato skins, long thought to be inedible leftovers, are now rivaling hamburgers on the tables of many American eateries. Even restaurants that solely feature potatoes are popping up—and staying.

"The potato is the perfect food," says Kevin Braun, manager of Potatoes Etc. "It's a meal contained in itself." Braun's small restaurant boasts 19 varieties of stuffed potatoes, with hot Cheddar and bacon the most popular. For something with a bit more pizzazz, you can try a potato stuffed with sirloin tips in wine sauce. Or smothered with seafood Newburg.

Many people cling to a misconception that potatoes are undesirable because they're high in starch (a complex carbohydrate). But complex carbohydrates are considered "good guys" by today's nutritionists. Moreover, an average potato contains enough vitamin C to supply an adult with half the Recommended Dietary Allowance. Although several other foods are richer in vitamin C, the potato is actually the world's leading food source of this vitamin because of its widespread use.

"A man could live for months on five pounds of potatoes and a quart of milk daily," says Mary Ellen Beindorff, a nutritionist at Barnes Hospital in St. Louis. She sees a wide range of patients every day, from compulsive overeaters to those suffering from malnutrition. "I recommend that people eat potatoes in every case," she says.

Potatoes are smart eating for other reasons too. For the dieter, they are a filling, low-calorie choice. A 12-ounce potato has only 90 calories. What you put on it, though, can pile on more.

The potato is 99.9% fat-free, and will remain so if baked rather than fried. Topping it with low-calorie margarine instead of butter will constrain calories without altering the flavor too much. Or try a spoonful of stewed tomatoes and some grated Parmesan cheese instead of the usual sour cream. They're lower in calories and might even taste better.

Mr. Lerner, a senior majoring in English at Washington University in St. Louis, has been involved in Oxfam and other humanitarian outreach programs.

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NEW GROUPS PRESSING FOR "HEALTH FREEDOM"

Stephen Barrett, M.D.
Grace P. Monaco, J.D.

Promoters of unscientific methods have organized three more groups to promote their methods and end government regulation of health care practitioners. The Health Alternatives Legal Foundation, led by attorneys, is working primarily through the courts. The American Quack Association is a network of "holistic" practitioners. The Coalition for Alternatives in Nutrition and Health Care is organized for grass-roots lobbying. All three use the words "alternative," and "freedom" to suit their own purposes.

The Health Alternatives Legal Foundation (HALF), 105 N. Foster St., Dothan, AL 36303, is described in its literature as a "nonprofit public interest law center." It was formed in 1986 to defend "alternative" health care practitioners and to file suits challenging medical practice laws.

HALF's newsletter, *Alternatives*, describes the group's philosophy and reports news (mostly legal troubles) involving promoters of unproven methods. According to the newsletter, "Powerful elements of organized allopathic medicine, led by the American Medical Association, have been waging an expensive, well-orchestrated political and economic campaign designed to stifle competition from alternative health care providers. This campaign has been advanced by advocates of the medical establishment who, for financial or philosophical reasons, seek . . . to eliminate the ability of alternative health care providers to practice in the American marketplace. Maverick doctors, chiropractors, osteopaths, homeopaths, acupuncturists, naturopaths, podiatrists, nutritionists, midwives and eclectic physicians have felt the full brunt of this organized attack."

HALF's brochure states that "alternative health care practitioners deserve proper recognition by state legislators, regulation by review boards of their own peers, and reimbursement for services from health in-

surance companies. Our attorneys defend individual health practitioners against charges of operating outside the scope of standard medical practice."

The chairman of HALF's board of directors is Attorney William H. Moore of Savannah, Georgia. In 1984 Moore attempted to intervene in a laetrile case with an action designed to stop virtually all interference with "unorthodox" methods, but he withdrew when the plaintiffs objected [see NF 2:89-90].

HALF's executive director is attorney Michael S. Evers, of Dothan, Alabama, whose adoptive father, H. Ray Evers, M.D., recently had his medical license revoked by the Alabama Medical License Commission. HALF's newsletter states that the grounds included: 1) engaging in the practice of medicine in such a manner as to endanger the health of the patient; 2) using untruthful or deceptive or improbable statements concerning the effects or results of his proposed treatment; 3) demonstrating unprofessional conduct in the treatment; and 4) "gross malpractice." The case involved a breast cancer patient Dr. Evers had treated with an herbal salve. (A circuit judge has blocked the revocation while Evers appeals to state courts.)

The American Quack Association (AQA), P.O. Box 550, Oviedo, FL 33765, has about 300 members, most of whom are health professionals. Founded in 1985, its main purposes appear to be providing emotional support to its members, poking fun at their critics, and stimulating positive public feelings toward unorthodox practitioners. Noting that "Discrimination, legal investigation, persecution, prosecution, and even imprisonment have variously been the fate of those few physicians and others who have publicly counseled alternative means of health care," AQA's "Articles of Health Freedom" demand that "No law or regulations shall be made prohibiting the right of people to freely assemble for healing of any type." They also oppose "any

penalty whatsoever against anyone employing any form of treatment for cancer or any other disease for him or herself or others, except in cases of fraud, deception or the use of force."

AQA's vice president is Roy Kupsinel, M.D., a "holistic" practitioner in Oviedo, Florida. Kupsinel publishes *Health Consciousness*, a bimonthly magazine which contains articles on cosmic philosophy, conservative causes, and the "persecution" of unorthodox practitioners. It also contains ads for unproven products and services. Its last few pages are printed upside down as the *Journal of the American Quack Association*, edited by AQA president Jonathan V. Wright, M.D., of Kent, Washington. AQA's logo depicts a stressed but smiling duck flying through the "Q" of AQA. Dues are \$6.00 a year.

The Coalition for Alternatives in Nutrition and Healthcare (CANAH), P.O. Box B-12, Richlandtown, PA 18955, is a nonprofit corporation established in 1984 "to educate the public in nutrition and alternative healthcare . . . through lobbying, public awareness presentations, and timely presentations." CANAH's founder, president and "legislative advocate" is Catherine J. Frompovitch, Ph.D., who practices "nutritional consultation" in Richlandtown, operates C.J. Frompovich Publications, and edits CANAH's *Health Rights Advocate*, a comprehensive quarterly report on legislative developments. (Her "Ph.D." is from Columbia Pacific University, an unaccredited correspondence school.)

At one point last year CANAH had about 400 members, but no current figure has been publicly released. No officer other than Ms. Frompovich has been identified in the group's publications, but the 28-person advisory board listed on its letterhead includes Moore, Kupsinel, and:

- Jeffrey S. Bland, Ph.D., a biochemistry professor who promotes food supplements through publications and frequently lectures at health food industry conventions [see NF 33-38].
- Dan Clark, M.D., a Florida physician whose license was revoked for unprofessional practice.
- Richard Crews, M.D., President of Columbia Pacific University.
- Alan R. Gaby, M.D., a Maryland physician/author who practices "nutritional therapy"
- Bruce W. Halstead, M.D., a California physician who in 1985 was convicted of cancer fraud and grand theft for selling herbal tea to cancer patients for \$125 to \$150 per quart [NF 1:5]. He has been fined \$10,000 and sentenced to four years in prison but is appealing his conviction.
- Conrad G. Maulfair, Jr., D.O., a Pennsylvania osteopath who practices chelation therapy.
- Robert Mendelsohn, M.D., former president of the National Health Federation, who attacks established medical and public health procedures in lectures and

publications.

- Earl Mindell, R.Ph., Ph.D., author of *Earl Mindell's Vitamin Bible* and numerous other publications promoting questionable use of food supplements [see NF 3:46-47]. His "Ph.D." is from the University of Beverly Hills, an unaccredited school.

- Richard Passwater, Ph.D., author of numerous publications promoting questionable uses of food supplements. His "Ph.D." is from Bernadean University, an unaccredited diploma mill that was not authorized to issue any degrees at the time Passwater obtained his.

- Linus Pauling, Ph.D., who seems willing to ally himself with virtually anyone who supports his questionable ideas about megavitamins [see NF 2:33-7].

- Carl Pfeiffer, M.D., Ph.D., director of the Brain Bio Center, Princeton, New Jersey, which offers "nutritional" treatment for "the schizophrenias and biochemical deficiencies associated with aging, alcoholism, allergies, arthritis, autism, epilepsy, hypertension, hypoglycemia, migraine, depression, learning disability, retardation, mental and metabolic disorders, skin problems, and hyperactivity."

- Barbara Reed, Ph.D., a former probation officer who is now devoted to promoting her theory that criminal behavior can be attributed to poor diet and corrected by dietary reform. Her "Ph.D." is from Donsbach University, an unaccredited correspondence school.

- Michael B. Schachter, M.D., a New York psychiatrist who has been prominently involved in using laetrile and megavitamins to treat cancer.

- Lendon Smith, M.D., a prominent author and pediatrician who was placed on probation by his state board of medical examiners from 1973 to 1981 for "inappropriate prescribing of drugs" to heroin addicts.

CANAH's activities have included support for an unproven cancer treatment (immunoaugmentative therapy) and opposition to food irradiation, water fluoridation, licensing of nutritionists, and other antiquackery legislation. Regular membership costs \$10 per year. News articles and invitations to join have appeared in many health food industry publications. CANAH wants individuals denied access to or insurance coverage for "alternative healthcare" to file antitrust suits and other legal actions to "protect their rights."

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CANAH's main goal is enactment of a "Healthcare Rights Amendment," which has two basic provisions:

1. Congress shall make no law which restricts any individual's right to choose and to practice the type of healthcare they shall elect for themselves or their children for the prevention or treatment of any disease, injury, illness or ailment of the body or the mind.

2. Congress shall have the power to enforce, by appropriate legislation, the provisions of this article.

A flyer promoting the amendment claims that "vested interest groups, certain individuals and trade associations, the American Medical Association in particular, have launched legal procedures against medical doctors who employ in their practice such modalities as natural nutrition, chelation therapy, vitamin/mineral supplementation and other means commonly referred to as alternative healthcare modalities which may not be in agreement with orthodox medicine. Practitioner and patient alike have been brought up before the bars of justice and peer review with heretofore unknown medical inquisition-like techniques. WE THE PEOPLE believe this is unconstitutional, and we therefore propose this amendment." Ms. Frompovich hopes to deliver at least 100,000 signatures supporting the amendment to "proper governmental officials" during 1987, which is the 200th anniversary of the Constitution.

CANAH's logo depicts a hummingbird because it has "the freedom of choice and can go from flower to flower to satisfy its needs." The group's brochure quotes the famed philosopher/ethicist John Stuart Mill (1806-1873) as though he would support its aims: "The only freedom which deserves the name, is that of pursuing our own good in our own way, so long as we do not attempt to deprive others of theirs, or impede their efforts to obtain it. Each is the proper guardian of his own health, whether bodily, or mental or spiritual. Mankind are great gainers by suffering each other to live as seems good to themselves, than by compelling each to

live as seems good to the rest." But Mill recognized that where "there is a definite damage, or definite risk of damage, either to an individual or to the public, the case is taken out of the province of liberty and placed in that of morality or law."

Under current laws, our federal and state government can set licensing standards for health practitioners, institute public health measures, and outlaw remedies that are dangerous or ineffective. In *Rutherford v. United States*, in which a patient sued for access to laetrile, the U.S. Supreme Court ruled that "selection of a particular treatment, or at least a medication, is within the area of governmental interest in protecting public health." CANAH wants all restrictions removed. Under its amendment:

- Government agencies could no longer remove unproven or dangerous remedies from the marketplace so long as a single consumer objects.

- Anyone—licensed or not—could engage in any practice labeled "health care" so long as a single consumer wishes it to continue.

- Courts could no longer protect children from parents who deny them access to effective health care, even if such neglect will result in their death.

- Dangerously psychotic individuals could not be compelled to undergo treatment if anyone objected.

- Compulsory immunization would end.

- Community water fluoridation would end if a single person in the community objects.

Although promoted in the name of "freedom," CANAH's health care rights amendment would end protection of consumers from quackery.

Dr. Barrett, a psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. Mrs. Monaco, a partner of White, Fine and Verville, of Washington, D.C., specializes in health law as it applies to unproven methods of medical management.

BRIEFS

Microwave injuries. *The New England Journal of Medicine* has reported a case of a 10-year-old boy whose eyelids and cornea were burned by steam escaping from a bag of microwave-popped popcorn [315:1359, 1986]. The product's packaging warned, "Handle the bag carefully—It's hot!" But the injury was caused by a rush of steam released when the bag was opened. In 1984, serious burns of the throat were reported in a baby who drank infant formula that had been heated in a microwave oven. [*Journal of Pediatrics* 105:864-7].

Fast food trends. According to the Food Institute, supermarkets and convenience store operators see ready-to-eat foods as a way to capture consumer expenditures that would otherwise go for eating out. Supermarkets, with their advantage of high-volume, heavy-traffic locations, are adding more service delis and hot foods "to go" and are experimenting with everything from breakfast bars to sushi. Since more than half of American homes now have a microwave oven, microwavable products will also be heavily promoted.

Notable quote. "Toxic terrorists and doomsayers who have brought us so much bad news about the quality of our environment, food and life are under closer scrutiny. While there remains a role for the federal government in the promotion of public health . . . much of our fate is in our own hands."—Elizabeth M. Whelan, Sc.D., Executive Director, American Council on Science & Health.

Gastric balloon warning. The manufacturer of the Garren-Edwards Gastric Bubble has warned physicians to limit its use because one patient has died and 80 others have developed serious complications such as blockage of the intestine and ulcers and perforation of the stomach. According to *American Medical News*, 17,000 patients have used the device since it received FDA approval in 1985. It is inserted into the stomach through the mouth and inflated as a temporary measure to curb appetite. In a letter to 2,000 gastroenterologists who were trained to use the device, the company recommended it only as a last resort for patients with life-threatening obesity for whom other treatments have not worked. The letter also warned that if the bubble suddenly deflates (as has happened during the first three months in 2% of patients), surgery may be needed and that delay in removing the bubble could cause death.

Dangerous weight-reduction drug. In March 1986, Nicholas Bachynsky, M.D., who operates a chain of "Physicians Clinics" in Texas and neighboring states, was found guilty of violating the Texas Food, Drug, and Cosmetic Act and ordered to pay \$86,000 in fines and attorney's costs. Action was brought by the Texas Attorney General because Bachynsky was prescribing 2-4-dinitrophenol, a highly toxic drug he dispensed under the name Mictal. The presiding judge also enjoined further use of dinitrophenol without FDA approval. When Bachynsky persisted, he was charged with violating the injunction and fined \$100,000 by the judge. Although dinitrophenol can cause weight loss by speeding up metabolism, the FDA banned it during the 1930s because it also causes severe skin reactions, jaundice, cataracts, disturbances of smell and taste, and agranulocytosis, a potentially fatal disorder in which production of blood cells is impaired. Although Bachynsky was aware of these problems, he claimed the drug was safe and "forces your metabolism to burn thousands more calories." According to an article in the February 1987 *FDA Consumer*, some 14,000 people were treated at Bachynsky's clinics at a cost of approximately \$1,300.

Natural Foods Month? During the past ten years, the health food industry has promoted April as "Natural Foods Month." But according to *Health Foods Business*, it did not spark enough media and public attention to catch on. "In fact," the magazine's editor wrote recently, "were April to pass without anyone making note of 'Natural Foods Month,' it's probably safe—and sad—to say virtually no one would notice." In some years, the Natural Nutritional Foods Association distributed public relations materials and had notables such as Gloria Swanson, Carol Burnett, Gayelord Hauser and Steve Garvey serve as honorary chairpersons. But this year, individual businesses are on their own.

FDA criticized. Lack of FDA enforcement against quackery was sharply criticized in the December 8, 1986 *U.S. News & World Report*. Noting how quackery is rampant, the article revealed that "internal FDA documents show that the agency's policy is to take no action at all against products that are worthless but not dangerous."

Vitamin C and mortality. A 10-year study of 3,119 adult Californians has found no relationship between vitamin C intake and death from cancer, heart disease or other diseases [*American Journal of Public Health* 76:1124-1130, 1986]. In 1973 or 1974, each participant completed a detailed 28-page questionnaire about personal habits, health care patterns, vitamin supplement usage, and other characteristics. Vitamin C consumption was estimated from reported intakes of orange, grapefruit and tomato juice, other fruits and vegetables, and vitamin C pills. Subsequent mortality was determined by checking California death and motor vehicle bureau records. Individuals who smoked or had certain other bad health habits had higher death rates than those with better health habits. But no difference was found between individuals with daily vitamin C intakes under 250 mg (few of whom had been taking supplements) and those who consumed 250 mg or more (almost all of whom had been taking supplements). Reprints of the article can be obtained from James E. Enstrom, Ph.D., School of Public Health, University of California, Los Angeles, CA 90024.

COMING SOON
The Rise and Fall of
United Sciences of America

Cholesterol extraction under study. According to an article in *American Medical News*, food scientists have been able to remove up to 80% of the cholesterol from butter, lard, beef tallow and egg yolks while retaining nutrients, flavor and consistency. The process, called supercritical fluid extraction, is being refined at the University of Wisconsin and the Phasex Corporation of Lawrence, Massachusetts, under a grant from the Wisconsin Milk Marketing Board. The researchers hope to remove additional cholesterol and reduce costs so that commercial use becomes practical within the next year. They also are experimenting with meat, ice cream, cheese and other high-cholesterol foods.

Diet drugs banned at border. In the wake of four deaths, the FDA has asked the U.S. Customs Service to halt importation from Mexico of Redotex, Ponderex and Moduretic, three drugs dispensed at border diet clinics. Before the ban, American citizens who could prove that a physician had prescribed the drugs were allowed to keep them. Now the Customs Service will seize them.

Cholesterol labeling proposal. The FDA has proposed standards for the terms "cholesterol free," "low cholesterol," and "cholesterol reduced" on food labels. When these are used, labels would also have to report the amount of cholesterol and fatty acids (saturated vs. unsaturated) per serving. These standards are intended to help the National Heart, Lung and Blood Institute's National Cholesterol Education Program to help prevent heart disease by lowering blood cholesterol levels. The information can also help people follow the American Heart Association's "Healthy Heart" guidelines for reducing dietary cholesterol and saturated fats. Under the proposal, "cholesterol free" would mean less than 2 mg per serving, "low cholesterol" would mean less than 20 mg per serving, and "cholesterol reduced" would mean processed to lower cholesterol content by 75% or more. Where reductions are significant but less than 75%, labels could make a comparison statement. The proposal has been criticized because it does not require listing the percentages of fats, which would be easier for consumers to interpret than the amounts. The Center for Science in the Public Interest (CSPI) has also pointed out that foods low in cholesterol but high in saturated fat could be marketed with "low-cholesterol" featured on their front label while the undesirable fat content appears in small print on the rear label. CSPI has asked the FDA to define "low in saturated fats" to help consumers moderate their fat intake.

Carbonated milk. Dairy Research Incorporated (DRINC), of Elk Grove Village, Illinois, has developed a way to expand the market for dairy foods: carbonated milk. The unflavored form, which tastes similar to club soda and is nutritionally equivalent to skim milk, contains 302 mg of calcium and 86 calories per 8-ounce serving. Such flavors as strawberry, peach, chocolate, root beer and pina colada are also being developed. Mass production of carbonated milk will take another year or two. Researchers believe that if it captures 6-8% of the soft drink market in the United States, it might eliminate the milk surplus, which was 13 billion pounds in 1985.

Few results from milk carton photos. The Associated Press has reported that the millions of milk cartons with pictures of missing children have helped locate only six children.

Free diabetes treatment. Diabetics who need insulin have been invited to volunteer for a 6-year program of intensive treatment designed to test whether strict control of blood sugar levels can prevent or reverse long-term complications of diabetes. The program will involve severe dietary limitations, insulin injections three times daily (or use of an insulin pump), and considerable attention to exercise. Participants will receive free insulin and supplies, 24-hour phone counseling, and state-of-the-art monitoring and treatment of early complications. Candidates must be between the ages of 13 and 39, have had insulin-dependent diabetes for 1-15 years without serious complication, and agree to extensive recordkeeping. Interested persons can call 1-800-522-3228 for a preliminary screening.

Chiropractors attack cytotoxic testing. The American Chiropractic Association (ACA) has ratified a well written position paper by its Council on Nutrition which concluded that cytotoxic testing "may result in a high number of false positive findings" and "should not be employed in the evaluation of patients suspected of having adverse reactions to foods." In this test, a patient's white blood cells are placed on slides containing dried food extracts and examined under a microscope [see NF 1:17-19]. Since many chiropractors engage in unscientific nutrition practices, the ACA's action represents a major step forward. The ACA Council on Nutrition hopes to develop position papers on many methods of diagnosis and treatment involving nutrition.

THE "SECRET" OF CHEESEMAKING

Manfred Kroger, Ph.D.

Charles deGaulle once said, "How can you govern a country that has 246 kinds of cheese?" This was undoubtedly a wild guess, but France probably does manufacture more than 200 varieties. Worldwide and historically, the number is somewhere between 600 and 800. But many variously named cheeses differ only in minor attributes. Basically, there are only two types of cheese: those made with the enzyme rennet, and those made with bacteria-produced acid. Hard cheeses, like Cheddar and Swiss, are examples of the first, cottage cheese and cream cheese of the latter. Most varieties are rennet-type cheeses because these last longer and may be ripened for weeks or months in many different ways. Most acid-type cheeses are consumed fresh without ripening.

Cheeses can also be categorized as "processed" or "natural." Process (or processed) cheeses, cheese foods and cheese spreads are relative newcomers whose manufacture from "natural" cheeses requires melting down, blending and emulsification into highly standardized products. As a result, such cheeses are uniform throughout in taste, texture and appearance. All other cheeses are called "natural cheeses."

Cheese has been around since before the "invention" of agriculture. When nomadic people, probably around 10,000 years ago, kept milk in pouches made from animal stomachs or when they allowed milk to go sour, they observed that curd and whey were produced, that the whey was a nourishing drink, and that the curd lent itself to many food uses. It could even be stored for prolonged periods during which it changed in flavor and texture into another edible product. People must have valued this outcome because they continued making and eating this cured curd which became cheese as we know it.

Cheesemaking is simply the deliberate conversion of most of the milk's protein (the casein), fat, mineral salts and other nutrients into solid curd. Whey

is the liquid by-product and contains all the milk's carbohydrate (lactose or milk sugar), about 20% of its protein (the whey proteins), traces of the fat, and some of the nutrients. Strictly speaking, cheese is simply concentrated milk, and cheesemaking is a form of food preservation.

The key difference between the two basic types of cheese is the method of curd formation. When casein is exposed to acid it will curdle. To the food scientist, such curd is coagulated casein precipitate. To the consumer, it's something like cottage cheese. The acid used in the manufacture of this type of cheese is not added but is lactic acid developed from the milk's lactose by bacterial action. The bacteria are added at the beginning of the cheesemaking procedure in the form of a "starter culture." This can be frozen, concentrated culture obtained from a commercial supplier or simply a batch of cultured buttermilk.

Making hard cheese is another matter. The main added ingredient here is rennet, an enzyme prepared from the stomach lining of calves. When rennet is added to milk, the milk's casein is chemically disassembled to a minor extent, so much so that a gel is formed. This rennet-coagulated curd is called calcium paracaseinate. In cheesemaking, it is cut into cubes and forced by gentle heating to expel whey until hard curd particles are obtained. These are pressed into particular cheese shapes and moved into a ripening room. What is called "green cheese" at the beginning will eventually cure, age or ripen into one of the many cheeses found in the cheese store.

Cheesemaking isn't really so simple as described here. It is an art, subject to the maker's decisions and interventions, as well as a science that requires adherence to strict processing requirements, such as milk composition, nature and amount of the bacteria and rennet added, specific temperatures, severity and duration of agitation, and dozens of other details. Further

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variations including temperature and humidity are introduced during the ripening period.

Despite the initial statement that only acid-type and rennet-type cheeses exist, there is always some rennet added to acid cheeses and bacteria are always utilized when making hard cheeses. During ripening, these specifically selected bacteria and their enzymes gradually convert the casein into what is eventually enjoyed as cheese. Even certain molds can be used for this process. Stilton, Gorgonzola, Roquefort and blue cheese are examples of blue-mold cheeses that are ripened from the inside out.

Proper ripening is as critical to cheesemaking as is the conversion of milk into curd. Some cheeses, including Cheddar, Swiss, Edam, Parmesan, and the blue-mold cheeses, ripen only inside, with or without hole formation, while others, such as Limburger, Trappist and Port Salut, ripen both inside and from the outside in. Considering all of these variables and their permutations in cheesemaking, it is easy to understand why there are so many cheese varieties.

You may want to try your hand at it as my eight-year-old son did the other day. Add a dash of lemon juice to milk. Observe how the casein flocculates. Note how the coagulated white protein separates from a greenish liquid. Like Little Miss Muffit, you have just prepared curds and whey. Stir the mess gently and pour it through filter paper or some fine-meshed cloth. The whey will run through and—*presto*—cheese curd will stay behind. Eat it! You have just become a cheesemaker.

Dr. Kroger is Professor of Food Science at The Pennsylvania State University.

QUESTION BOX

Q. Does hard water supply significant amounts of dietary calcium?

A. The hardness of water depends on the presence of different minerals, primarily calcium carbonate. "Hard water" is found in regions where there is much limestone. Ground water in these areas is enriched with calcium and magnesium. (The softening process replaces these minerals with sodium). The amount of calcium obtained from water varies with the hardness and amount of water a person drinks. Although the amount of calcium obtained from hard water can be significant, it is usually much less than the amount obtained from food. [*Journal of the American Dietetic Association* 86:1192-1195]. Good food sources of calcium include milk and milk products such as cheese and yogurt, and dark green leafy vegetables.

Book Review

Title: Nutrition for the Working Woman (1986)

Author: Audrey Tittle Cross, J.D., M.P.H.

Publisher: Fireside Books, 1230 Avenue of the Americas, New York, NY 10020

Price: \$7.95 softcover

Reviewed by: Melanie R. Polk, M.M.Sc., R.D.

This book is geared toward the busy woman who encourages healthy eating for her family. It is chock full of helpful hints and sensible suggestions. Its style is quite original, viewing the kitchen as a corporation with the woman as corporate executive. This is interesting, although it may not work for many "working women" who may not relate their jobs to the "corporate environment." In fact, the information is hardly "high-level." Concepts are all fairly basic and a great deal of information is not geared specifically to the working woman at all.

The book tells how to cut costs and shopping time, keep calories in check and nutrient content high, plan menus, make meals more elegant and appetizing, use leftovers creatively, and organize and delegate kitchen tasks. Sections are included on meal patterns for vegetarians and restaurant eating. Most of the information is appropriate, although several examples of incorrect information or omissions are apparent. For example: tofutti is not fat-free, as the author suggests; excesses of water-soluble vitamins are not necessarily washed out of our bodies; the 1979 Dietary Guidelines are not updated; and new research on monounsaturated fats and fish oils is not mentioned when it could be. Overall, however, *Nutrition for the Working Woman* could serve as another sensible addition to your health library.

Mrs. Polk is an assistant professor at the University of Connecticut's School of Allied Health Professions and is a consulting nutritionist in private practice in West Hartford, Connecticut.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

CASES SETTLED BY NEW YORK ATTORNEY GENERAL

New York Attorney General Robert Abrams, a vigorous opponent of quackery and health fraud, has entered into consent agreements settling seven complaints filed by his office during the past 2½ years:

- Lederle Laboratories, Pearl River, N.Y., has agreed to alter its advertising and packaging of Stresstabs to stop implying that Stresstabs can reduce the effect of psychological stress and ordinary physical stress. The company paid New York State \$25,000 and agreed not to make any of the following representations unless supportable by competent evidence:

- Emotional stress causes depletion of water-soluble vitamins.

- Ordinary physical activity or ordinary physical stress alone causes depletion of water-soluble vitamins by the amounts contained in Stresstabs.

- Consumers undergoing ordinary physical stress cannot obtain all necessary nutrients by eating a well balanced diet or taking an ordinary potency (100% of the U.S. RDA) multiple vitamin supplement.

- Biotin is a vitamin which is difficult to obtain in an average diet.

- People under severe or non-severe physical stress, without more biotin, are at risk for biotin deficiency.

- Stresstabs will reduce the effect of psychological stress.

- Donsbach University, of Huntington Beach, California, and its president, Kurt Donsbach, promised to disclose in any direct mailings to New York residents or in any nationally distributed publication that Donsbach University degree programs are not registered with the New York Department of Education and are not accredited by any accrediting commission recognized by the U.S. Department of Education. The University also agreed to pay \$500 to New York State.

- Gary Pace, of Garden City, N.Y., a "Ph.D." graduate of Donsbach University, agreed to a permanent injunction against engaging in the unlawful practice of medicine or using "Ph.D." or "Dr." in dealings with the public unless he obtains a degree from an institution recognized by New York State. Pace had been charged in 1984 with illegally diagnosing, treating and prescribing remedies for hundreds of clients who paid him hundreds of dollars each for worthless tests and bogus advice (see NF 2:70-71). He agreed to pay \$2,000 to New York State and to make restitution to former clients who are dissatisfied. He also agreed not to do further "nutrition counseling" unless he either obtains proper creden-

tials or posts a \$150,000 bond.

- Doctors Data, a Chicago-based laboratory that performed hair analyses on Pace's clients, agreed to stop accepting human hair specimens from New York State unless it can obtain a permit from the New York State Department of Health. The company also agreed to pay \$25,000 in costs and penalties over a 4-year period. Pace used the test as a basis for prescribing vitamins, minerals and other supplements, which is not a valid practice.

- Herbal Tracers, Ltd., of Hewlett, N.Y., and its president, David Fishman, agreed to stop soliciting or accepting specimens for laboratory examinations without a laboratory permit. The defendants had been performing a test called Herbal Crystallization Analysis, in which human saliva was examined to determine what dietary supplements or herbs the donor supposedly needed. The defendants agreed to stop representing that the test is valid for use in diagnosis, prevention or treatment of disease. They also agreed to pay \$5,000 for court costs and civil penalties.

- The International Institute of Natural Health Sciences, Huntington Beach, California, and its president, Kurt Donsbach, agreed: 1) to restrict the sale of its Nutrient Deficiency Test to health care professionals legally authorized to practice within New York State; 2) to stop marketing in New York State all current versions of its nutrient deficiency questionnaire and associated computer analysis services; 3) to place conspicuous disclaimers on future versions of the questionnaire to indicate that the test should not be used for the diagnosis or treatment of any disease by either consumers or professionals; and 4) to pay \$1,000 in costs. The test, which lacks scientific validity, is used by questionable practitioners as a basis for prescribing vitamin and mineral supplements.

- The Vitamin Shoppe, Inc., agreed to stop selling Orachel or other "oral chelation" product in New York State labeled with claims or suggestions that it is effective in preventing or treating clogging of the arteries. The company also agreed to pay \$500 in costs. Orachel was a Donsbach formulation of vitamins, minerals, amino acids and other substances marketed by HRG Distributors of Huntington Beach, California. But Donsbach sold HRG several months before the New York Attorney General filed suit and initiated a product seizure (see NF 2:8). The Vitamin Shoppe operates retail stores in New York City and sells by mail at discount prices.

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THE RISE AND FALL OF UNITED SCIENCES OF AMERICA

Stephen Barrett, M.D.

United Sciences of America (USA) is a multilevel company based in Dallas, Texas. When it began marketing, its founder predicted gross sales of \$150 million for 1986 and \$1 billion by 1989—which would have made it the fastest growing company in U.S. history. By August 1986, USA claimed over 100,000 distributors and gross sales in line with these predictions. But today the company is bankrupt and under the guns of several government agencies.

USA is similar in concept to Shaklee, Amway, and Herbalife. Its products are food supplements said to represent "state-of-the-art nutrition." Anyone could become a distributor by completing an application and paying \$24.50 for a Success System Kit and Manual. No knowledge of nutrition or medical care was required. Distributors were urged to use and sell the products and to persuade others to become distributors who, in turn, would do the same. When sales volume was sufficient, distributors would get a percentage of the sales in their "downline." The company also set up a research foundation to generate research through grants and office-based studies.

Company management

USA was founded by Robert M. Adler II, a Dallas businessman who became wealthy by developing a computer that dials phone numbers and engages in interactive messages. USA's corporate brochure listed nine co-founders, including:

- Jerris Leonard, a former U.S. Assistant Attorney General, was USA's president.
- Jeffrey A. Fisher, M.D., a pathologist with a master's degree in immunology, was USA's medical director and senior vice president and was president of the USA Research Foundation. USA publications described him as a marathon runner and "a nationally recognized expert on preventive medicine." He hosts "The Life Extension Program," a talk show on radio station WOR, New York City.

- Lawrence J. Muno, USA's vice president for sports communications, is counselor and agent for many prominent athletes and has been president of the Association of Representatives of Professional Athletes.

- Mark Albion, Ph.D., an assistant professor of marketing at Harvard Business School, was an executive consultant to Mr. Adler.

- Haydon Cameron, USA's vice president for marketing, is a former newspaper reporter who was a top sales leader for Cambridge International, marketers of the Cambridge Diet.

- Robert A. Good, M.D., Ph.D., was chairman of USA's Scientific Advisory Board. Former president of Sloan-Kettering Institute for Cancer Research, he is now chairman of the Department of Pediatrics and Professor of Microbiology and Immunology at the University of South Florida College of Medicine.

Scientific Advisory Board

USA's corporate brochure listed 14 scientific advisors in addition to Dr. Good:

- Julius Axelrod, Ph.D., Chief, Section on Pharmacology, Laboratory of Clinical Sciences, National Institute of Mental Health, and winner of the Nobel Prize in Medicine and Physiology in 1970

- Eugene Braunwald, M.D., Professor of Medicine, Harvard Medical School, and Physician-in-Chief, Brigham and Beth Israel Hospitals

- Peter Cerutti, M.D., Ph.D., Director of Carcinogenesis Research, Swiss Institute for Experimental Cancer Research

- Michael DeBakey, M.D., Chairman, Department of Surgery, Baylor College of Medicine

- Philip J. DiSaia, M.D., Professor and Chairman, Department of Obstetrics and Gynecology, University of California, Irvine Medical Center

- Maureen Henderson, M.D., Professor of Epidemiology and Medicine, University of Washington School of Medicine

- Rashida Karmali, Ph.D., Associate Professor of Nutrition, Rutgers University, and Associate Professor, Sloan-Kettering Institute for Cancer Research

- Alexander Leaf, M.D., Chairman, Department of Preventive Medicine and Clinical Epidemiology, Harvard Medical School

- Robert J. Morin, M.D., Professor of Pathology, Harbor-UCLA Medical Center

- Lester Packer, Ph.D., Professor of Physiology and Anatomy, University of California, Berkeley

- William A. Pryor, Ph.D., Professor of Chemistry and Biochemistry, Louisiana State University

- Andrew V. Schally, Ph.D., Chief, Department of Experimental Medicine, Tulane University, and winner of the Nobel Prize in Medicine and Physiology in 1977

- Eli Seifter, Ph.D., Professor of Biochemistry and Surgery, Albert Einstein College of Medicine

- C. Norman Shealy, M.D., Ph.D., Director, Shealy Pain and Health Rehabilitation Institute, and founder and past-president of the American Holistic Medical Association.

Most members of USA's Scientific Advisory Board were attracted by what they perceived as an opportunity to advance the cause of preventive medicine and the promise that more than \$1 million a year in research funds would be made available to the scientific community. However, several members became upset that USA was using their presence on the board for marketing purposes. Between June and December 1986, Drs. Axelrod, Braunwald, Good, Henderson, Karmali, Leaf and Schally resigned. Some were upset about USA's marketing practices, while others were concerned about unfavorable publicity the company was receiving.

According to Dr. Fisher, some of them and most of the remaining board members believed that supplements of the type promoted by USA could have valuable preventive health benefits—and most of them used one or more of the company's products.

Most board members received annual stipends of \$10,000 to \$20,000 in return for attending one meeting a year and furnishing advice when requested. In line with USA's announced intention to generate nutrition-related scientific research, the USA Research Foundation awarded \$100,000 grants for studies involving antioxidants or fish oils. The first 12 grants went to Drs. Leaf, Pryor, Cerutti, Good, Packer, DeBakey, Axelrod, and five other scientists who were not members of USA's Scientific Advisory Board.

USA's products

The company's press packet stated: "At the heart of United Sciences of America, Inc.'s broad-based nutrition program lies its products, four state-of-the-art nutritional formulations that are based on over 50,000 published research and clinical studies interpreted by

some of the world's foremost research scientists . . . to come up with the right amounts of nutrients to promote optimal health without any risk whatsoever of toxicity."

The four products were: 1) the Master Formula consisting of vitamins, minerals, and antioxidants; 2) Formula Plus, a marine lipid concentrate rich in omega-3 fatty acids; 3) Fiber Energy Bar, containing nine grams of fiber; and 4) Calorie Control Formula, a high-fiber protein powder mix for use as a meal substitute. Their ingredients are listed on the following page. A kit containing a month's supply of the four products cost distributors \$100 and "retailed" for \$135.

Early this year, the American Council on Science and Health asked forty-eight of its advisors to examine USA's formulas and to complete a detailed questionnaire about one of them. (Twelve advisors were assigned to each product.) A total of 28 questionnaires were completed: Master Formula (10); Formula Plus (7); Calorie Control Formula (8); and Fiber Energy Bar (3). All twenty-eight respondents stated that USA's marketing materials contained claims for product ingredients that were false, unproven and/or premature. In most cases, the advisors felt that the product formulations were irrational and that it had not been established that long-term use is safe.

Those who reviewed the Master Formula disagreed with the claim that it provides the body with the right nutrients in the right amounts or increases immunity in people whose diets contain the Recommended Dietary Allowances of essential nutrients. Those who reviewed Formula Plus felt that fish oils may turn out to have value in preventing or treating various conditions, but no data exist to recommend supplements for "everyone over 30" as USA recommends. Some who reviewed the Calorie Control Formula felt that "meal substitutes" are useful in weight control programs, while others felt they are not. Two advisors who commented on the fiber energy bar did not believe that daily long-term use would be beneficial, while the other said that insufficient data are available to evaluate the product.

Marketing claims

According to an article in the February 1986 Inc. Magazine, Adler was aware that multilevel marketing had pitfalls and supposedly took steps to avoid them. He enlisted a scientific advisory board to help design USA's products, Mark Albion to design its sales program, and Jerris Leonard to provide legal guidance. And "to eliminate hyperbole on the part of overeager salespeople," USA produced videotapes for presentations to prospective customers.

From a marketing standpoint, the videotapes were awesome. The *Company Introduction Videotape* was narrated by William Shatner (Captain Kirk of *Star Trek*) and included scenes of a space rocket launching, a

USA, INC. PRODUCT INGREDIENTS

Master Formula, Formula Plus, Fiber Energy Bars and Calorie Control Formula contain the highest quality ingredients available today. These ingredients meet the exacting standards established by USA, Inc. in conjunction with the USA, Inc. Scientific Advisory Board.

MASTER FORMULA

Recommended adult use: Take three tablets, three times daily prior to or with meals.

Vitamins	9 Tablets Supply:	% U.S. RDA
Vitamin A (Acetate)	5,000 IU	100
Beta Carotene	25,000 IU	500 ^a
Thiamine (Thiamine-HCl)	50 mg	3333
Riboflavin	20 mg	1176
Niacin	25 mg	125
Niacinamide	100 mg	500
Pantothenic Acid (d-Calcium Pantothenate)	50 mg	500
Vitamin B-6 (Pyridoxine-HCl)	20 mg	1000
Vitamin B-12 (Cobalamin Concentrate)	30 mcg	500
Vitamin C (Ascorbic Acid)	1500 mg	2500
Ascorbyl Palmitate (Lipid Soluble Vitamin C—42 mg as Vit. C)	100 mg	70
Vitamin D-3	200 IU	50
Folic Acid	400 mcg	100
Biotin	150 mcg	50
Vitamin E Complex		
Vitamin E (d-Alpha-Tocopherol Acetate)	400 IU	1333
Mixed Tocopherols (Beta, Gamma, Delta Tocopherols)	100 mg	333 ^b
Amino Acid Anti-Oxidant Complex		
L-Cysteine (L-Cysteine-HCl)	200 mg	**
L-Methionine	50 mg	*
L-Glutathione	15 mg	**
Selenium		
Seleno-Methionine	100 mcg	*
Lipogenic Complex		
Choline (Choline Bitartrate)	250 mg	**
Inositol	250 mg	**
L-Taurine	150 mg	**
Minerals and Chelates		
Calcium (Calcium Carbonate)	1000 mg	100
Magnesium (Magnesium Oxide)	500 mg	125
Potassium (Potassium Chloride)	99 mg	5
Zinc (Zinc Gluconate)	30 mg	200
Copper (Copper Gluconate)	2 mg	100
Manganese (Manganese Gluconate)	2.5 mg	*
Iodine (Potassium Iodide)	50 mcg	33
Molybdenum (Sodium Molybdate)	125 mcg	*
Chromium (Natural Trivalent Chromium)	250 mcg	*
Additional Nutrients		
Bioflavonoids (Hesperidin Complex)	250 mg	**
PABA (Para Amino Benzoic Acid)	25 mg	**
Allium sativum (Pure Gar Co.)	250 mg	**

^a 15mg of beta carotene supplies 25,000 IU of precursor vitamin A activity.

^b Activities of mixed tocopherols vary—level of activity based on 100mg of dl-alpha-tocopherol equivalents.

* Determined to be an essential nutrient but actual requirements have not been established.

** No nutritional requirement established.

*Source: USA product flyer

FORMULA PLUS

Recommended use: Take 3 to 6 capsules once per day with a meal.

Three 1 gram capsules daily supply:

EPA (eicosapentaenoic acid)	540 mg
DHA (docosahexaenoic acid)	360 mg
Allium sativum extract	150 mg*
d-alpha-tocopherol	21 mg**
Ascorbyl palmitate	6 mg

* Contains a certified allicin content of 1 mg determined by measuring levels of enzymatically liberated pyruvic acid.

** Vitamin E activity of 27 IU—equivalent to 88% US RDA. Gelatin capsules colored naturally with carob, and contain no artificial flavors or preservatives.

FIBER ENERGY BAR

Nutrition Information Per Serving

Serving Size	(2.0 oz)	56.7 g
Calories		200
Dietary Fiber		9 g
Protein		8 g
Carbohydrates		24 g
Fat		6 g
Sodium		18 mg
Potassium		100 mg

Ingredients: USA, Inc. coating, lycasin (polysorbitol), Fiber blend (oat flakes, high fiber crisp brown rice, guar gum, barley flakes, cellulose, oat bran, apple bran, barley bran, rice bran, pectin, yucca fiber, carrot fiber, beet root powder), fructose syrup, cottonseed nuts, UltraProtein blend (cottonseed protein, calcium-sodium caseinate, Lactose Free whey protein concentrate, surimi, garbanzo bean flour), soy and cottonseed oils, sesame seeds, flax seeds, natural flavors, maltodextrin, potassium chloride, lactic acid, mixed tocopherols, ascorbic acid.

USA, Inc. Coating Ingredients: fractionated palm kernel oil, crystalline fructose, maltodextrin, roasted dahlia root powder, cellulose, cottonseed protein, lecithin.

CALORIE CONTROL FORMULA

Nutrition Information Per Serving

Serving Size	(1.08 oz)	30.4 g
Servings per container		14
Calories		100
Protein		9 g
Carbohydrates		16 g
Fat		less than 1 g
Fiber		4 g
Sodium		45 mg
Potassium		200 mg

Percentage of U.S. Recommended Daily Allowances (% of U.S. RDA)

Protein	15	Calcium	15
Vitamin A	*	Iron	25
Vitamin C	35	Phosphorus	15
Thiamin	*	Magnesium	20
Riboflavin	2	Zinc	45
Niacin	*		

*Less than 2% U.S. RDA

Ingredients: UltraProtein Blend (high protein cottonseed flour, calcium/sodium caseinate, Lactose Free whey protein concentrate, surimi, garbanzo bean flour), fructose, Fiber Blend (oat bran, guar gum, cellulose, barley bran, rice bran, pectin, apple fiber, yucca fiber, carrot powder, beet root powder), maltodextrin, lecithin, natural and artificial flavors, carrageenan, tricalcium phosphate, magnesium oxide, potassium chloride, calcium ascorbate, ferrous fumarate, zinc oxide.

This product has no derivatives of soy, yeast or wheat. Sweetened only with fructose. Contains no sucrose, artificial sweeteners, artificial colors or preservatives.

giant computer bank, scientific laboratories, prominent medical institutions, and medical journals. Shatner alleged that "our food, water and air are becoming contaminated" by chemicals ("toxic killers"), that cancer is on the rise, that our soil is being depleted of "vital, life-giving nutrients and important earth minerals," that one out of every three families will be stricken with some form of cancer, and that two out of five people will die of heart disease or stroke. Then he described how Robert Adler had developed a "brain trust of medical and scientific experts who have pioneered one of the most dramatic programs in the history of nutritional science . . . Their mission is clear: to develop a complete nutritional program to protect us from the growing dangers that are threatening the health of our nation." Shatner also suggested that investing in USA's program would result in "looking your best, feeling maximum physical energy and mental well-being, enjoying total health."

The *Business Opportunity Videotape* was combined with the *Company Introduction* into a 26-minute videotape. William Shatner explained multilevel marketing and stated that "the potential profits are staggering because the growth is geometric." Mark Albion suggested that anyone using USA's marketing package properly would be successful, and "with a medical and scientific credibility, United Sciences, Inc., is destined to become the IBM of nutrition." And five prominent athletes—Joe Montana, Gary Carter, Chris Evert Lloyd, Bill Rodgers and Steve Garvey—invited viewers to "join USA's winning team."

The *Medical Library Videotape* was a 90-minute tape in which Dr. Fisher answered about 100 questions about USA's products and the relationship of nutrients to disease. According to the tape's narrator, "Nutritional science is expanding so rapidly that only a company with USA's state-of-the-art computer technology and USA's advisory boards, comprised of world-leading medical doctors and Ph.D. researchers can properly inform the public."

Before the tapes were produced, USA released a 20-page *Company Overview* that described its purposes, scientific advisory board, research base, products, research goals, and marketing strategy. The company was described as "a major new entity with a revolutionary health concept." Its corporate mission was "to provide all Americans with the potential of optimum health and vital energy through state-of-the-art nutrition." The company was said to have established "the world's largest computerized data base in clinical nutrition" in the following manner:

"USA's team of Ph.D. researchers searched and reviewed the collective data of more than 5 million references in 14,200 medical and scientific journals covering 150 countries . . . From this powerful body of clinical

evidence came USA's own in-house index of 30,000 scientific studies covering 250,000 pages of documented research which was condensed to 10,000 pages of categories and studies . . . Never before has a nutritional information base so complex been assembled by a single company."

The *Company Overview* stated that media interviews with scientists and superstar athletes, combined with articles in major publications "are expected to elevate USA Inc.'s extraordinary concept into a new national movement." USA's Profit Plan was "designed to encourage all product-users to go into business for themselves—with a minimal financial investment and without risk." It also offered "a vital new life—and financial freedom for all who become involved."

USA also produced a 2-page flyer describing the company's products and listing its scientific advisory board. According to the flyer, Harvard's Dr. Leaf called USA's products "the most complete nutritional program I have ever analyzed." Similar statements were attributed to him in USA's corporate brochure, sales manual and introductory videotape.

Armed with all of this information, distributors who joined early placed classified ads in *USA Today*, *The New York Times*, *American Health* magazine, and many other publications. A typical ad read: "Achieve optimal health and financial freedom selling nutritional and weight control products endorsed by Nobel Prize winning physicians and world class athletes." People who responded would be asked to invest up to \$25 for an information packet that included the introductory videotape.

During the past year, I spoke with about 20 active USA distributors. All believed strongly that USA's products had been designed and endorsed by the company's Scientific Advisory Board and that the products were effective against a wide range of health problems mentioned in USA's Medical Library tape. Most claimed that the products had made them more energetic, and one was absolutely certain that the Master Formula "removes the toxic pollution stored in your fat cells" and that Formula Plus "cleans the cholesterol from your veins."

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Media backlash

USA's marketing program aroused the ire of Fredrick J. Stare, M.D., Ph.D., Emeritus Professor of Nutrition at Harvard University School of Public Health, and John H. Renner, M.D., president of the Kansas City Committee on Health and Nutrition Fraud and Abuse. In the September 1986 *Good Housekeeping*, Dr. Stare accused USA of "peddling unnecessary supplements and calling it a breakthrough," and in the October 9, 1986, *New England Journal of Medicine*, he charged that "USA seems to want to outdo others in person-to-person peddling of unnecessary or unproved diet supplements." In the same journal, Dr. Renner wrote: "I doubt that United Sciences' products are 'a highly effective pro-



USA's corporate brochure shows its vice president of science and data information standing in a room full of giant computers. The brochure doesn't reveal that the computers belong not to USA but to Dialogue Information Service, Palo Alto, California.

gram for optimal health.' As far as I know, they were not tested before marketing. Moreover, an optimal health program should involve more than high-priced food supplements, protein powder, and candy bars."

These criticisms stimulated many other publications to examine what was going on. Invariably, they concluded that USA was making false or misleading claims for its products. This criticism, plus the resignation of several USA advisors, forced the company to announce that it would stop distributing virtually all of its promotional materials.

On October 28, 1986, NBC-TV's 1986 broadcasted a devastating exposé in which Dr. Leaf denied endorsing USA's products. Dr. George Bray, a prominent nutritionist, said he had suffered a near-fatal anaphylactic reaction to the Fiber Energy Bar. A Texas dietitian reported that USA products had made her quite ill. And the program's narrator, Connie Chung, said that USA was being investigated by the Texas Attorney General and the U.S. Food and Drug Administration. Actually, the Texas Attorney General's Office had merely decided to investigate but had not begun to do so. But the TV program produced an avalanche of inquiries that stimulated a full-scale investigation. The program also curtailed USA's sales. Within a month, the company was headed for bankruptcy.

Legal difficulties

On December 12, 1986, the U.S. Food and Drug Administration (FDA) sent USA a strongly worded regulatory letter ordering it to stop suggesting that any of its products are effective in the cure, mitigation, treatment or prevention of disease. The agency said that claims of this type in its videotapes make the products "new drugs" that are illegal to sell in interstate commerce because they lack FDA approval. In addition, all of the product labels were defective in other ways.

On January 21, 1987, USA petitioned in federal court for Chapter 11 bankruptcy, listing total assets of \$7,300,000 and liabilities of \$8,600,000. (The purpose of this type of bankruptcy is to stave off creditors to give the company time to restructure its indebtedness with the hope of remaining in business.) The petition named Robert Adler as sole shareholder and director of USA, Inc., and Jerris Leonard's law firm as its eighth largest unsecured creditor, with \$121,379.69 owed. No official sales figures have been released, but press reports suggested that USA's 1986 gross income totaled \$60 million.

On January 28, the Attorneys General of Texas, New York and California filed suit in their respective states, charging that USA, Inc., had made improper claims for their products and that their sales plan constituted an illegal pyramid scheme. In addition, the Texas suit charged that USA had not properly registered as a manufacturer, and the New York suit demanded

that Chris Evert Lloyd, Joe Montana, Steve Garvey, Gary Carter and Bill Rodgers appear in court to explain their financial relationship with the company. The New York Attorney General's office indicated that many USA distributors were not paid commissions owed them by the company. The California suit, filed by Supervising Deputy Attorney General Albert N. Sheldon, who had successfully prosecuted Herbalife [NF 4:1], demanded civil penalties of at least \$1,000,000 plus the cost of prosecution.

On February 5, the District Court of Dallas County, Texas, issued a temporary injunction based on an agreement between USA and the Texas Attorney General. Its terms barred the company from:

- Marketing any current products without sending a "correction letter" acceptable to the Attorney General to all distributors
- Shipping any products unless accompanied by an acceptable disclosure stating that they are not for the prevention or treatment of disease
- Representing that USA's products have any effect in: infectious and parasitic disease; tumors; endocrine, nutritional and metabolic diseases and immunity disorders (including AIDS); diseases of the blood; mental disorders; diseases of the nervous, circulatory, respiratory, digestive, genitourinary or musculoskeletal systems; complications of pregnancy or childbirth; birth defects; injury or poisoning; or ill-defined conditions
- Manufacturing any food products without being registered as a manufacturer by the Texas Commissioner of Health
- Selling products through a multilevel distributorship

During this period, the company was sold to T.J. Talley, D.D.S., a retired dentist with a special interest in nutrition, and Peter J. Speckman, Jr., an attorney with a background in marketing and sales. On March 5, Speckman notified the FDA that he was sending letters informing USA's active distributors that: 1) he and Dr. Talley had completed purchase of the company; 2) the FDA had issued a regulatory letter; 3) three state attorneys general had filed suit against USA; 4) the company had agreed to an injunction; 5) products would soon be available for sale; 6) the company plans to develop new sales materials and a new marketing plan that do not

violate state laws; and 7) all existing videotapes should either be destroyed or returned to the company for partial credit. Speckman told the FDA he would enclose a copy of the injunction and would warn distributors not to make any claims that USA's products are effective against any disease. He also said that henceforth, all USA products would bear the following disclosure:

IMPORTANT NOTICE

The products you have purchased are a nutritional supplement. They are not intended for the prevention, treatment or cure of any disease, illness or other condition. Please disregard any claims you have been told to the contrary. Thank you for using USA products.

USA is now completely under new management. On March 24, David Lough, its current vice president for marketing, told me that Jerris Leonard had resigned in November (a fact not revealed to most USA employees) and that Dr. Fisher and the rest of USA's original management team had left when the company went bankrupt. It seems likely that adverse publicity and/or lack of payment have driven away the rest of USA's scientific advisors and endorsing athletes. But Mr. Lough said he had no information on this because the company has not had recent contact with them. He estimated that Mr. Speckman's letter of March 5th went to about 5,000 of USA's most active distributors. But in February, USA's top distributor invited his downline to join Ameriplus, another multilevel company with products similar to those of USA.

Overview

Though some of its stated goals were laudable, United Sciences of America promoted its products with enormous exaggeration. Its Scientific Advisory Board, though prestigious, had no monopoly on the ability to analyze scientific data. USA's products were formulated by pooling the opinions of Dr. Fisher and the members of his advisory board who believe that virtually everyone should take dietary supplements. Skeptics were involved minimally if at all.

Within the past two years, the National Academy of Sciences has endured raging controversy over

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whether it is actually possible to determine "optimal" levels of nutrients at this time [NF 3:1-2]. Even if USA's formulations turn out to be optimal—which is very doubtful—it was extremely presumptuous to represent them as "state-of-the-art nutrition." They were merely a guess by a small group of scientists who espouse minority viewpoints on supplementation.

USA's imagery and puffery certainly didn't reveal this. USA boasted of "analyzing 1,300 new research papers a month" to be sure its product formulations were up-to-date. That statistic might persuade laypersons that emergent scientific data are too voluminous for ordinary mortals (like their personal physician) to keep up with. However, it is doubtful that so many papers are relevant to USA's products. Even if they are, the number of papers entered in one's computer bank is not as important as the data they contain and the logic used to analyze them.

Nor was USA's method of gathering information anything special. Many medical facilities, researchers and practicing physicians have ready access to computerized data bases. And many scientists not only follow the scientific literature but know about important studies before they are published. Significant informa-

tion is spread rapidly throughout the medical community through journals, lectures, informal discussions among doctors, cable television programs, and other channels of communication.

Exaggeration was also involved in recruiting distributors. Although those who sign up during the first few months of a successful multilevel company can make a great deal of money, the later the entry, the less the chance of success.

Although USA stopped distributing all of its questionable promotional materials, the claims they generated may circulate indefinitely by word of mouth.

The fact that USA pledged to support research was laudable, but its approach was backwards. Before asking the American public to spend millions (or billions) of dollars on USA products, they should have been tested for both effectiveness and long-range safety.

It seems unlikely that USA, Inc., can recover from its legal and financial difficulties and remain in business.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*.

BRIEFS

Attack on irradiation continues. According to a report in *Health Foods Business*, the Food Irradiation Safety and Labeling Requirement Act (HR 956) now has 49 cosponsors. This bill would block FDA regulations permitting irradiation of all fresh fruits, vegetables, pork and other foods. Meanwhile, the New Jersey Senate approved a bill (S-2571) to ban the sale of irradiated food. Although radiation is safe, it is being opposed by the health food industry and several small but vocal groups [NF 3:79]. Perceiving this fuss, food companies are worried about consumer acceptance and are hesitant to expand utilization of the process.

Dairy research centers. Six dairy research centers will be funded jointly by the National Dairy Promotion and Research Board (NDB), local industry and dairy groups, and 12 universities the centers will represent. NDB will contribute \$2.7 million per year for five years to the project and will award a similar total to individual scientists and research groups. NDB was established by Congress to strengthen the dairy industry's position in domestic and foreign markets. It began operations in 1983 and is financed by a mandatory assessment of 15¢ per 100 pounds of milk produced and marketed in the continental United States. Its address is 2111 Wilson Boulevard, Suite 600, Arlington, VA 22201.

Research contract. Panlabs, Inc., of Seattle, Washington, and Eastman Pharmaceuticals, a division of Eastman Kodak Company, have entered a multimillion dollar agreement under which Panlabs will screen fermentation broths for new types of pharmacologically active molecules produced by naturally occurring microorganisms.

Supplement use rising? According to a study by Business Communications Company, retail sales of vitamins, minerals and associated products through all outlets totalled \$2.9 billion in 1986. During the year, calcium sales rose from \$18 million to a projected \$240 million, and beta carotene showed signs that it would also rise sharply. Meanwhile, *Health Foods Business's* 1986 annual survey estimated that health food store sales totalled \$2 billion (up 22.5% from 1985), including \$763 million for vitamins and supplements (+ 14%), \$76 million for bulk herbs (- 47%), \$41 million for herb teas (- 12%), \$29 million for macrobiotic foods (+ 72%), \$135 million for grains and cereals (+ 135%), and \$67 million for books (+ 102%).

Coming Soon: The Mercury Amalgam Scam.

QUINOA SALES RISING

Stephen M. Voynick

Among the so-called "super" grains, quinoa (pronounced keen'-wah) appears the most likely to move from health food stores to supermarkets. Quinoa's growing popularity is due to taste, kitchen versatility and—most important—high nutritional value. Duane Johnson, Ph.D., a Colorado State University agronomist developing quinoa strains for domestic cultivation, is one of quinoa's nutritional proponents. While emphasizing that no single food can provide all human nutritional requirements, Johnson said in *Newsweek*, "If you had a choice of one food to survive on, this one would be the best."

Quinoa (*Chenopodium quinoa*) is a five-foot-tall herb plant which, at maturity, bears heavy clusters of millet-sized seeds. Botanically, the seed is classified as a fruit; but its physical characteristics, nutritional profile, method of cultivation, and end uses, are nearer to those of the grain family. Quinoa is native to the high Andes of South America, where it has been cultivated since antiquity. Together with maize and potatoes, it was a staple in the highly developed Incan agricultural system. The "mother grain," as quinoa is known, was considered sacred; at planting time, the Incas opened the first quinoa furrow with a ceremonial golden implement. After the Spanish conquest, production of quinoa declined dramatically. Today, it has little popularity among South American urban consumers. However, it remains a dietary staple of rural Andean peasants who grind it into a flour for use in porridge and tortillas.

Quinoa had been introduced to American consumers twice without success, first in the 1880s for its spinach-like leaves, then in 1918 as a breakfast cereal. Later, in 1983 a trio of friends founded Quinoa Corporation in Boulder, Colorado, to import and distribute the grain through health and natural food stores. Initially, they seemed headed for failure; consumers were either unfamiliar with quinoa or put off by its \$3/pound retail price. First year sales were only 1,000 pounds. In 1984, one of the partners was killed by a stray bullet while organizing a quinoa farm supply system in Bolivia. But driven by a sincere belief in their product, the others persisted.

In 1984, sales rose to 12,000 pounds. When sales quadrupled the next year, investment analysts began paying attention to "that offbeat Boulder health food company." In 1986, the company was acquired by a major holding corporation which provided capital for expansion, and sales topped a quarter-million pounds. Today, quinoa is available in all 50 states, and growing consumer interest in its nutritional qualities may drive 1987 sales over one million pounds.

Like most grains, quinoa contains about 100 calo-

ries per ounce. It is a fairly good source of calcium, phosphorus, iron, fiber, vitamin E and several B vitamins. Quinoa is considerably higher in protein and oil and lower in carbohydrate content than other grains. Protein content among quinoa varieties ranges from 10-20% of total seed weight, generally higher than high-protein wheats and several times higher than corn and rice. Oil, primarily unsaturated, amounts to 5½-7% of total seed weight, higher than in oats and 2-6 times higher than in other grains. Carbohydrate content, however, is 10-15% lower than found in most grains. Quinoa protein is of particular interest because it contains an unusual balance of essential amino acids, including high levels of lysine and methionine, putting its overall protein quality on a par with that of milk.

Quinoa's taste, sometimes compared to that of corn or squash, may be described as mellow and grainlike, yet distinctive. The dried quinoa seed keeps indefinitely and cooks like rice, but in half the time. Basic preparation requires simmering in a double volume of water, after which the quinoa expands, becomes nearly transparent and takes on a texture similar to tapioca. The basic preparation may be consumed as breakfast porridge, made into soups or puddings, or served as a side dish with meat or fish. The amino acid balance makes it an excellent main dish substitute for vegetarian platters. Quinoa may also be used in poultry dressings, casseroles and such dishes as stuffed peppers.

Quinoa flour is used to bake light and highly nutritious cookies, cakes and pastries. While its low gluten content makes it unsuitable for yeast-type breads, quinoa and quinoa flour are a dietary alternative for those on gluten-restricted diets.

In 1982, seedstock from six of the hundreds of existing quinoa varieties was selected for experimental U.S. planting in the Rocky Mountains, where the cool, dry climate is similar to that of the Andes. Progress in strain development for domestic cultivation is already apparent. In 1986, Colorado alone produced 50,000 pounds of quinoa for seedstock and domestic consumption. Quinoa is hardy, frost and drought-resistant, tolerant of poor soils, and requires relatively little care. Considering the high retail price, continued acceptance among U.S. consumers could make it a lucrative small farm cash crop, both here and in South America.

Recipes and additional information can be obtained from the Quinoa Corporation, P.O. Box 7114, Boulder, CO 80306.

Mr. Voynick, a free-lance writer who resides in Leadville, Colorado, majored in food technology at Rutgers University.

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“NUTRITION INSURANCE”—A SKEPTICAL VIEW

Alfred E. Harper, Ph.D.

Vitamin deficiency diseases have not been encountered in the major health and nutrition surveys done recently in the United States. In fact, such diseases now occur so rarely in this country as to be medical curiosities. Nevertheless, large numbers of apparently healthy people take vitamin supplements. The reasons they give for this are a concern that they are not getting enough vitamins from their diets and the belief that they will be less healthy without supplements. These views are encouraged by nutrition supplement advertisers and others who suggest that dietary inadequacy is common and that many Americans have special nutrient needs for which supplementation is advisable.

Interpretation of surveys

One of the main points used to support recommendations for “insurance” with vitamin supplements is that health and nutrition surveys have found that intakes of some vitamins by some segments of the population are below the Recommended Dietary Allowances (RDA). [The abbreviation RDA is used for both the singular and plural of the term.] It is true that surveys have made such observations. But proper interpretation of these results requires understanding how the RDA are established and how dietary surveys are done.

The RDA are dietary standards: the levels of intake that the Committee on Dietary Allowances of the Food and Nutrition Board of the National Research Council/National Academy of Sciences considers “adequate to meet the nutritional needs of practically all healthy persons.” But they were designed to provide food service personnel who prepare food for large groups of people with a set of values for desirable intakes of key essential nutrients and appropriate intakes of calories. The quantities of these essential nutrients in the food offered each day could then be compared with the RDA to determine whether the key nutrients were being provided in large enough amounts to prevent any nutritional inadequacy.

Because people differ in size and genetic makeup, their nutrient requirements differ; requirements of individuals for essential nutrients range from about 50% below to 50% above the population average. The RDA are therefore set high enough to ensure that, if the quantities of nutrients in the food being served meet this standard, they will meet the needs of individuals with the highest requirements. Thus the amounts of nutrients most people require will be below the RDA, and about half the population should require less than 75% of the RDA. It would require an elaborate probability analysis to determine how likely it is that people consuming less than the RDA have intakes that are not adequate. Using the RDA directly as standards for evaluating the adequacy of individual nutrient intakes is improper; it would be like setting the standard for height at seven feet and concluding that all those under seven feet have suffered growth retardation.

Even when the estimates of nutrient intakes obtained during dietary surveys are compared with the RDA, we find that only two vitamins—A and C—are identified consistently as “problem” nutrients. In interpreting these observations, we encounter two additional problems. The adult RDA for vitamin C is high enough to ensure that an adult who is consuming an amount of vitamin C equal to the RDA will have a store of the vitamin sufficient to prevent signs of deficiency even if no vitamin C is consumed for about two months. This standard, twice that of the World Health Organization, is much higher than necessary. Because of this, one would expect to find problems of “inadequate” intake where none exist—and that is exactly what happens.

With vitamin A, a different problem is encountered. The main sources of vitamin A in the diet are carotenoids, precursors of the vitamin found in dark green and yellow to orange vegetables. These foods are not usually eaten every day. So when the results of dietary surveys are based on measurements of nutrient in-

takes for a single day—as they frequently are—many people have “low” intakes of vitamin A while others have unnecessarily high intakes. Since vitamin A is stored efficiently in the liver, a surplus consumed on one day will provide a reserve that is available on subsequent days. Intakes of vitamin A can probably be estimated accurately only by averaging daily intakes over at least a week.

Thus, because of the nature of the RDA and of dietary surveys, it is not possible to assess nutritional status by comparing estimates of nutrient intakes with the RDA. The only way that vitamin status can be determined reliably is from clinical observations and measurements of blood or tissue concentrations of vitamins or cofactors or the rates of metabolic reactions for which the vitamins are needed. When this has been done, a very small proportion of the population surveyed has been found to have values that are low, but still not low enough to be considered deficient. With such a high proportion of the population showing no evidence of inadequate vitamin intakes, the low values cannot be due to inadequacies of the food supply.

Estimates of the nutrient content of our food supply by the U.S. Department of Agriculture indicate that the amounts of most nutrients available to the consumer have increased during this century. Consumption of fruits, vegetables, cheese, skim milk, fish, poultry and pork—all excellent sources of essential nutrients—have increased during the past ten years more than enough to compensate for declines in the consumption of beef, whole milk, and eggs. Of low-income families studied by the Agriculture Department, 42% were consuming a diet that met the RDA for eleven nutrients. This is incontrovertible evidence that the food supply contains adequate amounts of essential nutrients. Families that were dependent on food stamp allotments were consuming less adequate diets, indicating that as income falls, food choices become more limited and intakes of some essential nutrients decrease. Inadequate intakes of food, and hence usually of nutrients also occur because of neglect, illness, alcoholism and ignorance. Dietary supplements are not an appropriate solution to these problems.

Eating patterns

Another reason given for the use of vitamin supplements is deteriorating or haphazard eating habits. America's eating habits have changed, but whether this represents deterioration is certainly debatable. A pattern of eating three or more substantial meals a day is common in agricultural communities and others in which human energy expenditure is high. This was accepted as the most desirable pattern when our population was largely rural and when mechanization was much less in both the home and the workplace than it is today. One might well ask whether, in a society in

which energy expenditure is low, it may not be preferable to eat several small meals throughout the day and to eat when hungry rather than when the clock says it is mealtime. There is much speculation but little evidence that “irregular” eating patterns result in consumption of inadequate amounts of essential nutrients except when total food intake is low.

Even the claim that many people, especially women, have low caloric intakes, and therefore low intakes of essential nutrients, deserves careful scrutiny. The basis for the RDA for energy (calories) is different from that for essential nutrients. The RDA for energy represent average requirements. Half of the population should thus require less than the RDA. Also, with as much as 20% of the population (especially women) on weight reduction regimens at any one time, the proportion found to have caloric intakes below the RDA in any dietary survey would be expected to exceed 50%. Despite this, underweight is a problem for very few people in this country; hence, the number of dieters who stay on low-calorie diets for very long cannot be high.

Furthermore, dietary surveys usually find that protein intakes meet or exceed the RDA. Since protein tends to make up a relatively constant proportion of calories in most diets, this suggests that caloric intake has been underestimated. Persons with caloric intakes above the RDA are reported to have intakes of most essential nutrients that are well above the RDA. Thus, underestimation of caloric intakes probably accounts for some of the low estimates of micronutrient intakes.

Since there is little evidence that will stand up to scrutiny to suggest that any substantial proportion of the U.S. population is consuming a nutritionally inadequate diet for any length of time, there is little reason to assume that vitamin supplements will benefit a substantial portion of the population. Foods contain important nutrients that are not provided in vitamin supplements; they also contain many constituents whose significance for health is unknown. Learning how to select foods properly to meet nutritional needs, regardless of changing eating patterns or changes in the food supply, is the only reliable way to ensure lifelong nutritional health. Encouraging the use of vitamin supplements as a corrective for poor eating habits defeats the entire purpose of nutrition education, i.e., to learn the nutritional prin-

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ciples needed to select a healthful diet instead of accepting nutritional advice on faith.

"Protector Vitamins"

In recent years it has been suggested that above-RDA amounts of vitamins are needed to counteract the effects of various environmental stresses. However, since the human subjects used in experiments which provided the information on which RDA are based were not protected from usual environmental stresses or infections, it is doubtful that vitamin supplements are needed in these conditions. During illness, recovery from illness, and periods of drug therapy, food intake may be so low that it becomes difficult or even impossible to meet nutritional needs from foods. Nutritional supplements can be useful under such conditions, but as part of a comprehensive program of treatment under the guidance of a physician.

Various observations have led to suggestions that certain vitamins—particularly A, E and C—may have some unique value in preventing or reducing adverse effects from environmental hazards. (Hoffmann-La Roche has even designated these three as "Protector Vitamins" in an extensive advertising campaign.) Some of these observations are tantalizing, e.g., that these vitamins may act in some way to protect against certain cancer-inducing agents; and, that vitamins E and C, as antioxidants, may protect against ill effects from certain chemical contaminants. Some studies indicate that vitamin deficiencies can increase susceptibility to toxic agents, but it does not follow from this that extra vitamins provide extra protection. This concept is the subject of much current research, but unless direct evidence is found, it seems unwise to recommend supplementation on this basis.

"Special needs"

Advocates of vitamin supplements have suggested that many people belong to population groups that have special vitamin needs. Probably the most elaborate presentation of this concept is contained in "Personal Health Circumstances Benefited by Nutritional Supplementation," a six-page flyer published recently by the Council for Responsible Nutrition (CRN), a coalition of major food supplement manufacturers and distributors.

According to the flyer: "CRN believes that the analysis of personal nutrition need categories strongly suggests that large groups of people are at risk for a variety of reasons and that their nutritional status, overall quality of health, and consequent mortality and morbidity are affected. Thus it makes good sense to help guide those in these special need categories to take some action that will protect or improve their nutrition status. Nutrition is a dynamic, rapidly evolving science. CRN believes it is foolish for some old-fashioned health, medical and nutrition personnel to automatically exclude supplements as one worthwhile choice. Instead, it is rational for the millions of people in self-identifiable circumstances to investigate and choose from among all appropriate alternatives of proven benefit." In line with these thoughts, the flyer designates 18 "groups with proven nutrient needs" for which "scientific evidence available today suggests that a nutritional supplement as part of total intake will be beneficial."

CRN is correct that individuals in these groups have "proven nutrient needs." In fact, it is a truism that all subgroups of the population have proven nutrient needs. But these needs are taken into account by the scientists who determine the RDA! Here is my analysis of each of the groups listed in CRN's flyer:

- *People taking prescription drug(s): 125 million.*

Although certain drugs are known to increase the requirements for specific vitamins, it is improper to assume that drugs automatically increase nutrient requirements. Problems are most often associated with consumption of marginal diets—and with prolonged use of drugs that cause malabsorption or metabolic impairment. It is important to identify drug-nutrient interactions that can create clinical problems. Individuals taking such drugs need a recommendation from a physician for the appropriate extra amount of any specific nutrient that is needed. General supplementation is not a rational approach because only the nutrient(s) that will correct the problem will be of any value.

- *Dieters: 95.4 million.* Certainly dieters who are consuming less than 1,200 calories per day should consider whether the total amount of food they consume will provide adequate amounts of all of the essential nutrients they require. Many dieters do not consume such low amounts of calories and, if they do, they usually do so for only a short period of time. If caloric intakes are reduced below 1,000 calories a day for longer

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than one week, it is probably wise to take a standard one-a-day vitamin-mineral supplement. However, such low-calorie dieting should be done under supervision of a physician with the appropriate supplement being provided as part of the overall diet plan.

- *Premenopausal women of childbearing age: 55 million.* Premenopausal women of childbearing age are part of the population of normal healthy individuals. The RDA for healthy adult women are based on their needs. Many of these women need education about appropriate food use, but if they are eating wisely they should not need supplements except during pregnancy when they may not eat enough total food to build up adequate iron stores. A standard iron supplement is commonly recommended during pregnancy, as are additional milk and milk products to ensure that the RDA for calcium will be met.

- *Smokers: 54 million.* There has been much emphasis on the fact that vitamin C levels in the blood of smokers are lower than those of nonsmokers. However, the suggestion that smokers need high doses of vitamin C seems incongruous when one considers that most of the subjects used in the major experiments that served as the basis for present RDA for vitamin C allowances were reported to be smokers. It would seem much more appropriate to suggest that nonsmokers need less than the RDA. Moreover, smoking is so devastating to health that even if vitamin C did offer slight protection against its ravages, it would be senseless to encourage smokers to believe that they can avoid the consequences of smoking through nutritional measures!

- *People with specific gastrointestinal disorders: 40 million.* Most gastrointestinal disorders last only a few days and require no special nutrient supplements. For chronic or prolonged gastrointestinal disorders, management by a physician is essential and emphasis should be placed on identifying the cause and curing the condition. Supplements may be desirable while nutrient loss is occurring but should be done under medical supervision. In malabsorptive diseases—where absorption of specific vitamins is impaired—specific supplementation is advisable until the condition can be brought under control.

- *Postmenopausal women: 39 million.* The major change in nutrient needs of healthy postmenopausal women is reduced energy requirement. From age 50 on, caloric needs decline steadily while the need for essential nutrients remains the same. The best way to obtain these nutrients while eating less is to select a large proportion of foods that are rich in essential nutrients. It is also wise for postmenopausal women to maintain and possibly increase their physical activity. This will also help prevent loss of calcium from their bones and will decrease their chances of becoming overweight.

- *The elderly: 28 million.* The active elderly who are healthy have no special needs beyond those covered

by the RDA. (Of course, the above comments about declining energy needs and the desirability of increased physical activity apply to the elderly generally.) The elderly who are ill, and a substantial proportion are, need medical advice and not a general recommendation for a nutrient supplement. The older elderly may have unusually low caloric requirements because of low activity as well as low metabolic rate. Here again, attention should be given to maintaining an adequate intake of foods that are highly nutritious. In some circumstances, food intake may be so low that a supplement becomes appropriate.

- *Women taking postmenopausal estrogen: 2.3 million.* Women taking postmenopausal estrogens should be no different from the normal healthy elderly. They should maintain calcium intake in the RDA range because the beneficial effect from estrogens on osteoporosis has been shown most clearly when calcium intake is in that range or somewhat higher.

- *People with osteoporosis: 20 million.* There is no evidence that individuals with osteoporosis have any general need for nutrient supplements. Even the evidence of benefits from high intakes of calcium is inconsistent and controversial. For normal bone maintenance, a calcium intake that meets the RDA is needed throughout adult life. This can be obtained from foods, especially dairy products, but dietary surveys show that many elderly women have low total food and calcium intakes. Increased physical activity will enable them to eat more without gaining weight, and tends to reduce bone mineral loss. It is unclear whether calcium supplements alone are helpful in treating osteoporosis. Combined calcium and estrogen therapy is reportedly beneficial, but of course should be done under medical guidance.

- *Poor people: 33.1 million.* The poor need a support system; they need food programs that provide them with adequate quantities of essential nutrients and energy sources. In other words, they need proper food. Supplements of essential nutrients cannot substitute for basic needs for energy sources and protein, and are expensive in relation to the income of this group of people.

- *People with chronic or infectious disease(s) or under chronic physical stress: unknown millions.* Chronic and infectious diseases generally cannot be assumed to increase nutrient needs. This is an irrational grouping in relation to nutritional requirements. Infectious diseases are individual problems and should be dealt with by appropriate medical care, not by general recommendations for increased intakes of nutrients. If a chronic or degenerative disease results in severely depressed food intake and weight loss, it may be appropriate to provide a supplement with the food during the period of debilitation.

- *Teenagers: 25.9 million.* Teenagers represent an active part of the total healthy population. Students up

to college age are usually physically active and often have caloric intakes that are quite high. They need mainly to learn how to achieve dietary balance by choosing nutritious foods and moderating intake of foods that contain small quantities of essential nutrients. They need nutrition advice, not supplements which tend to distract them from learning about sound food choices.

- *Alcoholics: 25 million.* Supplements are not a solution for alcoholism. Alcoholics need food instead of alcohol and guidance to learn how to control the problem of addiction. If food intake of an alcoholic is extremely low, severe vitamin deficiencies can develop. These need prompt clinical attention and a program of rehabilitation. Inappropriate vitamin supplements may delay the appearance of certain deficiency signs and result in medical treatment being put off until serious deterioration of vital organs has occurred.

- *Women taking estrogen for birth control: 8.8 million.* There have been reports of changes in the metabolism or blood levels of certain essential nutrients in women using birth control pills. However, claims that these provide evidence of nutritional inadequacy have not stood up to rigorous testing. Again the most important dietary advice for women using contraceptive estrogens is to maintain an adequate intake of all nutrients through appropriately balanced diets that meet the recommended allowances.

- *Strict vegetarians: 8.5 million.* I do not believe there are 8.5 million strict vegetarians in the United States. Moreover, vegetarians are often more knowledgeable about nutrition than the average person because they have organizations that offer valid nutrition advice. Most vegetarians consume eggs and dairy products and obtain adequate quantities of all nutrients including vitamin B₁₂, although some may not. For those who are strict vegetarians, a source of vitamin B₁₂ is required. It is also particularly important for vegetarians to select a wide variety of different types of fruits and vegetables and cereal grains because serious malnutrition has been found to occur in individuals who have restricted their intake to a narrow range of foods from plant sources. Supplements are not a substitute for sound diet planning.

- *Pregnant women: 3.6 million.* There are modest increases in needs for essential nutrients during pregnancy. Food consumption usually increases during gestation so the pregnant woman will be eating increased quantities of all nutrients. If food intake declines, a supplement providing about half the RDA for the vitamins most likely to be in short supply, together with iron, would not be inappropriate.

- *Lactating women: 2.16 million.* During lactation, energy needs of women increase substantially. Their increased food intake will normally compensate for the increased quantities of essential nutrients

needed for production of milk. For women who are reducing weight during lactation or who have low food intake, a standard vitamin-mineral supplement may be appropriate, but otherwise essential nutrient needs are readily met by diet.

- *Premature infants: 0.36 million.* Premature infants require medical care; their needs should be determined carefully by the physician to ensure that the essential nutrient supply is adequate. Essential nutrients are usually provided as part of the formula, not as a special supplement.

Appropriate supplementation

The most appropriate use of vitamin supplements is in conditions in which caloric intake is below 1,200 calories per day and particularly if, at the same time, requirements are increased, perhaps as the result of illness. A correctly balanced multivitamin supplement may also be appropriate for pregnant women. Supplements of vitamins A and D of appropriate potency can be justified for young infants as insurance against nutritional inadequacy. And supplementary fluoride is vital to help strengthen the teeth of children growing up in unfluoridated communities—a need that CRN does not address. I see no evidence in the scientific literature that Americans generally require vitamin supplements. Rather, they need accurate nutrition information about food and health to counter the nutrition misinformation to which we are constantly exposed.

Dr. Harper is Professor of Biochemistry and Nutritional Sciences at the University of Wisconsin. He has been chairman of the Food and Nutrition Board of the National Research Council/National Academy of Sciences from 1978 to 1982 and has served on other NRC/NAS committees involved in determining the RDA.

QUESTION BOX

Q. What is sea salt? Is it all right for a low-sodium diet?

A. Sea salt is salt derived from evaporated sea water. The only difference between it and ordinary table salt is dirt, since sea salt contains impurities from sea debris. Sea salt is promoted with the claim that table salt consists of extremely small crystals that dissolve and ionize poorly and which our bodies find hard to digest. This is untrue, since salt crystals, whether large or small, will dissolve when taken by mouth, and when dissolved must ionize. Since sea salt has the same sodium content as table salt, it is not appropriate for a low-sodium diet.

CRN: RESPONSIBLE OR IRRESPONSIBLE?

Stephen Barrett, M.D.

The Council for Responsible Nutrition (CRN), 2100 M St., N.W., Washington, DC 20037, is a trade association for manufacturers and wholesale distributors of vitamin and mineral supplements. Products manufactured by its members are sold in drugstores, supermarkets, convenience outlets, discount chains and health food stores, and are also sold through direct (person-to-person) sales.

CRN's principal purposes are: "1) to create increased public awareness of the safety and benefits of nutritional supplements by compiling and communicating authoritative information about their appropriate role in diet and health; 2) to enhance the credibility of the nutritional supplement industry, including responding to unwarranted, ill-informed criticisms; and 3) to enhance and expand CRN's institutional capabilities to serve the nutritional supplement industry internationally." Its bylaws state that "CRN is dedicated to enhancing the health of the U.S. population through responsible nutrition, including the appropriate use of nutritional supplementation."

CRN has three categories of members. Companies engaged in the manufacture, packaging or labeling of supplements are eligible for voting membership. Suppliers of services or other support to the supplement industry are eligible for associate membership, while foreign companies or affiliates of voting members can become international correspondents. Dues for voting members are based on annual sales and range from \$2,500 for companies with sales up to \$5 million to a maximum of \$25,000 for those with sales of \$50 million or more. Associate members pay \$1,500 and international correspondents pay \$1,000 per year. Currently there are 40 voting members, 10 associate members and 5 international correspondents.

Since 1982, CRN's president has been J.B. Cordero, who previously held senior positions with the Food Safety Council, the U.S. Congress Office of Technology Assessment, and the U.S. Department of State's Agency for International Development. He has a B.S. degree in government, economics and philosophy, and a master's degree in agricultural and nutrition economics. CRN's scientific and technical committee chairman is Joseph L. Kanig, Ph.D., former dean of Columbia University's College of Pharmaceutical Sciences. CRN's vice-president for communications is Bruce M. Brown, a former FDA press officer who drafted many of the agency's news releases and Talk Papers on health frauds and quackery. Annette Dickinson works part-time as

CRN's technical counselor.

CRN was formed in 1973 in response to an FDA attempt to regulate the labeling and dosage of supplement products. In 1972, after lengthy study, the agency had proposed that food products be labeled so that ingredients, nutrient content and other information would be displayed in a standard format. These provisions became regulations with little controversy and are still used today [see NF 3:41-43].

The 1972 FDA proposal also said that labeling could neither state nor imply that a balanced diet of ordinary foods cannot supply adequate amounts of nutrients. Because this struck at the heart of health food industry mythology about "nutrition insurance," the industry responded with a massive letter-writing campaign asking Congress to completely remove FDA jurisdiction over food supplements. This activity was orchestrated by the National Health Federation (NHF), a militant lobbying group, many of whose leaders had been in legal difficulty for questionable health promotions. After CRN joined the fray, it proposed legislation that was enacted in 1976 as the Proxmire Amendment to the Federal Food, Drug, and Cosmetic Act. Though not as restrictive as NHF's proposal, this law prevents the FDA from regulating food supplements unless they are inherently dangerous or are marketed with illegal claims that they can prevent or treat disease.

Most of CRN's original members were manufacturers from the "health food" side of the supplement industry. But since 1979, membership has broadened to include pharmaceutical and food manufacturers and distributors who are active in the nutritional supplement field.

CRN's code of ethics states that its members "recognize their duty to . . . ensure that consumers are provided with the accurate information they need to make informed choices" and that they "avoid making unsubstantiated or false or misleading claims for their products." CRN's members rarely make *therapeutic* claims for their products, but several of them—as well as CRN itself—have exaggerated the need for "nutrition insurance." For example:

- Cernitin America, which sells flower pollen products, has claimed that "most Americans are shamefully lacking in essential nutrients" and that "pollen is nature's most complete food."

- Neo-Life Corporation has suggested that eating "packaged foods" is like "putting used motor oil in a new car."

• Nutrilite (a division of Amway Corporation) has listed "improper food selection, poor eating habits, dislike or intolerance to certain food groups, special diets, and increased eating away-from-home" as "some of the reasons diet may be inadequate in essential vitamins and minerals."

• A Shaklee Corporation sales manual has stated: "Stress can cause the body to use up more nutrients faster. Add alcohol, birth control pills, smoking or medications that alter the unique balance in your body achieved by nature's handiwork and you may need additional nutrients."

• Hoffmann-La Roche has advertised widely that, "If your diet, like that of so many people, is coming up short, consider taking Protector Vitamin E . . . an easy, safe and inexpensive way to ensure added protection." This message is dishonest because vitamin E deficiency on a dietary basis has never been reported in an American adult.

On April 8, 1987, while four national groups were warning about unsafe supplement use [see following story], CRN issued a press release titled "Most Americans are at Nutrition Risk." This release claimed that supplements can benefit most Americans because "their normal food intake doesn't supply all Recommended Dietary Allowances (RDA) of essential nutrients, according to the most recent government surveys." The release also stated, "There is a conservative camp within today's nutrition community . . . These anti-progressives adamantly oppose moderate use of nutritional supplements, even in conjunction with dietary improvements, to optimize intake of protective nutrients. Simply put, these views are out of step—with the rest of the nutrition community, public health experts, and medical professionals."

I disagree. Most nutrition scientists, public health experts and physicians believe that: 1) dietary adequacy can be achieved with a varied and balanced diet; 2) it is easy to do so in this country; 3) most people's diets do not place them at risk for deficiency; 4) amounts over the RDA are rarely advisable; and 5) it is a waste of money to take supplements you don't need.

Having diligently collected the publications of CRN for several years, I have yet to see one suggesting how anyone can tell when supplements are *not* needed. I also find it interesting that CRN accepts the RDA as standards but rejects as "old-fashioned" or "out-of-step" the opinions of those who set them!

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

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SCIENTIFIC GROUPS WARN AGAINST VITAMIN MISUSE

The American Medical Association Council on Scientific Affairs has issued a lengthy position paper titled "Vitamin Preparations as Dietary Supplements and as Therapeutic Agents." Published in the April 10, 1987 *Journal of the American Medical Association*, it reflects the views of the scientific literature through November 1986. The report covers vitamins (not minerals) and defines dietary supplements as "preparations designed to increase the dietary intake of one or more essential vitamins," ordinarily in amounts 50% to 150% of the RDA. The report concludes:

- Sound dietary practices should eliminate any need for supplemental vitamins after infancy in essentially all healthy children.

- Healthy adult men and women and healthy nonpregnant, nonlactating women consuming a usual, varied diet do not need vitamin supplements. Infants may need dietary supplements at given times, as may women who are pregnant or are breastfeeding.

- Occasionally, vitamin supplements may be useful for people with unusual lifestyles or modified diets, including certain weight-reduction regimens and strict vegetarian diets (that exclude all foods of animal origin).

- Before deciding whether a vitamin supplement should be recommended to an adult, a history regarding the adequacy of dietary intake should be carefully evaluated and an attempt made to correct any inadequacy in food selection or eating pattern.

- Vitamins in therapeutic amounts (2-10 times the RDA) may be appropriate for the treatment of deficiency states, for pathologic conditions in which absorption and utilization of vitamins are reduced or requirements increased, and a few special situations where vitamins are used as drugs.

- Therapeutic amounts should not be used without the advice and supervision of a physician. Therapeutic vitamin mixtures should be so labeled and should not be used as dietary supplements.

- Public health nutrition will be served best by insistence on a scientifically sound basis for vitamin supplementation and therapy. All health practitioners should emphasize repeatedly that properly selected diets are the primary basis for good nutrition.

- Reprints of the report can be obtained by writing to the AMA Council on Scientific Affairs, 535 N. Dearborn St., Chicago, IL 60610.

- On April 8, four other national groups joined forces to warn Americans about the unsafe use of vitamin and mineral supplements. At a press conference in New York City, the American Dietetic Association, American Institute of Nutrition, American Society for

Clinical Nutrition and National Council Against Health Fraud issued the following joint statement covering minerals as well as vitamins:

- Healthy children and adults should obtain adequate nutrient intakes from dietary sources. Meeting nutrient needs by choosing a variety of foods in moderation, rather than by supplementation, reduces the potential risk for both nutrient deficiencies and nutrient excesses. Individual recommendations regarding supplements and diets should come from physicians and registered dietitians.

- Supplement usage may be indicated in some circumstances, including: 1) women with excessive menstrual bleeding may need to take iron supplements; 2) women who are pregnant or are breastfeeding need more of certain nutrients, especially iron, folic acid and calcium; 3) people with very low calorie intakes frequently consume diets that do not meet their needs for all nutrients; 4) some vegetarians may not be receiving adequate calcium, iron, zinc and vitamin B₁₂; and 5) newborns are commonly given, under the direction of a physician, a single dose of vitamin K to prevent abnormal bleeding.

- Certain disorders and some medications may interfere with nutrient intake, digestion, absorption, metabolism or excretion and thus change requirements.

- Nutrients are potentially toxic when ingested in sufficiently large amounts. Safe intake levels vary widely from nutrient to nutrient and may vary with the age and health of the individual. In addition, high-dosage vitamin and mineral supplements can interfere with the normal metabolism of other nutrients and with the therapeutic effects of certain drugs.

- The Recommended Dietary Allowances represent the best currently available assessment of safe and adequate intakes, and serve as the basis for the U.S. Recommended Daily Allowances shown on many product labels. [The USRDA are based mainly on the 1968 RDA.] There are no demonstrated benefits of self-supplementation beyond these allowances.

- The joint statement was developed during the past year by an 11-person task force assembled by the American Dietetic Association. The AMA Council on Scientific Affairs has reviewed the statement and considers it consistent with its own. The press conference was sponsored by the National Dairy Board and National Dairy Council, which last May sponsored a conference on the potential problems of vitamin megadosage. The FDA has urged physicians to report cases of toxicity through its Adverse Reaction Monitoring System, which keeps track of information on adverse drug reactions.

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COMMON MISCONCEPTIONS ABOUT QUACKERY

Stephen Barrett, M.D.

Although most Americans are harmed by quackery, few perceive it as a serious problem and even fewer are interested in trying to do anything about it. As a psychiatrist, I have been trained to look for hidden reasons why people act the way they do—especially when they fail to avoid trouble. Applying this technique to quackery, I have identified 17 misconceptions which I believe contribute to this situation:

- *Misconception #1: Quackery is easy to spot.* Quackery is far more difficult to spot than most people realize. Modern promoters use scientific jargon which can fool people not familiar with the concepts being discussed. Even health professionals can have difficulty in separating fact from fiction in fields unrelated to their expertise.

- *Misconception #2: Personal experience is the best way to tell whether something works.* When you feel better after having used a product or procedure, it is natural to give credit to whatever you have done. This can be misleading, however, because most ailments resolve themselves and those that don't can have variable symptoms. Even serious conditions can have sufficient day-to-day variation to enable quack methods to gain large followings. The Freireich Experimental Plan described in the next article explains how this works. In addition, taking action often produces temporary relief of symptoms (a placebo effect). For these reasons, scientific experimentation is usually necessary to establish whether health methods are actually effective.

- *Misconception #3: Most victims of quackery are gullible.* Gullibility implies a wish for magic. Individuals who buy one diet book or "magic" diet pill after another are indeed gullible. And so are many people who follow whatever fads are in vogue. But the majority of quackery's victims are merely unsuspecting. People tend to believe what they hear the most. And quack ideas—particularly regarding nutrition—are everywhere. Another large group of quackery's victims is composed of individuals who have serious or chronic diseases which make them feel desperate enough to try

anything that offers hope. Alienated people—many of whom are paranoid—form another victim group. These people tend to believe that our food supply is unsafe, that drugs do more harm than good, and that doctors, drug companies, large food companies and government agencies are not interested in protecting the public. Such beliefs make them vulnerable to those who offer foods and healing approaches alleged to be "natural."

- *Misconception #4: Quackery's victims deserve what they get.* This is based on the idea that people who are gullible should "know better" and therefore deserve whatever they get. This feeling is a major reason why journalists, enforcement officials, judges and legislators seldom give priority to combatting quackery. Even doctors asked to testify as expert witnesses in quackery cases often refuse to do so because they have no sympathy for the victims. As noted above, however, most victims are not gullible. Nor do people deserve to suffer or die because of ignorance or desperation.

- *Misconception #5: Quacks are frauds and crooks.* Quackery is often discussed as though all of its promoters are engaged in deliberate deception. This is untrue. Promoters of mail-order quackery are almost always hit-and-run artists who know their products are fakes but hope to profit before the Postal Service shuts them down. But most other promoters of quackery sincerely believe in what they do. The FDA defines "health fraud" as "promotion of an unproven product for profit." This also causes confusion because in ordinary usage—and in the courts—the word "fraud" connotes deliberate deception.

- *Misconception #6: Most quackery is promoted by quacks.* Most people think of quackery as being promoted by quacks, charlatans, or others who are deliberately taking advantage of others. Actually, most quackery is promoted by victims of quackery who share their misinformation and personal experiences with others. Many customers of multilevel companies that sell overpriced vitamin supplements are friends, relatives and neighbors of those already using them. Quack-

ery is involved, but no "quacks." Pharmacists also profit from the sale of nutrition supplements which few of their customers need. In most cases pharmacists don't promote them but simply profit from the propaganda of others. Much quackery is involved in telling people something is bad for them (such as food additives) and selling them a substitute (such as "organic" or "natural" food). Quackery is also involved in misleading advertising of nutrition supplements and other nonprescription drugs. Again, no "quack" is involved—just hype from an advertising agency.

To make matters even more complicated, quackery is not all-or-nothing. A practitioner may be scientific in many respects and only minimally involved in unscientific practices. And products can be useful for some purposes but worthless for others.

Dictionaries define quackery as "the practices or pretensions of a quack" and define quack as "a pretender to medical skill." I think it is better to define quackery as "anything with false claims in the field of health." This covers the broadest possible spectrum of quackery and avoids implying that its promoters intend to deceive.

- *Misconception #7: Most quackery is dangerous.* Quackery can seriously harm or kill people by inducing them to abandon or delay effective treatment for serious conditions. Although the number of people harmed in this manner cannot be determined, it is not large enough or obvious enough to arouse a general public outcry. Most victims of quackery are harmed economically rather than physically. Moreover, many people believe that an unscientific method has helped them. In most cases, they have confused cause-and-effect and coincidence. But sometimes an unproven approach actually relieves emotionally related symptoms by lowering the person's tension level.

Statements condemning quackery rarely arouse indignation in people who have not been personally affected. Thus it is probably unrealistic to believe that opposition to quackery will become a high priority issue for the general public. It is perceived as a serious problem by professionals who are offended by the audacity of quacks who defile science and hurt the public. But most professionals feel too busy to get involved.

- *Misconception #8: "Minor" forms of quackery are harmless.* Quackery involving small sums of money

THE FREIREICH EXPERIMENTAL PLAN

The following tongue-in-cheek plan was devised by Emil J Freireich, M.D., of the M.D. Anderson Hospital and Tumor Institute, Houston, Texas. It assures that when proper research methods are not used, any remedy with no obviously harmful side effects can be "proven" effective for virtually all patients with serious disease. Note that "proof" is most evident when the disease has ups and downs—which almost all conditions have at one time or another—but that no possible outcome can disprove effectiveness:

Treatment should be applied only after a period when the disease has been getting progressively worse. If improvement occurs or the condition stabilizes, the treatment is obviously responsible. If the condition continues to worsen, either the dosage needs increasing or the duration of treatment has been too short to produce results. If the patient dies, it is because the treatment was applied too late.

After doing the above, the only remaining patients are those whose disease has either stabilized or worsened after the initial therapy. In all of these patients, either increase the dosage or continue the treatment. Again, improvement or stabilization proves that the treatment is effective, while worsening means that higher dosage or longer duration is needed. Since the treatment is harmless, the dose can be raised as often as necessary.

If this process is repeated enough, all patients will either stabilize or die. Since those who die came too late, their results don't count. This means that all patients who live will wind up in the category of showing improvement.

Of course, if the remedy is really worthless, all periods of temporary improvement will be followed by recurrence of disease. Therefore, once improvement occurs, it is crucial to stop the treatment or lower the dosage before worsening occurs. Then if the disease remains stable or gets worse, stopping the treatment can be blamed. Treatment should then be resumed at the initial dosage, and the cycle repeated as often as necessary. Of course, if the patient does well after treatment is stopped, this also confirms that the treatment was effective.

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and no physical harm is often viewed as harmless. Examples are "nutrition insurance" with vitamin pills and wearing a copper bracelet for arthritis. But their use indicates confusion on the part of the user and vulnerability to more serious forms of quackery. There is also harm to society. Money wasted on quackery would be better spent for research, but much of it goes into the pockets of people (such as vitamin pushers) who are spreading misinformation and trying to weaken consumer protection laws.

The Feingold diet is an example of quackery whose potential harm is underestimated. Although the diet itself is harmless, it is probably harmful to teach children that the way they behave depends upon what they eat rather than on what they feel. Also, social development can be jeopardized if eating habits subject children to ridicule or lead them to avoid group activities where forbidden foods are served.

- *Misconception #9: The media are reliable.* Most people seem to think that statements about health issues "wouldn't be allowed" if they weren't true. Some media outlets—most notably *Consumer Reports* magazine—do achieve great accuracy. But most are willing to publish sensational viewpoints which they believe are newsworthy and will increase their audience. Even exposés on questionable methods are often "balanced" by including testimonials from satisfied customers. Money can also affect the flow of health information. General magazines which carry vitamin ads almost never publish articles advising readers not to waste their money on vitamins. Radio and television talk shows abound with promoters of nutrition quackery. Some promoters have their own publications and a few even have their own radio or TV talk shows.

- *Misconception #10: Advertising outlets are ethical.* There is a widespread public belief that if something isn't legitimate, publications and broadcast outlets would not allow it to be advertised. While most outlets have some limitations, most do not limit ads for health products. Standards are quite variable. All bust developers, penis enlargers, sexual enhancers, sauna belts, sauna suits, spot reducers are fakes. But their promoters have little difficulty in obtaining advertising outlets. Publishers and advertising managers sometimes claim they have no practical way to determine whether proposed ads are legitimate and that they must protect freedom of speech. Both positions are baloney. Ads can be checked quickly and easily by consulting a trusted authority; and freedom of speech does not include a right to defraud people.

- *Misconception #11: Education is the answer.* Education can help unsuspecting people learn to recognize quackery. However, those who are desperate, gullible or alienated may be difficult if not impossible to educate. Law enforcement is necessary to protect them.

- *Misconception #12: Government protects us.* Al-

though various government agencies are involved in fighting quackery, most don't give it sufficient priority to be effective. Moreover, the agencies involved do not have a coordinated plan to maximize their effectiveness.

The Postal Service has jurisdiction over misrepresentations that involve the mail. It operates a very aggressive program against mail fraud and can use administrative procedures to stop mail to the perpetrators of a scheme. For many years the Postal Service operated under weak laws which made it easy for those who were stopped to begin anew with a new ad, new product or a new company name. But the Mail-Order Consumer Protection Amendments Act of 1983 now enables the agency to seek penalties of \$10,000/day against repeat offenders. I believe that mail-order quackery is decreasing as a result and will eventually be a minor problem.

The Federal Trade Commission (FTC) has jurisdiction over false advertising of health products and services except for prescription drugs. It has a very powerful law which can result in stopping offenders and assessing huge penalties. However, the agency has taken little interest in quackery. It has prosecuted only a few quackery cases and often takes years to complete its investigations.

The U.S. Food and Drug Administration (FDA) has jurisdiction over food and drug product labels. Any written or oral claim made in the context of a sale is considered part of labeling, and therapeutic claims must be approved prior to marketing. This means the agency doesn't have to prove that quack products don't work in order to remove them from the marketplace. It merely has to show that claims made for them lack FDA approval. When a violation is detected, the agency can issue a warning letter, initiate a seizure of the illegally marketed product, seek an injunction against its sale, or initiate criminal prosecution.

Although the FDA's power is enormous, it has not been applied systematically against quackery. Many violations are ignored, warning letters are sometimes delayed for years, few seizures are made, and few injunctions are sought. Worst of all, since 1963 the FDA has initiated only two criminal prosecutions involving quack products [see NF 1:1-2].

The FDA claims that it lacks the manpower for a more effective program, that criminal prosecutions are too costly, and that the Justice Department is reluctant to prosecute quackery cases. Even if these claims are true—which I doubt—they do not explain why warning letters are issued months or years after the FDA detects violations. Nor does it explain why high-ranking FDA officials keep telling the public all about the agency's antiquackery options without revealing how little they are used.

The FDA does have an outstanding educational program against quackery. During the past three years it has disseminated valuable information to the media,

networked with many voluntary groups, and sponsored important health fraud conferences throughout the country [see NF 2:9-10 and 2:85].

State attorneys-general have jurisdiction over problems within their own states. Action within a single state can sometimes stop a nationally promoted fraud, but sometimes promoters will start anew in another state. New York and California have been most active against quackery [see NF 4:24]. Many states have weak laws that make enforcement action against quackery difficult. It would help if state attorneys-general coordinated their antiquackery activities and developed a central strategy. It would also help if a law were passed to enable them to sue in federal court for injunctions that would have national effect. Federal legislation of this type has been introduced but has not been passed [see NF 2:71].

Much quackery takes place in private between retailers and their customers. Although this could be decreased with appropriate prosecution, such prosecution is not popular with enforcement agencies because it requires undercover work and involves attacks on "ordinary" people, approaches which might not have widespread public support.

State licensing boards, which have jurisdiction over licensed practitioners, seldom take action against those who use unscientific methods.

- *Misconception #13: Quackery's success represents medicine's failure.* It is often suggested that people turn to quacks when doctors are brusque with them, and that if doctors were more attentive, their patients would not turn to quacks. It is true that this sometimes happens, but most quackery does not involve medical care. I recommend that doctors pay attention to the emotions of their patients and make a special effort to explain things to them. But blaming medicine for quackery is like considering the success of astrology the fault of astronomy. Some people have needs that exceed what legitimate medical practice can provide.

- *Misconception #14: Quackery is medicine's responsibility.* Many people think that medical doctors have: 1) special ability to recognize quackery; 2) special ability to combat it; and 3) a special duty to do so. It is true that medical training enables most doctors to identify quackery readily. (Unfortunately, a small percentage are quacks.) But it is clear that the medical profession cannot do the job alone. Effective control of quackery will require concerted effort by educators, writers, editors, publishers, advertising managers, talk show producers, legislators, law enforcement officials, and defrauded victims.

- *Misconception #15: The AMA has the power to stop quackery.* Many people (including some physicians) seem to think that the American Medical Association has some magical power to stop quackery. In fact, the quacks often accuse the AMA of "conspiring to

destroy alternative medicine" even though it is minimally involved. For many years the AMA maintained a department which was active against many types of quackery. But in 1975 it was shut down, and so was the AMA's quackery committee. Quacks cry "conspiracy" in an attempt to gain support by portraying themselves as underdogs.

- *Misconception #16: Fighting quackery is hopeless.* It is often reasoned that: 1) most victims of quackery are gullible; 2) gullible people can't be protected from their own follies; and therefore 3) quackery cannot be controlled. This reasoning has two flaws. First, as explained above, most victims of quackery are not gullible. Second, effective law enforcement can limit quackery's toll.

Alienated individuals who are "true believers" in quack methods can also arouse the feeling that fighting quackery is hopeless. These individuals are usually hopeless, but they constitute only a small proportion of quackery's victims. Effective law enforcement can protect many of them too. The best strategy for professionals confronted by "true believers" is to avoid wasting time with them.

Quackery's persistence causes many people to feel there is no point in trying to combat it. I disagree. Think about death and disease. No matter how much disease is cured, death still comes. But no one suggests that we stop fighting disease. Our goal should be to limit quackery as much as possible. Although the problem can never be eradicated, it can be greatly reduced if more people work on it.

- *Misconception #17: Fighting quackery is risky.* Many people inclined to do something about quackery are afraid they will get hurt by controversy or lawsuits. There are two reasons why these fears are unjustified. First, those who wish to avoid controversy can still take effective private actions like joining an antiquackery group, reporting frauds to law enforcement agencies, and telephoning editors to complain about misinformation in their publications. Second, libel suits are extremely rare and can be avoided by common sense: attack questionable ideas, and don't call anyone a "fraud" or a "quack."

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

COMING SOON
Lendon Smith Loses License!
AIDS Quackery

ANTIQUACKERY GROUP GROWING

The National Council Against Health Fraud, Inc., now has more than 2,100 members and chapters in 13 states. Organized in 1977 as the Southern California Council Against Health Fraud, the group became national in 1984. Its purposes are to: 1) conduct studies and investigations to evaluate claims made for health products and services; 2) educate the public, professionals, legislators, business people, organizations and agencies about untruths and deceptions; 3) provide a center for communication between individuals and organizations concerned about health misinformation, fraud and quackery; 4) support sound consumer health laws and oppose legislation which undermines consumer rights; and 5) encourage and aid in legal actions against consumer health protection law violators.

NCAHF's founder and president is William T. Jarvis, Ph.D., who is Professor of Health Education at Loma Linda University. Six of its board members belong also to *Nutrition Forum's* editorial board. The Council's cur-

rent activities include a speaker's bureau, a media clearinghouse, consumer complaint referral services, legislative advisement, expert testimony, law enforcement assistance, research on unproven methods of health care, and seminars for professionals and the general public. The Council also appoints task forces that conduct extensive investigations and issue position papers.

Membership in NCAHF is open to anyone who supports its beliefs and purposes. Regular membership costs \$15, and professional membership is \$25. Donations are tax-deductible. Members receive a bimonthly newsletter, ready access to printed information on more than 100 topics, and discounts on antiquackery publications. NCAHF's address is P.O. Box 1276, Loma Linda, CA 92354. (Telephone: 714-796-3067) Chapters exist in Arizona, Florida, Illinois, Iowa, Kentucky, Ohio, Michigan, Minnesota, New York, Oregon, Texas, Washington and Wisconsin.

BOOK REVIEW

Title: Contemporary Clinical Nutrition—a Conspectus (1986)

Editor: John J. Cunningham, Ph.D.

Publisher: George F. Stickley Company, 210 W. Washington Square, Philadelphia, PA 19106

Price: \$19.95

Reviewed by: Denice Ferko-Adams, R.D.

This is a valuable 288-page collection of 43 reprints from 22 scientific journals, including *The American Journal of Clinical Nutrition*, *Journal of the American Dietetic Association*, *Journal of the American Medical Association* and *The New England Journal of Medicine*. Suitable for health and nutrition professionals, the articles are organized into two sections and nine subtopics, each preceded by a well written, referenced overview by Dr. Cunningham.

Section I covers the nutritional needs of infants, children, adults and the elderly, with topics including the use of whole milk in infancy and how vitamin D

deficiency affects the development of osteomalacia in the aged. Section II covers the role of diet and nutrition in heart disease, obesity, cancer, carbohydrate metabolism, hypertension, alcoholism, and appetite regulation. Exemplary topics in this section include lactase deficiency, very-low-calorie diets, coffee and cancer, and potassium for hypertension.

The articles were originally published between 1981 and 1984, with most from the latter half of that period. Since nutrition recommendations change rapidly, periodic updates by Dr. Cunningham would be valuable.

Ms. Ferko-Adams is a nutrition consultant in private practice in Allentown, Pennsylvania. She also consults for the YWCA and a Dairy Council affiliate, and is Secretary for Consulting Nutritionists, a Dietetic Practice Group of the American Dietetic Association. In 1986 she won the ADA's Recognized Young Dietitian for the Year award.

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BRIEFS

Antiquackery handbook. A team of California physicians, dietitians and government officials and their respective organizations has produced an outstanding 33-page handbook called *The Professional's Guide to Health and Nutrition Fraud*. Its topics include indentifying quackery, insights into food faddism, counseling of health fraud victims, antiquackery actions, interested agencies, and publications. Single copies are available for \$7.50 from Sutter Publications, California Medical Association, P.O. Box 7690, San Francisco, CA 94120.

New publication. *Nutrition Clinics*, edited by Eleanor N. Whitney, Ph.D., R.D., began publication in June 1986. Each issue covers one topic in 14-30 pages, with references. The first five topics have been Nutrition and Cancer, Diet and Heart Disease, Diet Planning for the Vegetarian, Hypoglycemia and Nonhypoglycemia, and Nutrition and Behavior. Subscriptions are \$24/year (six issues) from the George F. Stickley Co., 210 W. Washington Sq., Philadelphia, PA 19106. Single copies are \$5.00 plus 50¢ postage.

Multivitamin survey. Two New Haven dietitians who surveyed five pharmacies, three groceries and three health food stores have concluded that most of their multivitamin products were irrationally formulated [*Journal of the American Dietetic Association* 87:341-343]. Most people using these products are seeking "nutrition insurance." For this reason, products were considered appropriate if they contained amounts the authors consider suitable for this purpose: 50-200% of the U.S. RDA for the vitamins and minerals for which U.S. RDAs are available, and no more than 100% of others for which Estimated Safe and Adequate Daily Dietary Intakes have been suggested. The authors rated 29 multivitamins (31% judged appropriate), 105 multivitamin/mineral preparations (15% appropriate), 27 stress formulas (none appropriate), 50 B-complex preparations (none appropriate), 40 children's supplements (half appropriate), and 6 prenatal supplements (half appropriate). Most products judged inappropriate had too much of some vitamins and not enough of others. *Editor's note: I would have classified any product with more than 100% of the U.S. RDA as irrational. It would be interesting to compare the percentage of inappropriate products in pharmacies and health food stores.*

News about obesity. The *International Obesity Newsletter*, edited by Francie M. Berg, M.S., and Nancy L. Grade, R.D., interprets obesity research from scientific journals and reports on conferences, books and weight-loss programs. It is written primarily for health and nutrition professionals. Introductory subscriptions are \$24 per year (10 issues) from the Healthy Living Institute, Box 612, Hettinger, ND 58639. Ms. Berg, who also writes a newspaper column, has asked her readers to report any trouble they have had with weight-loss schemes.

Notable quote: "Dentists are victims of their own success. They've been able almost to eliminate dental cavities through fluoridation of the water and better dental care."—John F. Griffith, Georgetown University's executive vice-president for health sciences, explaining to a *Washington Post* reporter why Georgetown's dental school (the nation's second largest) is closing because of a shortage of qualified applicants. Nationwide, a surplus of practicing dentists has led to a 28% drop in first-year dental students.

Media resource center. The Scientists' Institute for Public Information, 355 Lexington Ave., New York, NY 10017, maintains a computerized list of 20,000 experts in science, technology and medicine who have volunteered to help journalists. Members of the working press can be referred for help by calling 1-800-223-1730 (212-661-9110 in New York State). The Institute averages more than 50 calls a week, one-third of which concern health and medical topics.

Calories and cancer. Although overnutrition is known to be a risk factor for cancer, the way in which this works is unclear. In February 1986, the International Life Sciences Institute sponsored a symposium to discuss research on the relationships between caloric intake, dietary fat, energy expenditure, hormones, body weight, and cancer development. A 372-page compendium of the papers presented at this meeting is now available for \$10 from *The American Journal of Clinical Nutrition*, 428 E. Preston St., Baltimore, MD 21202. (Ask for Supplement Volume 45, Number 1.)

Supplement flyer. The American Dietetic Association, 430 N. Michigan Ave., Chicago, IL 60611, has published a new flyer about food choices and supplement misconceptions called "Alphabet Soup: Nutrients from Food and Supplements." Single copies are available for \$1 plus a self-addressed, stamped, 4" x 9½" envelope.

Orange juice taste. Manuel Moshonas, a U.S. Department of Agriculture chemist, has used gas chromatography to isolate what he calls the "flavor code" of fresh orange juice: a unique blend of some 21 chemicals that give fresh orange juice its special tang. Currently, freezing and concentrating adversely affect flavor by upsetting this chemical balance. Moshonas hopes that citrus processors can modify their methods to produce processed orange juice with a nearly-fresh taste.

Nutrition status of problem drinkers. A Finnish study which compared 26 employed men who drank excessively with 49 men who did not found that the drinkers consumed more calories, but otherwise had similar diets [*American Journal of Clinical Nutrition* 45:456-61, 1987]. The drinkers weighed less, but had more body fat. Gross nutritional deficiencies were not found, but there were some subtle differences between the two groups which the authors believe should be studied further.

Protein development lagging. Many researchers have hoped that inexpensive protein sources could be developed to help the world food supply keep pace with population increases. During the past 20 years, much attention has been paid to such high-protein sources as bacteria, yeast, molds, algae, leaves, soybeans, cottonseed and peanuts. According to an article in the February 1986 University of Guelph *Notes on Agriculture*, however, two factors have slowed progress: 1) strict safety requirements make it difficult to gain approval for "new" sources; and 2) production costs have been higher than expected. Soybeans appear to be most promising because regulatory problems are minimal and soy flour can be produced very inexpensively. In this form it is suitable for animal feed, but the additional processing needed to produce human foods such as tofu (soy curd) or hamburger substitute raises the cost to that of ground beef. The article's author predicts that plant proteins will play a greater role in the food supply as people become more interested in lowering the fat content of their diet and scientists find better ways to convert them into acceptable foods.

Health food advocate dies. Betty Lee Morales, a major promoter of questionable health and nutrition methods, died March 27 at age 80 of an apparent heart attack. She marketed food supplements and was founder-president of the Cancer Control Society and a board member of the National Health Federation, groups that promote unproven methods of cancer treatment.

QUESTION BOX

Q. Why are cucumbers waxed? When is the wax applied? What kind is used? Is it edible?

A. Cucumbers and about 15 other vegetables and fruits are waxed for two reasons: 1) to improve appearance and consumer acceptance and 2) to preserve freshness by inhibiting the evaporation of moisture. Although many fruits and vegetables have a natural waxy layer on their surface which seals in moisture, this coating is often lost when produce is washed to remove soil, filth, and pesticide residues. Replacing the natural wax with a commercial one prevents shriveling and wilting of produce due to transpiration, the postharvest loss of water. Packers usually apply the wax before shipping their produce to supermarkets. Waxing is especially useful to prevent moisture loss from slightly injured products. American packers have been using waxes for more than 50 years, but the practice originally dates back to 13th century China.

The FDA has approved a variety of wax compounds for fresh produce. Carnauba wax, derived from palm leaves, and candelilla wax, which comes from a reed-like plant, are commonly used. Others include paraffin (a petroleum derivative), polyethylene (a synthetic made from petroleum products), shellac (derived from insects), sucrose-fatty acid ester (derived from tallow), and oleic acid (usually derived from tallow). The waxes are mixed with water and wetting agents to form an emulsion which provides a thin continuous coating after application by dipping or spraying.

All waxes authorized by FDA for use on food have been tested and are considered safe even if ingested in the daily diet. They are not on the GRAS (generally recognized as safe) list, but are authorized by specific regulations. Although edible, only small amounts are likely to be consumed. Very little wax is used, as one pound covers thousands of pieces of produce, and most people wash or peel fruits and vegetables before eating them.

"RASPBERRY TEA"

Varro E. Tyler, Ph.D.
Michael J. Pcolinski, B.S. Pharm.
Jerry L. McLaughlin, Ph.D.

Among herb enthusiasts, tea prepared from the leaves of the raspberry plant (*Rubus idaeus* L.) has acquired a considerable reputation as "the drink" for expectant mothers. In the popular literature it is praised as a "panacea during pregnancy" and said to do "everything from allaying morning sickness to preventing miscarriage to easing labor pains." Even such a reliable reference as the 28th (1982) edition of Martindale's *The Extra Pharmacopoeia* credits it as a "traditional remedy for painful and profuse menstruation and for use before and during confinement."

Whether raspberry leaf tea can actually help such conditions is not known. Adequate clinical studies of its physiological properties have never been carried out, and the existing chemical analyses have revealed only the presence of relatively common constituents such as tannins, plant acids, flavones and vitamin C. These compounds probably account for the astringent, bitter taste of raspberry leaf tea which some consumers find closely resembles that of ordinary black tea.

Raspberry leaves possess neither the pleasant taste nor the highly aromatic odor of raspberry fruits. Therefore, our curiosity was aroused when we acquired a tea sample which had a strong raspberry odor. Simply labeled "Raspberry," it had been packaged by the Westerley Coffee, Tea & Spice House of Tiburon, California. The product appeared to consist mostly of black leaf fragments which looked like ordinary black tea, plus a much smaller number of tiny particles of green leaves. We suspected that this was a black tea to which a small amount of raspberry leaves had been added, and the mixture was then strongly flavored by adding a volatile oil which smelled like raspberry fruits.

This assumption was verified by examining 2 grams of the mixture for caffeine, using the method described by Tyler and Schwarting in the third edition of *Experimental Pharmacognosy* [Burgess Publishing Co., Minneapolis, 1962]. This procedure yielded 14.07 mg. of a white crystalline solid which, on the basis of its melting point, co-chromatography and infrared spectrometry, was proven to be caffeine. The calculated yield was 0.7%, a figure near the lower portion of the 1-4% range of caffeine found in common black tea. We concluded that the "Raspberry" tea consisted primarily of ordinary black tea flavored with essence of raspberry

fruit but did not contain an appreciable quantity of raspberry leaves.

At least one other tea capitalizes on the popularity of the raspberry name: "Raspberry Patch," marketed by Celestial Seasonings, Inc., of Boulder, Colorado. The list of ingredients on its label does not include raspberry leaves. Dried raspberry fruits are present, but they are listed as a minor ingredient after hibiscus flowers, rose hips, orange peel, and roasted chicory root. Any expected benefits of raspberry leaves would not be obtained from this product.

Tea made from the leaves of the blackberry plant (*Rubus fruticosus* L.) is considered to produce effects similar to those of raspberry tea. Therefore, we also inspected a package of "Blackberry Tea," marketed by Thomas J. Lipton, Inc., of Englewood Cliffs, New Jersey, to see if it contained any quantity of the leaves. According to its ingredient statement, the product contains neither blackberry leaves nor fruit. Instead, it is composed of orange pekoe and pekoe cut black tea and natural flavors. In other words, it is simply black tea to which blackberry fruit flavoring has been added.

This kind of inexact labeling of herbal teas is very common. Although federal laws require that ingredients be correctly listed on product labels, the names by which products are marketed do not necessarily reflect what they contain. Quality control within the herbal products industry is often not good, and some herbal products are potentially toxic. For all of these reasons, it is unwise to use herbal products without an understanding of their ingredients—which, as the above examples indicate, cannot necessarily be gathered from product names.

Dr. Tyler, Dean of Purdue University's Schools of Pharmacy, Nursing, and Health Sciences, is an expert in pharmacognosy (the science of medicines from natural sources) and author of *The Honest Herbal*, an evaluation of popular herbs published by the George F. Stickley Co. Dr. McLaughlin is Professor of Pharmacognosy in Purdue's Department of Medicinal Chemistry and Pharmacognosy. Mr. Pcolinski, a recent Purdue graduate, is currently studying at Ohio State University.

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FIGHTING QUACKERY: TIPS FOR ACTIVISTS

Stephen Barrett, M.D.

The crucial step in fighting quackery is to overcome any negative feelings about becoming involved. So before discussing techniques, let's look at the concerns faced by would-be activists.

Almost everyone who thinks about fighting quackery experiences some fear of being sued for libel or slander. The fact is, however, that no one who understands the law and follows commonsense rules faces any significant risk. To be libelous, a statement must be *defamatory, malicious and false*, and must appear in print. Slander is similar, but applies to oral claims and requires proof of actual damages. A defamatory statement is one that accuses someone of being dishonest, criminal, or professionally incompetent. Malicious (done with malice) means done for an improper reason or with knowledge that the statement is false. It is possible for a statement to be false but not defamatory. In any case, truth is a complete defense against libel and slander. It is possible to defame an individual, a small group of individuals, or an organization. But one cannot defame a large class of individuals (such as "all doctors") or an entire industry.

Avoid name-calling

It is never libelous to criticize an *idea*. Therefore it is safe to attack ideas or to list ideas characteristic of quackery. It is legal to mention adverse facts—such as criminal convictions or dubious credentials—about people who place themselves in the public spotlight by claiming to have expert knowledge. But avoid statements about motivation (such as "He's only in it for the money") because they may be impossible to prove. The appearance of malice can usually be avoided by investigating carefully and citing reliable sources of information. Also avoid name-calling. Above all, never call anyone a name (like "quack," "crook" or "fraud") unless you are willing to defend this claim in court.

It should be apparent from the above discussion

that antiquackery actions based on facts and done for legitimate reasons cannot provide the grounds for a successful libel suit. But what about suits whose purpose is intimidation? The National Nutritional Foods Association (NNFA) and some of its leaders tried this approach with Fredrick J. Stare, M.D., Ph.D., Emeritus Professor of Nutrition, Harvard School of Public Health, and Elizabeth M. Whelan, Sc.D., M.P.H., Executive Director of the American Council on Science and Health. Filed in 1979, NNFA's suit charged them with "recklessly, maliciously and knowingly disseminating false and defamatory remarks with respect to plaintiffs and the health food industry" through books and published articles.

It was obvious that the plaintiffs would lose in court. Their names had not even been mentioned in the publications to which they objected. In 1980 the suit was dismissed by a federal judge who warned that "any further suit by plaintiffs against critics of the health food industry should be scrutinized carefully to determine whether it was brought in good faith." (In other words, plaintiffs would be held responsible for defendants' legal bills.)

The suit was actually part of an announced effort to silence critics of the health food industry. Very few such suits have been filed, and all have been against leading critics. As far as I know, none has ever been filed against a critic of quackery who was not nationally prominent unless he called someone a quack. Thus it is very unlikely that anyone who sticks to facts and does not engage in name-calling will be unjustly sued for libel.

Of course, if it makes you more comfortable, you can avoid criticisms of individuals altogether. Just criticize ideas that you disagree with and provide the correct information. For additional safety, you can use the word "questionable" (e.g., "That idea is certainly questionable"), which is not defamatory.

Some people fear that taking a stand against

quackery will embroil them in unpleasant public controversy. That certainly can happen, but many effective actions require no public exposure at all. For example, you can: 1) offer background information to a reporter with a request that you not be quoted; 2) send letters to the media marked "not for publication"; 3) complain about false advertising to appropriate agencies; 4) encourage victims of quackery to file lawsuits; and 5) contact legislators and encourage others to do this too. All of these things can be done privately and without risk.

Lack of confidence can also interfere with taking action. Non-experts often feel that only experts can be effective. Even experts may hesitate when they aren't

sure what action would be most effective. However, although expert knowledge is helpful, the number of people taking action is often more important than the nature of what they do. Moreover, many antiquackery actions require no expertise.

Fighting quackery can be very time-consuming. But keep in mind that many actions (such as reporting illegal ads) take only a few minutes.

Dealing with the media

Much can be done to counter the spread of misinformation through talk shows and publications.

WHERE TO COMPLAIN

Problem	Agency to Contact*
False advertising	Bureau of Consumer Protection, Federal Trade Commission, Washington, DC 20580 Regional FTC office National Advertising Division, National Council of Better Business Bureaus, 845 Third Avenue, New York, NY 10022 Editor or station manager of media outlet where ad appeared
Drug or device marketed with false or exaggerated claims	Health Fraud Branch, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857 Regional RDA office State attorney general Congressional representatives
Phony mail-order promotion	Chief Postal Inspector, U.S. Postal Service, Washington, DC 20260 Editor or station manager of media outlet where ad appeared
Improper treatment by licensed practitioner	Local medical society, if practitioner belongs Local hospital, if practitioner is on staff State licensing board Private attorney for possible lawsuit
Improper treatment by unlicensed individual	Local district attorney State attorney general Local newspaper or TV station Private attorney for possible lawsuit
Advice needed about questionable product or service	National Council Against Health Fraud, Inc., P.O. Box 1276, Loma Linda, CA 92354

*Where more than one agency might be interested, complain to all of them.

If you object to a broadcast, make your objections known by writing or phoning its producer or the station manager. Persist until you learn how those you contact feel about your request. If you encounter resistance, get as many people as you can to make similar contacts. Don't be discouraged if no immediate corrective action is taken. Expressions of protest may still influence what happens in the future.

If you object to a newspaper or magazine article, write a letter to the editor and get others to do the same. If the publication is local, phone calls can also be useful because they insure that the person you are contacting really thinks about your complaint. Contacting the writer may also help prevent future difficulty. If you have expert knowledge and would like to be interviewed or used as a consultant, make your interest known and send story ideas and pertinent background literature to reporters or editors. When accurate information is published, expressions of support will encourage more of the same.

Objections to advertising can be made to advertising managers, editors, publishers, and/or station

managers. Although advertising revenue may count more than your opinion, protests are sometimes effective. If you report a misleading ad to an enforcement agency, tell your local media. Reporters who value the credibility of the press may relish an opportunity to embarrass their own advertising department by publicizing what you did.

The National Advertising Division (NAD) of the Council of Better Business Bureaus can exert pressure against misleading messages in national advertising. NAD is well equipped to handle nutrition issues. Its director, Ronald H. Smithies, Ph.D., J.D., is an attorney with a doctoral degree in biochemistry. The investigative staff includes a registered dietitian.

Reporting illegal activities

Suspicious activities can be reported to state and federal government agencies. Some people hesitate to report suspicious activities for fear they will become embroiled in legal controversy. This fear is unfounded. Enforcement agencies conduct their own investigations and obtain outside experts as needed.

ANTIQUACKERY PUBLICATIONS

Publication	Special Features
Nutrition Forum (\$30/yr.) George F. Stickley Co. 210 W. Washington Sq. Philadelphia, PA 19106	News pertaining to nutrition quackery; includes original investigations
NCAHF Newsletter (\$25/yr.) National Council Against Health Fraud, Inc. P.O. Box 1276 Loma Linda, CA 92354	News pertaining to all types of quackery. Council membership includes newsletter and special reports
FDA Consumer (\$9.50/yr.) Superintendent of Documents Government Printing Office Washington, DC 20402	Reports on nutrition, food safety, government regulations and enforcement actions
ACSH News & Views (\$10/yr.) American Council on Science and Health 1995 Broadway, 18th Floor New York, NY 10023	Analysis of chemical and health controversies. ACSH membership (\$35/yr.) includes newsletter and special reports
Environmental Nutrition (\$24/yr.) 52 Riverside Drive New York, NY 10024	Timely analyses of controversies; book reviews
Consumer Reports (\$16/yr.) Box 51166 Boulder, CO 80321	Occasional in-depth articles relevant to quackery

The U.S. Food and Drug Administration (FDA) has jurisdiction over the labeling of products that enter interstate commerce. Labeling includes not only the actual words on the label but also any claims made through literature or oral claims involved in the sales process. Supplement products or questionable devices claimed to be effective against disease should be reported. Complaints made through FDA regional offices usually get more attention than those made to the agency's central office.

The Federal Trade Commission (FTC) has jurisdiction over advertising of products or services involving interstate commerce. However, the FTC almost never gets involved with the claims made by practitioners who are licensed by the states. Trouble of this type should be reported to state licensing boards. The Postal Service has jurisdiction over products sold through the mails.

When making a complaint, include as much information as possible. If you can, spell out what is wrong, point out why it may be harmful, and suggest what can be done to correct the problem. Where more than one agency may have jurisdiction, complain separately to all of them. Federal violations should also be reported to Congressional representatives with a request that they ask the appropriate federal agency to take action and let you know the outcome. Complaints from lawmakers often get greater attention than those from individuals. If you complain to an agency, please send a copy to *Nutrition Forum*, P.O. Box 1747, Allentown, PA 18105. We may be able to investigate and cover the situation in an article.

Unscrupulous practitioners may be prosecuted by state agencies, but a lawsuit by an injured victim may be more effective. The trick is to find an attorney interested in fighting quackery who will file suit on a contingency basis. Under this arrangement, the attorney gets paid a percentage of the winning but charges no fee if the case is lost.

Individual efforts against quackery can be multiplied greatly when coordinated with those of others. The National Council Against Health Fraud, Inc., has more than 2,100 members and has chapters in 13 states.

Its newsletter alerts members to pending legislation and provides information on current fads and frauds. Other useful publications are listed in the table on page 51.

Remember that in matters of health there should be no tolerance for deception. Your effort in opposing quackery may save many people from being hurt—and may even save a life!

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

BOOK REVIEW

Title: *Nutrition, diet and health* (1986)

Editor: Michael J. Gibney

Publisher: Cambridge University Press, 32 East 57th St., New York, NY 10022

Price: \$29.95 hardcover, \$8.95 softcover

Reviewed by: Stephen Barrett, M.D.

Dr. Gibney, a senior lecturer in nutrition at Trinity College (Dublin, Ireland), has produced a lucid 168-page discussion of nutrition basics and current controversies. Three quotations will illustrate his knack for explaining things and his unique writing style:

- Vitamins do not function in a magical manner. They act biologically, each having its own specific function. For a particular biological reaction to proceed at the correct pace, there is a given quantity of the vitamin required. Excess vitamins will not push the pace of biological reactions faster, just as having a full tank will not make a car go faster than its engine capacity will allow.

- If in the manufacture of cars there were a shortage of gearboxes, then there would be a proportionate shortage of cars. One option which might be open to the car manufacturer, but is not open to the body's protein-synthesizing mechanism, is that of building the car to a certain stage to await delivery of the gearbox. In the body it is whole proteins or none at all. There can be no compromise.

- Fashion is not confined to the clothes industry, to holiday resorts or to political belief. There are fashions in most professions, including science. In general, a subject becomes fashionable when scientists see in it an opportunity to make a name for themselves by publishing papers and to secure research grants. This is easiest in a new field or, as in the case of fiber, in an old field which has been revived.

This book is suitable for laypersons wishing to deepen their understanding of nutrition. It can also be valuable to professionals seeking better ways to communicate nutrition information.

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BRIEFS

Genetic engineering update. About 2,400 strawberry plants in a small test plot near Brentwood, 40 miles east of San Francisco, have been sprayed with Frostban, which contains altered *Pseudomonas* bacteria. The action was taken after a county court judge ruled there is "no credible evidence" that the test is unsafe and a state appeals court refused to stop the test. After the appeals court ruling, vandals uprooted most of the plants, but scientists in charge of the facility were able to replant them. According to an article in the *Los Angeles Times*, natural *Pseudomonas* contributes to \$1.6 billion per year in frost damage by encouraging frost formation on fruit, nut and vegetable crops. The test was designed to see how well the altered version will colonize the leaves and blossoms of strawberry plants and protect them. A few days later, scientists from the University of California/Berkeley began tests near the Oregon border with potato seeds treated with a solution containing similar bacteria called "ice-minus." The method is based on the discovery that removal of a single gene from the bacteria can transform it from a frost-inducer to a frost-fighter. Opponents of genetic engineering were able to delay field testing of this type for several years by filing lawsuits [see NF 3:5].

"Organic foods" not tax-deductible. A federal tax court has ruled that Warren and Gail Becher of Niagara Falls, N.Y., may not deduct "organic foods" as medical costs of coping with supposed allergic reactions that included "foggy thinking." This case contrasts sharply with a 1977 ruling in which a court held that the extra cost of "organically grown" foods could be deducted as a medical expense by Theron Randolph, M.D. (a leading "clinical ecologist") and his wife, Janet. The Randolphins claimed that Janet experienced mental confusion, crossed eyes, and difficulty in walking when she inhaled or ingested contaminants and that Theron had suffered from loginess, malaise, headaches, nausea and anorexia due to contaminated foods.

Price reduction. The softcover edition of *Popular Nutritional Practices*, by Jack Z. Yetiv, M.D., Ph.D., [Popular Medicine Press, 1986] has been reduced from \$17.95 to \$12.95. The 320-page book, which has received outstanding reviews, covers more than 100 topics of contemporary interest and is suitable for laypersons as well as professionals. *Nutrition Forum* readers can obtain copies for \$14.20 (postage included) from LVCAHF, Inc., P.O. Box 1747-N, Allentown, PA 18105.

Homeopath upheld. A county court judge has overturned the decision of the North Carolina Board of Medical Examiners to revoke the license of the state's only homeopathic physician, George A. Guess, M.D., unless he stops practicing homeopathy [see NF 4:5]. The Board has appealed this ruling to the state court of appeals.

Calcium juice. The American Medical Women's Association (AMWA) has awarded its first seal of approval to Citrus Hill Plus Calcium, a calcium-fortified orange juice product. After scientific review, AMWA's Scientific Evaluation Council concluded that the calcium in this product is more absorbable than that in milk. The seal, which Procter & Gamble can use in ads and on product labels, states: "Citrus Hill Plus Calcium has been shown to be a well-absorbed source of dietary calcium, which, as part of a balanced diet and accompanied by regular exercise, can help build and maintain strong bones.—*American Medical Women's Association.*"

Diet and health report. The *American Journal of Clinical Nutrition* has published all of the scientific papers presented at the October 1986 symposium on diet and health sponsored by the International Life Sciences Institute and other prominent groups. The issues addressed at the conference included: 1) What criteria should be used for making dietary recommendations? 2) Should recommendations be made to groups, individuals at risk, or everyone? 3) How can quantitative recommendations be applied to populations? 4) How should physiological variations such as age, sex, pregnancy and lactation affect quantitative recommendations? 5) What intake levels of nutrients or nonnutrients pose health risks? 6) Which dietary constituents are uniquely essential? 7) Is a multifactorial approach (diet, exercise, behavior and nutrition education) more effective than calorie restriction alone in reducing body weight? 8) How should population studies be carried out? 9) What are the pros and cons of public education vs. modification of the food supply? 10) What is the proper role of the food industry in public education? The 400-page compendium includes 53 papers on energy and obesity, fat and cholesterol, simple and complex carbohydrates, dietary fiber, selected vitamins and minerals, and implementation of dietary guidelines. Copies are available for \$10 from *The American Journal of Clinical Nutrition*, 428 E. Preston St., Baltimore, MD 21202. (Ask for Supplement Volume 45, Number 5.)

Berger blasted again. Tufts University Diet & Nutrition Letter has published a devastating review of *How to Be Your Own Nutritionist*, by Stuart M. Berger, M.D., author of *Dr. Berger's Immune Power Diet*. According to the Tufts' review, the new book: 1) was actually written for Berger by a freelance writer; 2) confuses cholesterol with fat, and saturated fat with total fat; 3) mistakenly claims that riboflavin has no RDA; 4) condemns high-fat foods in one chapter but recommends 400 calories-worth of almonds (80% fat) in another; 5) fails to explain how Berger arrived at his suggested "optimal" doses of vitamins and minerals; and 6) makes unjustified recommendations for using nutrients to treat dozens of problems ranging from sexual impotence to a craving for sweets. On June 30th, the North America Syndicate (a Hearst Corporation subsidiary), stopped publication of Berger's newsletter, *The Berger Report*. Issued twice monthly, it had attracted only 300 subscribers during its 11-month existence.

Suction lipectomy increasing. According to an article in *American Medical News*, suction lipectomy is becoming one of the most popular forms of cosmetic surgery in the United States. A survey of 2,800 members of the American Society of Plastic and Reconstructive Surgery reported 99,330 cases of fat suctioning last year—an increase of 78% over the number reported in 1984—with fees ranging from \$500 to \$4,000. The procedure was developed about ten years ago and introduced in the U.S. about five years ago. At first it was used almost exclusively for body contouring around the thighs, buttocks and abdomen. Now it is often used on the face as well. Critics of the procedure say it can numb nerves and tear blood vessels, causing infections and potentially fatal blood clots. According to Robert Berggren, M.D., professor emeritus of plastic surgery at Ohio State University, the ideal patient is under 40, at ideal weight, but still has collections of fat regarded as abhorrent.

AMAZING CLAIMS FOR CHLOROPHYLL

James A. Lowell, Ph.D.

A few years ago, a student arrived in one of my classes with her teeth and gums dyed bright green. When I inquired about her strange oral hue, she said that her doctor had prescribed chlorophyll for her hereditary gum disease. I had seen ads claiming that the chlorophyll in mints and chewing gum could freshen one's breath, but I had never heard of it being used as a medicine.

Not long afterward, a friend told me that his brother's chiropractor had suggested trying chlorophyll as a remedy for bleeding from the penis, a problem associated with jogging.

These two episodes led me to examine the claims being made for chlorophyll as both a medicine and a deodorizing agent. I began my little research project by picking up literature at several health food stores which sold chlorophyll liquid and tablets. Various pamphlets and ads stated that chlorophyll would do everything from cleaning dirty colons to providing vital life forces to the brain. The most enlightening publication, however, was a booklet written by T. M. Rudolph, D.C., Ph.D., whose claims were nothing short of astounding.

According to Rudolph, chlorophyll can cure, help to cure, or improve burns, leg ulcers, trench mouth, tonsillitis, peptic ulcers, several types of vaginitis, urinary bladder diseases, high blood pressure, colitis, tooth decay, arthritis, athlete's foot, constipation, hay fever,

rectal fissures, anemia, gas and "acidic" bowels, stomach and intestinal problems, laryngitis, ear problems and impetigo. He also says it will help tired feet, soothe gunshot wounds, destroy bacteria, and improve metabolism.

Rudolph asserts that chlorophyll is "the catalyst of the vegetable kingdom which can allow vegetation to produce life and vital energy by feeding on air, water, and sunlight and known and unknown agents and invisible rays of the sun." It does this, he explains, because it "produces oxygen by breaking down poisonous carbon dioxide."

This description is not quite correct. There are thousands of catalysts (chemicals that speed reactions) in the plant kingdom (not the "vegetable kingdom"), but chlorophyll is not one of them. It is the pigment responsible for the green color of plants that enables them to "trap" energy from sunlight. This energy and carbon dioxide are then used to manufacture the carbohydrates that all living things use as food. Oxygen is not produced by the breakdown of carbon dioxide but is a by-product of the splitting of water during photosynthesis.

Chlorophyll's proponents also claim that it is a natural substance equivalent to the "blood of plants." It is true that a small part of the chemical structure of chlorophyll resembles that of blood, but the functions of the two are entirely different. Nor should most products

labeled "chlorophyll" be considered "natural." They are breakdown products produced by exposing plant material to chemicals such as acetone, hexane gas, and copper. The resultant material is no longer chlorophyll.

Most claims that chlorophyll products can heal, kill bacteria, and remove odors are based on research performed early in the 20th century, before antibiotics were available to fight infections. Although many of these studies are considered invalid by modern scientific standards, there is evidence that chlorophyll can kill certain types of bacteria. It is not a practical choice, however, because very high concentrations are needed for any positive effect and modern antibiotics are far more effective anyway. Also, although chlorophyll kills some bacteria, it actually promotes the growth of others.

What about deodorizing properties? Despite the sales hype, in products sold to the public it doesn't have any. According to John D. Kephart, who performed studies at the laboratories of The National Chlorophyll and Chemical Company about 20 years ago, "No deodorant effect can possibly occur from the quantities of chlorophyll put in products such as gum, foot powder, cough drops, etc. To be effective, large doses must be given internally." [*Journal of Ecological Botany* 9:3, 1955]

Not long ago I visited a health food store to augment my collection of questionable nostrums. Because of my chlorophyll study, I selected a small bottle of garlic capsules with chlorophyll. Garlic has been considered to be a healing herb for hundreds of years. Many studies have examined the properties of garlic and its active ingredient, allacin. While some evidence exists that allacin may help lower blood cholesterol levels and effect blood pressure, no published studies demonstrate that health food variety garlic pills are good for anything other than flavoring food or providing bad breath. But literature at the store suggested they can help or cure cancer, diarrhea, dysentery, grippe, sore throat, intestinal disorders, tuberculosis, polio, and many other conditions.

To believers, adding chlorophyll to garlic seems impeccably logical: garlic makes you smell bad, chlorophyll makes you smell good, so the overall effect should be neutral. But since small amounts of chlorophyll do not deodorize, the most probable result from the pills is bad breath and a green tongue.

As I approached the cash register, another product caught my eye. For only \$3.50 I could obtain a bottle of Hoffman's Energol, a wheat germ oil product marketed by the York Barbell Company, of York, Pennsylvania. In 1960, the FDA charged York Barbell with misbranding its Energol Germ Oil Concentrate because literature accompanying the oil claimed falsely that it could prevent or treat more than 120 diseases and conditions. In 1974, the company was prosecuted again for claiming that Energol had special dietary value as a source of vigor and energy. In both cases, products were seized and destroyed under court-approved agreements the company reached with the FDA.

Although York Barbell no longer makes therapeutic claims for Energol, the stuff still retains some reputation for enhancing athletic prowess. When the clerk saw me looking at the bottle, she said, "You know, Energol is great, but it's only half of what you need. Because the Energol is temporarily stored in the liver, you need this or you won't get your energy fast enough. You don't want to wait for your energy, do you?"

"Oh no," I said, looking at the bottle she handed me. The label read Octacosonal, a product marketed by another company. "This seems a bit expensive," I said, looking at the \$5.95 price tag. "According to the label, this whole bottle contains only 30 thousandths of 1 gram of an alcohol taken out of yeast and put into a pill. Couldn't I just eat the yeast?"

"No, no," she replied, "this is different. It is the concentrated vital essence of wheat germ which will unlock the vitalizing powers of the Energol which is going to be stored in your liver. It really is an amazing scientific breakthrough."

What else could I do? The Energol wouldn't work properly without the Octacosonal, and the garlic would make me smell bad without the chlorophyll. So I went to the cash register and bought them all.

Dr. Lowell, who has graduate degrees in botany and genetics, is Professor of Life Sciences at Pima Community College in Tucson, Arizona, and is vice-president of the National Council Against Health Fraud. His recently revised book, *Health Hoaxes and Hazards*, is available for \$13.50 from the Nutrition Information Center, 255 N. Granada, #2058, Tucson, AZ 85701.

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LONDON SMITH LOSES LICENSE!

Diane S. Lund

Pediatrician/nutrition guru Lendon Smith, M.D., has voluntarily surrendered his medical license to the Oregon Board of Medical Examiners rather than face an arduous battle with the board. In January 1987, Dr. Smith was brought before the board's investigative committee on charges of having violated two Oregon statutes: "obtaining any fee by fraud or misrepresentation" and "making a fraudulent claim," said John Ulwelling, the board's executive secretary.

Ulwelling said the investigation was initiated because of a complaint and that the board had asked Dr. Smith to retire. Although the board has declined to discuss the specifics of the charges, they apparently involved allegations that he had signed documents authorizing insurance payments for patients he had not seen.

Dr. Smith, who has written ten books and appeared frequently on television talk shows, had in recent years been working in "nutrition-oriented" clinics with chiropractors, homeopaths, and other nontraditional practitioners. He is widely known as a critic of traditional medicine.

"The Board felt that my work was inappropriate and dangerous," Dr. Smith told me during an interview. (He would sign the insurance papers outlining the patient's treatment plan. Insurance companies began questioning the number of addresses Smith had since the clinics were located in three different parts of town.) "The Board said that I wasn't there to see each patient, that I wasn't acting as a proper doctor because I wasn't practicing the way doctors practice, that it wasn't real medicine because I wasn't using drugs. But people were getting well."

"I've been treating things successfully with a different approach and have been going against the mainstream. That bothered the board," said Dr. Smith, who is 65. "I retired before they asked for it. I was about to quit anyway." Smith insisted that his behavior could not be characterized as fraudulent. "If someone has a valid license and is not lying or cheating, why shouldn't he be reimbursed by the insurance company?"

This was not the first time Dr. Smith faced action by the Oregon Board of Medical Examiners. In 1973, he was ordered to surrender his narcotics license and was placed on probation for ten years for prescribing medication that was "not necessary or medically indicated" for six adult patients, one diagnosed as hyperactive and the other five as heroin addicts. He was also ordered to confine his practice to pediatrics.

According to a 1980 article in *The Washington Post*, Dr. Smith, like many pediatricians, had prescribed

Ritalin to calm hyperactive children. After working in a free clinic for drug addicts, he theorized that many heroin addicts had been hyperactive children and prescribed Ritalin for them also. However, trouble arose when some of the addicts sold his prescriptions to buy heroin. Ritalin is a controlled substance, and Smith did not have federal approval to run a program for addicts. In 1974, the Oregon Board agreed to allow Smith to write prescriptions for narcotic drugs under certain conditions, but in 1975, he was again restricted because the Board felt he was prescribing Ritalin for too many children. His probation lasted until 1981.

A native of Portland, Smith graduated third in his class from the University of Oregon Medical School and completed a residency in pediatrics. After entering practice in 1951, he worked as a pediatrician and became a clinical professor of pediatrics at the University of Oregon Medical School. Shortly after the Board's action in 1973, he turned to "nutritional therapy" and allied himself with naturopaths, homeopaths, and chiropractors. Later he became the first physician named to the board of the Portland-based National College of Naturopathic Medicine. He is a frequent speaker at health food industry seminars and has also lectured at dental meetings.

Smith contends that nutrition plays a major role in behavior and that nutritional remedies are helpful in a wide range of diseases and conditions. He claims, for example, that allergies, alcoholism, insomnia, hyperactivity in children, and a variety of other ailments are the result of enzyme disturbances which can be helped by dietary changes. He recommends a variety of food supplements and avoidance of white sugar, white flour, pasteurized milk, and other foods that are not "natural".

His books include *The Children's Doctor, Feed Your Kids Right, Improving Your Child's Behavior Chemistry, Encyclopedia of Baby and Child Care, Feed Yourself Right, Foods for Healthy Kids, Dr. Smith's Low Stress Diet*, and *Dr. Smith's Diet Plan for Teenagers*. Most of them were published by the trade division of McGraw-Hill, a leading publisher of college textbooks.

Mrs. Lund is a freelance writer in Portland, Oregon.

COMING SOON
Premenstrual Syndrome (PMS)

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PREMENSTRUAL SYNDROME: IS IT NUTRITION-RELATED?

Therese Beaudette, M.S., R.D.

Many women experience symptoms preceding their menstrual periods. While some have similar symptoms each month, others report differences in incidence and severity from one cycle to the next. These symptoms are commonly referred to as "premenstrual tension (PMT)" or, more commonly, "premenstrual syndrome (PMS)." Current public concern is reflected by the existence of more than 200 free-standing clinics and information sources directed at PMS within the United States. However, there is considerable scientific debate over the nature of this problem, how it should be treated, and even whether it is actually a clinical entity.

The fact that symptoms occur in cycles related to menstruation has been observed for centuries. PMS was first postulated as a clinical disorder by Robert T. Frank, M.D., in 1931. He defined it as a specific and severe syndrome of "indescribable tension and irritability" with a "desire to find relief by foolish and ill-conceived acts" and relieved by the onset of the menstrual period.

During the 1970s, PMS was even used as a legal argument for diminished responsibility in the trials of three women in Great Britain who were acquitted of murder. However, in 1982 an attempt to use this plea in the United States was unsuccessful.

Definition

The scientific community has not agreed upon an exact definition of PMS. In general terms, however, it can be defined as a combination of physical and/or emotional symptoms that occur before menstruation and disappear or become minimal during menstrual periods. The symptoms can include tension, depression, irritability, fatigue, difficulty in concentration, crying spells, aggression, headaches, abdominal bloating, swelling of the hands and feet, breast tenderness, constipation, acne, abnormal thirst, and cravings for sweets

and/or salty foods [*American Journal of Obstetrics and Gynecology* 153:599-604, 1985]. Usually relief occurs when periods begin, but if periods are delayed, the severity of symptoms increases.

PMS should be differentiated from dysmenorrhea (menstrual distress), which can include crampy lower abdominal pain, headache, nausea, and diarrhea. These complaints begin shortly before the onset of menstrual flow and usually last two or three days. Dysmenorrhea usually starts during early adolescence and diminishes after childbirth, while PMS usually starts during the late twenties and thirties and worsens with age and childbearing. Most women with dysmenorrhea do not experience PMS and vice versa.

Statistics on PMS are related to the criteria used to define it and the method of recording the symptoms. Based on questionnaire data, 70-90% of women in the United States report recurrent premenstrual symptoms, but only a small percentage report changes severe enough to interfere with their functioning. Researchers who have compared women's recall of past PMS symptoms with what they report in a daily symptom diary have found that diary symptoms are generally less severe.

Possible causes

The cause of PMS is unknown, but it seems unlikely that a single cause is responsible for the wide variety of symptoms involved. Hormonal, nutritional and psychological factors have been suggested [*Journal of Reproductive Medicine* 30:113-126, 1985].

The hormonal patterns of the menstrual cycle indicate that PMS symptoms closely follow the secretion of progesterone. Many workers have suggested that progesterone excess or deficiency is a cause of the syndrome. Since progesterone appears to have a sedative

effect on the central nervous system, a deficiency could account for the symptoms of tension and irritability. Excess estrogen has been theorized to cause fluid retention, fullness of the breast, and abnormal carbohydrate metabolism. However, no one has found a hormonal distinction between women who have PMS and those who have not.

Several nutritional theories have been proposed. During the 1940s it was suggested that B-vitamin deficiency might lead to an estrogen excess that caused symptoms. Although the suggestion was based on studies with rats, reports alleging successful treatment in humans soon followed. After it was noted that women with severe vitamin B₆ deficiency actually had normal estrogen metabolism, vitamin B therapy lost its popularity until it was discovered that B₆ is involved in the synthesis of serotonin, a brain chemical related to mood.

Some speculations have centered on low vitamin A levels as a causative factor in PMS. Positive results have been alleged in uncontrolled studies, but no well-designed study has been reported. The possibility that a cyclic vitamin deficiency exists in PMS seems remote.

Some workers have suggested that stress and other symptoms of PMS are related to magnesium deficiency. Guy E. Abraham, M.D., and a colleague have reported that the magnesium level in the red blood cells of 26 women with PMS was lower than in 9 women without PMS. But blood levels were normal in their study, and no controlled study of magnesium administration for PMS has been reported [*Postgraduate Medicine* 77(7):32-37, 1985].

Because some PMS patients complain of increased appetite, cravings for sweets, fatigue, dizziness and "the shakes," it has been speculated that low blood sugar (hypoglycemia) may be responsible. This seems quite unlikely, however, because premenstrual symptoms are rarely confined to those times when hypoglycemia might be expected, such symptoms are not relieved by eating, and hypoglycemia can occur in women without PMS [*Comprehensive Therapy* 11:12-15, 1985].

Extensive research has been done to try to document sodium and fluid retention as a cause for PMS. While premenstrual weight gain has been found in some cases, it has not been consistently noted, even in hospitalized subjects on strictly controlled diets. It is clear that some women experience significant fluid retention before their periods. But voluminous literature on this subject reveals that weight gain and other symptoms don't always occur together, and that symptoms often fail to improve with diuresis alone. Local accumulations of fluid could cause headache, breast pain and gastrointestinal symptoms without a significant increase in body weight. Water may simply shift between various body compartments.

Animal research shows that changes in food consumption during the menstrual cycle are related to hormonal changes. An early human study found that 37% of 249 women reported a craving for sweets during the premenstrual phase, while 23% reported a generalized increase in appetite. Other studies have found that women who reported severe PMS symptoms also recorded higher caloric intakes. However, it is not known whether these events are causally related to each other.

Patients with PMS are sometimes thought to be more neurotic than normal women, but psychological testing has found similar neuroticism scores in women with and without the problem. While some researchers have related PMS to marital discord and other stresses, a purely psychogenic explanation for PMS does not appear possible. More widely accepted is the theory that physiologic factors cause premenstrual symptoms but personality characteristics and stresses of daily living influence their severity. An excellent scientific review of the subject of premenstrual syndrome appears in the *American Journal of Obstetrics and Gynecology* 155:921-936, 1986.

Last year an advisory committee of the American Psychiatric Association proposed a diagnostic category called "late luteal phase dysphoria," which would be applied only if premenstrual symptoms are severe enough to cause marked impairment of social and occupational functioning and have occurred during a majority of menstrual cycles during the past year. However, critics of this proposal felt that evidence of its validity was lacking and that it had such a high potential for misuse, particularly against women, that it should not be included. Because of this controversy, the APA's 1987 *Diagnostic and Statistical Manual of Mental Disorders* lists "late luteal phase dysphoria" in an appendix called "Proposed diagnostic categories needing further study."

Diagnosis

There is no consensus on the number or severity of symptoms needed to establish a diagnosis of PMS. Nor are there clear-cut diagnostic tests that can determine whether or not a woman has it. The diagnosis is suspected from the patient's history and established by doc-

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umenting the relationship of symptoms to menstruation using prospective charting. For this procedure, both symptoms and menses must be charted daily for several months. Recording more than three symptoms can make the chart confusing. Therefore, only predominant symptoms should be noted. Charting will clarify whether symptoms actually recur before periods or occur throughout the menstrual cycle.

Medical evaluation may include a discussion of possible sources of stress. Hormonal measurements are expensive and are unnecessary because their significance in diagnosing PMS has not been established.

Self-screening questionnaires are available from PMS clinics and have been published in women's magazines.

Treatment

Although most treatments proposed for PMS have been reported as successful in some women, none has been consistently effective in double-blind studies (studies in which neither the subject nor the researcher knows who receives the experimental treatment and who received a placebo). This is particularly important because the placebo response rate in women with PMS is quite high—perhaps 50%.

The majority of women with PMS do not need treatment. Only those whose symptoms disrupt their life need intervention, and for most of them, symptoms respond to any demonstration of concern. The use of general measures such as simply helping the patient understand what may be occurring within the body often results in significant improvement.

The most commonly recommended treatments for PMS are diet, exercise, vitamins and progesterone [*Journal of Reproductive Medicine* 29:705-711, 1984]. A recent survey indicated that 60% of physicians who treat PMS patients recommend some type of dietary modification or supplement [*Drug Intelligence Clinical Pharmacology* 19:714, 1985].

Dr. Abraham, the leading proponent of dietary therapy for PMS, believes that regulating the intake of certain foods and beverages can help decrease the symptoms of PMS. He recommends a low-sodium "hypoglycemia" diet with limited use of dairy products, despite the fact that low calcium intake increases the risk of osteoporosis.

Although supplementation with vitamin B₆ is commonly recommended, little evidence of effectiveness has been reported. In one double-blind study a daily dose of 100 mg appeared to be more effective than a placebo. In another, it was no more effective. A study of one patient found 50 mg of B₆ more effective than a placebo. Another study showed positive results, but the dosage involved (500 mg/day) is unsafe. Another study using 250 mg doses found no benefit over placebo. Vari-

ous results have been reported in uncontrolled studies.

Vitamin B₆ poses a risk in high doses. In 1983, damage to the nervous system was reported in individuals who took daily doses of 2,000 mg or more for three or more months. (The RDA is 2 mg.) One patient in the first such report was a 27-year-old woman who took vitamin B₆ for PMS symptoms and increased her intake to 5,000 mg a day. Nerve damage has also been reported in a few individuals who took 500 mg doses and in one person whose reported intake was 200 mg/day for three years. Their symptoms, which resembled those of multiple sclerosis, included numbness and tingling of the hands, difficulty in walking, and electric shocks shooting down the spine. Although all the afflicted individuals improved greatly when they stopped taking B₆ supplements, some did not recover completely. The maximum safe dose of B₆ is unknown but probably does not exceed 50 mg daily.

One study found that daily administration of 600 mg of vitamin E to 26 women with fibrocystic disease improved breast tenderness, a symptom seen in PMS. However, subsequent studies with larger numbers of women found no significant difference between women receiving vitamin E and those receiving a placebo.

Other studies have examined the relationship between consumption of caffeine-containing beverage and PMS. One study found that 13 of 20 women who abstained from caffeine had complete resolution of symptoms in one to six months. A survey of 295 college-aged women found that caffeine intake was strongly related to the presence and severity of PMS. However, the author noted that consuming large amounts of any liquid may be related to PMS and also that women who consume large amounts of caffeine and cola may differ from women who do not in ways that are causally related to PMS.

Women with PMS may benefit from avoiding alcohol since it is a mood-altering drug which can cause depression and feelings of hopelessness. Some women have a decreased tolerance for alcohol premenstrually and may become intoxicated from drinking their usual amount. Eliminating caffeine and nicotine can reduce premenstrual anxiety and irritability, and sodium restriction is sometimes recommended to relieve PMS symptoms such as bloating, edema and weight gain.

Daily exercise can decrease PMS symptoms. Women who are physically active tend to suffer less from PMS. This lessening of symptoms may be linked to the rise in endorphins that occurs during exercise (the so-called "runner's high") or perhaps to an adjustment of body fluid status. Regular aerobic exercise can increase one's sense of well being, decrease fluid retention, and help relieve depression.

Progesterone therapy is a controversial issue in the treatment of PMS. Some clinicians enthusiastically

support its use, but others believe that it can worsen the syndrome because PMS occurs when body levels of progesterone are highest. Double-blind controlled studies have failed to indicate that progesterone was better than a placebo. Although progesterone scored better than no therapy, so did a placebo. The use of progesterone for treatment of PMS does not have FDA approval.

Synthetic progestins have also been tried. Patients who responded to one oral preparation did not necessarily respond to another. Well-designed studies with a variety of synthetic and natural progestational agents may clarify the value of this approach.

Studies using synthetic androgens (male hormones) and progesterone/estrogen combinations (oral contraceptives) have been inconclusive. Although some women may improve while taking a particular pill, others show no effect or worsening of such symptoms as depression and abdominal bloating.

Diuretics have been widely used for treating PMS on the premise that it is associated with salt and water retention. However, double-blind studies have yielded various results, with several diuretics performing no better than placebos. Spironolactone (Aldactone), a diuretic which is also an anti-androgen, showed positive results in two double-blind studies.

Another proposed remedy for PMS is evening primrose oil, which contains a fatty acid called gamma linolenic acid (GLA). Its use is based on speculations that PMS involves a deficiency of GLA that causes hormonal imbalance. Primrose oil is available without a prescription because it is marketed as a nutritional supplement. Its leading proponent is Dr. David Horrobin, a former professor of medicine at the University of Montreal who is affiliated with a major manufacturer of primrose oil supplements [see NF 1:20].

Some data suggest that GLA may play a role in PMS, primarily in symptoms related to the breast, but no large, well-designed studies have been performed. Primrose oil also contains vitamin E. The effect of regularly using vitamin E or primrose oil supplements is unknown. However, a recent report by Robert M. London, M.D., and colleagues at Johns Hopkins University suggests a possible role for vitamin E in treating PMS symptoms. In a controlled study of 41 women, they noted significant improvement in those receiving supplemental vitamin E. This study and several others were reported in a symposium on PMS in the June 1987 issue of the *Journal of Reproductive Medicine*.

Dr. Abraham has reported that women with PMS consume more sugar, refined carbohydrates and dairy products, whereas women with no symptoms consume more of certain vitamins and minerals. Based on this information, he formulated and is marketing Optivite, a nutritional supplement which contains 29 ingredients, including high doses of vitamins A, C, E, B₆, other B-

vitamins, magnesium, iron and zinc. During the past few years he has claimed positive results in studies of small numbers of women divided into groups according to symptoms. But research with larger numbers of subjects is needed to clarify the significance of these trials and which if any of Optivite's ingredients may be helpful. This product, which costs \$18-\$21 per 180 tablets, is considerably more expensive than equivalent doses of B₆ alone.

Overview

Publicity has made women very aware of PMS, and an "epidemic" has resulted. But the lack of criteria for definition as well as a paucity of careful studies has led to a situation where publicity of the problem exceeds the science dedicated to researching its causes and treatment. Future research must focus on establishing uniform diagnostic criteria and conducting well-designed studies of proposed treatment regimens, both pharmacologic and nutritional. Meanwhile, for those who suffer from PMS, some commonsense suggestions may help:

- For premenstrual water retention (abdominal bloating and swelling of the hands and feet), refrain from adding salt at meals and restrict sodium-containing foods at that time of the menstrual cycle.

- For breast discomfort or symptoms of anxiety, avoid or limit coffee, tea, cocoa, cola, other foods and medications that contain caffeine or related compounds. Although this may not help, it is harmless and relatively easy to do.

- Try to identify and deal with psychosocial stresses.

- If eating sweets appears to produce symptoms, try to satisfy cravings with complex carbohydrates (starches) rather than simple sugars.

- If vitamin supplementation is used, megadoses should be avoided.

Ms. Beaudette is author/publisher of *Seminars in Nutrition*, a bimonthly publication offering continuing education credits for dietitians. Information about this program can be obtained by writing to her at P.O. Box 3525, Littleton, CO 80161.

COMING SOON
 Natural Carcinogens in Foods
 1985 RDAs Will Be Released
 Suma: A Questionable New Herb

NEW HYPE FOR B-VITAMINS

The Food and Drug Administration has expressed concern over Ener-B, a vitamin B₁₂ gel administered inside the nose. On February 26, 1987, the agency sent a regulatory letter to the manufacturer, Nature's Bounty, of Bohemia, New York, stating that Ener-B is an unapproved new drug that is illegal to market without FDA approval.

Full-page ads in *American Health*, *Health, Prevention*, *Bestways*, *Let's Live*, *Vegetarian Times* and *Total Health* state: "Get a BURST of ENER-B . . . Just a tiny dab of ENER-B gel placed inside the nose delivers the B₁₂ boost simply not possible with tablets." Some ads call B₁₂ "the 'hard-to-get' vitamin." Flyers for distribution through health food stores promise, "You'll feel good about it, especially the morning after." Ads in the trade press state: 1) Vitamin B₁₂ is very difficult to absorb; 2) Ener-B delivers ten times more B₁₂ to the blood than tablets; and 3) Ener-B makes vitamin B₁₂ tablets obsolete." A 12-dose package retails for \$11.95.

Ener-B is being marketed with the help of G.S. Schwartz & Co., Inc., a Madison Avenue public relations firm. Materials distributed to the press described the dangers of pernicious anemia ("one of the few vitamin deficiencies that still kills Americans") and noted that the body's ability to absorb B₁₂ decreases with age. They also stated that "Nutritional authorities have described Vitamin B₁₂ as having the ability to restore or increase energy levels." Media outlets were notified that Earl Mindell, author of *Earl Mindell's Vitamin Bible*, was available for interviews about the product. Mindell also spoke to retailers at Natural Foods Expo '87 West, held in March. Among other things, he claims that "chronic low-grade shortages plague many individuals who have otherwise balanced diets."

Ener-B attracted considerable attention through an article in *People Magazine* which began, "They claim it can give an instant energy high, that lasts for 48 hours . . . Snorting it has great appeal for those who used to inhale unhealthy stuff, and now they can still practice the ritual." Company officials think this article may have triggered the FDA action.

Interviewed by *Natural Foods Merchandizer*, a company official claimed that Ener-B is "a food supplement taken exclusively for its nutritional value." But FDA nutritionist Marilyn Stephenson responded, "There is no scientific evidence to support the need to sniff vitamins in a healthy, normal population. Generally people get all the B₁₂ they need in their diet. The only people who don't get enough are those with problems like pernicious anemia. They can't absorb the vitamin, so they get B₁₂ injections. That's a drug use and these people are treated by physicians."

Nature's Bounty has petitioned the FDA to issue a regulation or guideline relating to food classification and methods of consumption and to refrain from taking enforcement action until such regulation or guideline has been promulgated and made effective. According to the petitioners, Ener-B should be classified as a food substance even though it is consumed through the nose.

An alternate route and B₁₂ hype are involved in another new product: Total B, a mixture of the eight B-vitamins ("including 250% of the RDA of the hard-to-get vitamin B₁₂") plus vitamin C. This product is a liquid administered under the tongue with a dropper. According to its manufacturer, Real Life Research, of Shanton, California, "Total B was originally developed to give professional athletes a competitive edge by allowing them to increase their stamina and resistance to disease." The company also claims (falsely) that B-vitamins and vitamin C are not stored in the body and therefore must be taken daily, and that "B Complex helps reduce stress, build stronger immune systems and increase energy."

Literature from the company's public relations firm states that Total B is endorsed by Bernd Friedlander, D.C., who was "a pioneer in the research and use of free-form amino acids for improving athletic performance" and is "a godsend to dozens of Los Angeles area elite athletes, including members of the Rams and Raiders teams, as well as the entire UCLA women's crew team."

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BRIEFS

Nevada naturopaths delicensed. The Nevada legislature has repealed a 1981 law under which naturopaths were licensed. According to an article in the *Las Vegas Review-Journal*, only three naturopaths were practicing in Nevada and serious questions had been raised about their credentials. The board had no record of an application from one of the practitioners. Another claimed to have a degree from a school that does not exist. And the third claimed to have a degree from a school that was closed during the years he said he was a student.

Verdict in raw milk suit. A jury has awarded \$40,000 to the family of a man whose death they believe was caused by bacteria in Alta-Dena Certified Dairy's raw milk. According to testimony during the 2½-week trial, the victim, Paul B. Telford of El Monte, California, drank the milk several weeks before his death in 1982 when he was undergoing radiation therapy for lung cancer. Dairy officials, who blame the cancer for Telford's death, are appealing the verdict. Alta-Dena is the nation's leading producer of raw milk products, selling 10,000 gallons a day, mostly in Southern California. The FDA is currently formulating a ban on interstate shipments of raw milk under a federal court order.

Alcohol and breast cancer. Two research groups reported in the May 7 *New England Journal of Medicine* that drinking alcoholic beverages several times a week is associated with an increased risk of developing breast cancer. Analyzing these reports, the July *Harvard Medical School Health Letter* concluded that "alcohol intake is in some way associated with the probability of developing breast cancer." However, the newsletter points out: 1) the findings do not prove cause-and-effect; 2) no one has devised a biological model to explain how alcohol exposure might lead to breast cancer; 3) the studies are being widely misinterpreted to mean that moderate alcohol intake as much as doubles the risk of breast cancer; 4) the increased risk is greatest in women below 50, in whom breast cancer is not common, so that their overall risk is still low; 5) if the studies are accurate, drinking might be responsible for 1-2% of all cases of breast cancer in the United States; 6) the studies were not designed to help predict what benefit might result from abstinence; and 7) the situation provides "a suitable occasion for women to reassess the amount they drink and the reasons they drink. But it should not be an occasion for terror and guilt."

Diet and health report. The Council for Agricultural Science and Technology (CAST) has published an excellent report on nutrition-related health issues. Prepared by a task force of prominent scientists, its 62 pages cover obesity, diabetes, heart disease, high blood pressure, cancer, osteoporosis, tooth decay, food allergies, diet and behavior, diet and senile dementia, and additives and toxic chemicals in foods. Though the report was written primarily for professionals, most of it can be understood by laypersons. Copies are available for \$5 from CAST, 137 Lynn Avenue, Ames, IA 50010.

Free dietitian list. Consulting Nutritionists in Private Practice, a practice group of the American Dietetic Association, has compiled a list of Registered Dietitians in private practice in all 50 states. A free copy can be obtained by sending a stamped, self-addressed 4" x 9½" envelope to Aviva E. Croll, R.D., M. Ed., P.O. Box 41, Bloomingdale, IL 60108.

Budding researchers. Two freshman students at Johnston County Community College in Overland Park, Kansas, have recorded some interesting observations of eating habits. Carrie Carmichael noted that five out of ten six-year-olds who brought lunch to a YMCA day camp threw their sandwiches into the trash after consuming dessert and a soft drink. Nicole Linck, who observed patrons at a frozen yogurt shop, judged that 37 out of 83 (45%) were overweight. The overweight individuals ordered more quickly and were far more likely to order toppings; but four changed their orders to larger sizes after reading a sign that said, "yogurt is 95% fat free."

Safeway accused of illegal boycott activity. The U.S. Commerce Department has charged Safeway, the nation's largest supermarket chain, with 449 violations of the U.S. law prohibiting cooperation with an unsanctioned foreign boycott (the Arab economic embargo of Israel). If found guilty, the company could face fines of up to \$10,000 per violation. Safeway called the charges "preposterous," but the head of the Commerce Department's Office of Anti-Boycott Compliance said that months of private negotiations had failed to reach an agreement. The case could take years to resolve, first through administrative procedures and later, perhaps, through the courts.

Anthology published. The Dushkin Publishing Group, Sluice Dock, Guilford, CT 06437, has published *Nutrition 87/88*, its first annual sourcebook of nutrition articles. Edited by Charlotte Cook-Fuller, Ph.D., of Towson State University, it contains 65 significant articles from newspapers, magazines, newsletters and scientific journals. Copies can be ordered by mail [\$9.50] or by calling 1-800-243-6532.

Fundraising ploy. Last year, Kentucky State Representative Tom Riner offered six Fiber Energy Bars to recipients who contributed \$25 to his campaign fund. The bars were made by United Sciences of America (USA), a multilevel company which went bankrupt this year following adverse publicity and legal difficulties [see NF 4:25-31]. Riner's letter claimed (inaccurately) that the bars were "the result of three years of work by Nobel prize-winning scientists." Despite the hype, Riner was re-elected. He and his wife, who preceded him in office, also sell Shaklee products.

Suit over stomach staples. A 23-year-old man whose stomach staples popped has filed suit. According to *Physicians Financial News*, the 305-pound man had 70 staples implanted as a weight-control measure. However, two days later he was allowed near a refrigerator and ate so much that the staples burst. Disclaiming liability, the hospital has replied that the patient's negligence was to blame, that he was aware of his prescribed diet and knew the consequences of not staying on it.

FDA lowers enforcement priority. The FDA's action plan issued in July 1985 listed health fraud as one of ten priorities [see NF 2:48, 3:2]. Under this program, the agency conducted an extensive public education program which included a national health fraud conference and 21 regional conferences. *A Plan for Action, Phase II*, issued in May 1987, no longer lists health fraud as a priority but covers it in a single paragraph among more than 40 pages of plans. During the past two years the agency has taken very few enforcement actions against quack products. The new document suggests this policy will continue by promising immediate action only against "direct health hazards" (which are rare) and public education against "economic frauds" (which are rampant). Strong educational efforts will continue, however, including another national health fraud conference during 1988. The plan's top goal is efficient review of proposed AIDS therapies, vaccines and related products.

Food safety for travelers. Whereas travel to Western Europe, Scandinavia, Australia and New Zealand poses no greater health hazard than travel in the United States and Canada, the risks of travel to other areas depend mainly on the traveler's local living conditions and length of stay. According to an article in the July 1987 *Drug Therapy*, those who briefly visit large cities, stay at good tourist hotels, and eat only in reputable restaurants run little risk of contracting a serious food-borne disease. Well-cooked meat and fish are generally safe unless contaminated after cooking; however, cysts of the organisms that cause toxoplasmosis, trichinosis and tapeworm remain infectious when meat is smoked, salted or dried. Raw vegetables, especially lettuce, should be avoided, since it is virtually impossible to clean them of the cysts or eggs of certain parasites. Peelable raw vegetables and fruits with unbroken skins are generally safe if the diner peels them and discards the skin. It is also prudent to forgo dairy foods, including cheeses, because improperly pasteurized dairy products can transmit serious infections. However, milk that has been boiled can be safely consumed. Untreated water is a vehicle for many disease-causing organisms. Boiled water is safe, and carbonated beverages are usually sterile. But using ice without being sure it is sterile is one of the most common errors travelers commit. Bottled water is not necessarily safe, and alcohol does not sterilize local water or ice. Beer and wine present few infection hazards. Following such rules does not necessarily prevent uncomplicated traveler's diarrhea, but it does reduce the risk of developing more serious food-borne bacterial and parasitic diseases.

QUESTION BOX

Q. Should parents be concerned and/or intervene if their child is under six and obese?

A. A "wait-and-see" approach is unwise in children who are developing obesity. Although clearly identifiable hazards are rarely present in the pediatric age group, the problem of obesity increases with its duration. Moreover, obesity during childhood can have adverse psychological and behavioral consequences. Severe caloric reduction is unwise since this may hinder growth. Parents should try to prevent undesirable weight gain by establishing a balanced diet, good eating habits, and increased activity patterns. However, excessive pressure to lose weight should be avoided because it could lead to unhealthy dieting practices or eating disorders such as anorexia or bulimia.

MISLEADING CLAIMS MADE FOR GRAPEFRUIT JUICE

Stephen Barrett, M.D.

According to an ad in the October 1986 *Health Magazine*: "Keeping healthy and fit takes work. And all that work takes its toll; like the loss of fluids and elements your body needs. Florida's got a refreshing way to give them back. 100% grapefruit juice. It's high in potassium, the one thing active people can't get enough of in their diets. Potassium balances sodium levels to regulate blood pressure and fight off fatigue." During the same month, a similar ad in *Prevention Magazine* included the message: "Florida grapefruit juice. It's sodium free and full of potassium, a combination that helps control blood pressure."

These statements, of course, are a mixture of fact, fantasy and outright falsehood. The idea that potassium is "the one thing active people can't get enough of in their diets" is ridiculous. The idea that the "work" of keeping fit "takes its toll" by causing "loss of fluids and elements your body needs" is misleading. People who exercise on a hot day will need to replace fluid loss. But "keeping fit" does not create any special nutritional needs that require special attention to one's diet. Nor do people who "keep fit" have a greater need for grapefruit than anyone else.

Lowering dietary sodium won't help everyone with high blood pressure, but only those "sensitive" to sodium. High-blood-pressure patients taking diuretics that increase potassium excretion need to have adequate intake of potassium and are sometimes advised to consume potassium-rich foods. But people at significant risk of potassium depletion from diuretics usually require a potassium supplement.

The statement that "potassium balances sodium levels to regulate blood pressure and fight off fatigue" suggests that eating grapefruit can help prevent high blood pressure—which is false. Nor can eating grapefruit "fight off fatigue." Perhaps the origin of this statement is the idea that potassium depletion caused by diuretics can cause muscle weakness. But again, the amount of potassium needed in such situations is more than grapefruit is like to supply.

After seeing these ads, I fired off a complaint to the National Advertising Division (NAD) of the Council of Better Business Bureaus in New York City. When NAD investigated, a Commission spokesperson said that the potassium deficiency claims were based on an opinion survey of athletes conducted by a nutrition consultant plus a study of the effects of intense conditioning in young men undergoing basic military training. In ad-

dition, a literature survey was provided as substantiation of the roles of sodium and potassium as nutritional factors in controlling blood pressure. NAD's investigator replied that the data obtained from the studies could not support broadly stated claims and expressed concern that the ad overstated the benefits of drinking normal quantities of grapefruit juice.

The spokesperson informed NAD that the claims had been discontinued and that a new campaign will promote grapefruit as a significant source of potassium when part of a healthy regimen, including proper diet and exercise. However, an ad from the "new" campaign states that grapefruit juice is "high in potassium with no sodium: a combination that, along with proper diet and exercise, can help control blood pressure." I believe this is still misleading because it has not been shown that drinking normal quantities of grapefruit juice will actually lower blood pressure.

These ads are part of a growing tendency of food producers to advertise biochemical facts about individual nutrients in their foods—a tendency that the FDA believes has great potential for fraud [see *NF* 3:89-91]. But the remarkable thing about the grapefruit ads is not their content but the fact that they were placed by the Florida Department of Citrus—a government agency! Funded by an excise tax on citrus fruits, its functions include supervision of the citrus industry, scientific research, and "a forceful advertising and promotional program." According to the Department's publicity director, their ads are written by an advertising agency and reviewed by the Department's scientific research department for accuracy.

Information about the Florida Department of Citrus was supplied by Debbie Carnegie, M.S., R.D., of Tallahassee, Florida.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

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CAN NUTRIPATHY TRANSFORM THE WORLD?

Jeff South

Why bother with medical school? For a lot less time and money, you can still be a "doctor" with a diploma on your wall from the American College of Nutripathy, a correspondence school in Scottsdale, Arizona. The school is headed by Gary Martin, who once ran a sales motivation institute. Its diplomas look as official as Harvard's. But critics say they are as bogus as the formulas Martin touts as effective against cancer, arthritis and other ailments.

Ads for the school appear regularly in *Let's Live*, *East West Journal*, *Medical Self-Care*, *Vegetarian Times* and *The Nutrition and Dietary Consultant*, all of which promote nutrition faddism. Many of the ads invite readers to "come help transform the world" by becoming a Doctor of Nutripathy.

A school brochure claims that "in mastering Nutripathy, you will be in possession of the true art of healing. You will know more about the Science of Health and Nutrition than the medical profession, chiropractic profession, osteopathic profession, homeopathic school and the so-called wholistic health school . . . You will have accomplished in a few months that the medically oriented school of nutrition has not achieved in all of its existence." The brochure also says, "We do not cater to the complicated and extensive body of trivia and irrelevance that today goes under the name of nutritional science."

Another brochure describes nutripathy as "the condensation of most all natural healing and counseling techniques available today . . . It is the basics 'boiled' from literally hundreds of different therapies and techniques." This brochure also states that nutripaths are different from naturopaths because "a Doctor of Naturopathy is trained to diagnose and treat disease . . . Doctors of Nutripathy have nothing to do with disease. Our concern is with health. We realize that the true cause of disease exists in the area of attitude, beliefs, lifestyle and environment . . . We begin on a very physical level and, as we learn about the client, gradually

elevate them physically, mentally and spiritually to become more of what God created them to be."

Martin claims that nutripathic tests can detect "imbalances which, if left to mature, must ultimately manifest as some form of disease process." He claims "to discover the root cause of the disease while it is still in the PREDIAGNOSABLE stage."

The college teaches financial health, as well as physical, and explains "how to set yourself up so that you can operate totally tax-free, legitimately." The school itself has tax-exempt status as a ministry of the Eternal Life Center, a nondenominational church which Martin established and serves as Pastor.

Martin says that the school was inspired by a vision of god. He has told state authorities that its degrees are "religious degrees, used solely for religious purposes within a religious organization." So far the school has survived attacks by state officials and others who have labeled it "an imminent danger" to the public. But it is facing its biggest threats since opening in 1976. A state board says the school must obtain a license, and the Arizona Attorney General's Office says it has reason to believe that graduates of the school are using their degrees to engage in the unlicensed practice of medicine.

A school brochure states: "The fact that we do offer business training should not be construed to imply that we are training you for a trade or vocation." But the brochure also encourages graduates to team up with a chiropractor, medical doctor or osteopath: "This way, you can work with insurance cases, which means you can reach many more people, and you have an instant practice. In addition, it shelters you from the 'establishment' until you feel comfortable enough to hang out your own shingle."

Martin's own shingle hangs at 6821 E. Thomas Road, which lies between a surgeon's office and an urgent care center. The building also houses the college, the Eternal Life Center, Nutripathic Formulas (a for-profit company that sells nutrition products and other

items by mail), and Natural Health Outreach, a clinic where Martin practices for "suggested donations" of up to \$700.

According to a clinic brochure, "Dr. Martin and Staff counsel and teach nutritional counseling, biochemical analysis, symptomatology, reflexology, iridology, sclerology, nutripathic therapy, mineral (hair) analysis, kinesiology, color therapy, radiesthesia techniques, stress counseling, colonic therapy, massage therapy and awareness techniques." In the Yellow Pages—under "Nutritionists"—the clinic advertises that its doctors can handle weight loss, fatigue, and other physical and mental matters. Martin also offers counseling by mail for a suggested donation of \$25.

A former patient, who requested anonymity, says he gave urine and saliva samples and got a computer printout that described his energy levels as dangerously low. The printout recommended frequent colonics (enemas), exercise on a small trampoline sold by Martin, and a diet that included many of Martin's products, such as Sprinkle, a powder made from raw vegetables, which costs \$6.45 for 4½ ounces. When the patient refused to pay the full "suggested donation," his balance due was turned over to a collection agency.

The urine/saliva test used by Martin was developed about 50 years ago by Cary Reams, a self-proclaimed biophysicist who was prosecuted during the 1970s for practicing medicine without a license. Reams, who also claimed to be guided by god, devised "a mathematical formula for perfect health, based on the biophysical frequencies of living matter." The formula, which Martin calls 'your Nutripathic Portrait,' looks like this:

1.5 6.4/6.4 7 1 3/3

According to Martin's book, *Nutripathy: The Final Solution to Your Health Dilemma*, the first three numbers represent sugars excreted in the urine and the acidity (pH) of the urine and saliva, and indicate how much "energy input" you have. The other numbers, said to represent your "mineral salts index, urine debris index and nitrate nitrogens over the ammoniacal nitrogens index," indicate how much energy your metabolism is using. "A low energy input and high energy drain," says the book, "means degeneration, rot, decay and death."

After evaluating an insurance agent, Martin once wrote: "The man may be in the early stages of slowly turning into a garbage dump, rotting from the inside, thereby experiencing nothing more at this time than an extreme energy loss."

Martin's book claims that "Nutripathy has nothing to do with disease" but is "based on the religious concept that God created man with certain nutritional needs and placed the source of those dietary needs in natural foods. Nutripaths believe that a properly combined diet of natural foods will allow a person to live in a

state of perfect health." Readers who can't find a nutripath in their community by looking under "Nutritionists" in the Yellow Pages are invited to locate one through the American College of Nutripathy, which charges \$20 for the "computer search" involved.

State officials are concerned primarily about the college, which has awarded hundreds of degrees to people throughout the United States and elsewhere.

The "degrees" offered are Bachelor of Nutripathic Science ("B.S."), Master of Nutripathic Science ("M.S."), Doctor of Nutripathy ("D.N."), Doctor of Nutritional Philosophy ("Ph.D."), Doctor of Nutripathic Philosophy ("Ph.D."), and Doctor of Nutripathic Theology ("Th.D."). On his letterhead, Martin is listed with three of these degrees plus "N.M.D.," although he denied any recollection of this when I interviewed him at his office in July. ("N.M.D." stands for "Doctor of Nutritional Medicine," a credential obtainable for \$250 from the American Nutritional Medical Association [see NF 3:52-53], whose 1986 directory listed him as "Gary A. Martin, NMD, DN, ThD, PhD.")

Martin's students work at their own pace and can get their degrees as quickly as they can pass the open-book tests, but those who don't finish in 1 or 2 years must pay extra. Those who wish to use nutripathy "on a professional basis" and desire "proper internship certification" are urged to take a \$100 two-day internship, which Martin describes as "the highlight of nutripathic education." Those who do so get a "certification plaque."

Martin insists that his courses require as much study as traditional programs. But even naturopathic officials in Arizona say his curriculum is a sham. "Naturopaths complete a college pre-med program and four additional years of study," says Milburn Shelton, who practices in Glendale. "Most then serve a two-year residency under an experienced colleague's supervision, and they must pass national and state exams." Martin is making "a deliberate attempt to mislead the public," says Shelton, who is on the Arizona Naturopathic Physicians Board of Examiners. "At a time when naturopaths are struggling for legitimacy from a skeptical medical establishment, Martin is making us all look like quacks."

Martin responded, "I don't think they like the

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fact that nutripath sounds like naturopath. But Good-year didn't like Goodrich."

In 1985, the naturopathic board condemned the college as an "imminent danger to the health and well-being of the citizens of the state." The board also asked the Arizona Attorney General and the U.S. Postal Service to shut down the operation. Michael Cronin, a Phoenix naturopath, bought various school publications, including a book called *How to Practice Nutripathy and Prosper Beyond Your Wildest Dreams*, and turned them over to the authorities. "Gary Martin is creating a nationwide network of unqualified 'doctors' who know a lot more about lining their pockets than they do about healing," Cronin says.

In 1985, under a new state law, the Arizona Board for Private Postsecondary Education began regulating private degree-granting institutions. The panel told Martin he would need a license for his school. According to the board's minutes, Martin refused to apply or to heed a subpoena to appear before the panel. But Martin asserts that he did comply with the board's request for a meeting.

In December 1985, Martin's organization sued the board. The two sides wrangled for 1½ years. Then, as the case was set for trial in Maricopa County Superior Court, they agreed to drop the lawsuit and try to resolve their differences. The board since has ordered its executive director to inspect the school and report her findings.

Scottsdale police have also investigated and referred the matter to the Attorney General's office. Kristi Riggins, an assistant attorney general who handles fraud cases, won't comment on the case, but did say it can be difficult to prove a person claiming to be a minister is practicing medicine without a license because the law exempts religious healing.

Arizona law defines the practice of medicine as "the diagnosis, treatment or correction of, or the attempt or holding of oneself out as being able to diagnose, treat or correct any or all human disease, injuries, ailments, infirmities, or deformities, physical or mental, real or imaginary, by any means," but exempts "any person while engaged in the practice of religion, treatment by prayer, or the laying on of hands as a religious rite or ordinance." Martin, 42, who lives with his wife, Linda, in a north Scottsdale home befitting a medical doctor,

claims the law is on his side. He asserts that the college is an "educational ministry" of the Eternal Life Center, "a church for all religions." And he calls nutripathy "an ancient religious healing science which allows the body's God-given innate healing power to flow throughout the system."

Some of the school's literature cites the Bible and preaches "the Gospel of Christ-consciousness." But other publications appear secular: One brochure, touting the clinic as "a superior, wholistic health-care program unsurpassed in North America," never mentions theology. Neither do the college's ads.

Martin, who was reared a Methodist in Iowa, also denies that his graduates diagnose or treat illness. They merely "guide patients to the elimination of disease," he says. When counseling a patient, for example, Martin says he prefaces his advice with such remarks as, "If I were you . . ." In this way, he contends, he avoids breaking the law.

A school brochure states: "It is always possible that, if you exceed your boundaries as a doctor of nutripathy, you could be subject to the 'practicing medicine without a license' complaint. This is why it is imperative that you use the proper Nutripathic Disclaimer and Contract with every client, no matter how well you know the person or how you are related."

Noting that no state law requires nutripaths to be licensed, Martin urges new practitioners to "stay within the bounds of nutritional counseling. Don't diagnose and don't treat disease. This is what the establishment gets most uptight about. Just quietly do your thing. Help people get well the Nutripathic way and the word will spread . . . Years from now when we have 5,000 practicing Nutripaths, the patients who have been to these nutripaths are going to be our strongest allies when we have enough political clout to consider protective licensing." He warns, however: "If you do not mail a monthly newsletter to your patients you are not going to make it as a Doctor of Nutripathy. You must stay in touch with your people. People are fickle and programmable . . . Every patient who has ever been to a Nutripath needs to be logged, regularly mailed to, and asked, annually, whether or not they wish to remain on your mailing list. This is worth millions to you over a lifetime."

Nutripathic Formulas sells more than a hundred

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products, including Toxoid Formula, which costs \$81.95 a gallon and carries a disclaimer: "We make no medicinal claims for this product." However, a 6-page brochure distributed by Martin contains 56 testimonials claiming that this formula has been effective against acne, cancer, colitis, diaper rash, poison oak, psoriasis, ulcers, varicose veins, warts, yeast infections, and dozens of other health problems. According to the brochure, an Illinois woman said the formula dissolved a lump on her right knee, and that her husband used it to heal a bruise he got sliding into home plate. "He even sprayed it on his B.V.D.s to keep them from sticking to the wound."

Federal laws require that drug products intended for the prevention or treatment of disease be labeled with adequate directions for their intended uses and cannot be sold across state lines without FDA approval. Toxoid Formula, for which claims are certainly being made, has neither adequate directions nor FDA approval.

At least one of Martin's graduates has been charged with practicing medicine without a license. Last October, Marcos Freddy Martinez of New York pleaded guilty and received a year's probation, according to Doris Crespo, an investigator for the Bronx District Attorney.

"Can the school really be held responsible for what the graduates do with their education?" Martin said when I described the case to him.

Martin's literature describes him as a rebel against the medical establishment. He discourages patients from seeking conventional treatment, which he calls "shamanism." He condemns vaccinations and states, "All drugs are evil." In another pamphlet, Martin said he had received a letter from a woman vacillating between his college and the University of Texas medical school's nutrition program. Martin replied: "You are torn between studying what you know to be the truth, versus an orthodox, impractical and basically worthless nutrition and dietetics curriculum." But Martin told me he has mellowed since making such attacks and recommends modern medicine for broken bones and life-or-death situations. He says his graduates focus on preventing illness by "educating people in the prediagnosis stage of life," before traditional methods can detect their diseases. And he says his school promotes "financial, social, physical, mental and spiritual prosperity."

Prospective students must purchase a \$13 packet containing an application, literature describing the school, a product order form, and a copy of *Nutripathy: The Final Solution*. Applicants must sign a statement acknowledging that "Nutripathy is a religious science of health" and that "Nutripathic methods are not for the purpose of diagnosing, alleviating, mitigating, curing, preventing or caring for 'disease' in any manner whatsoever." They must also agree not to use the knowledge they obtain for any such purpose and to "release the College, authors, publishers and/or any instructors

from any damages, claims or liability whatsoever, as a result of the information presented." The application fee is \$100, but the packet contains a \$100 credit certificate good for 30 days from the date stamped on the certificate.

Degrees from the school's Department of Nutrition cost \$1,995 each with advance payment or \$2,495 in installments. (In 1984, these fees were \$800 and \$1,000.) People who generate referrals by placing brochures in health food stores are promised a recruiting bonus of \$200 for each person who signs up for one of these courses. Participating stores are also promised \$200.

Students must get the bachelor's and master's degrees in nutripathy before pursuing a doctorate. For fees ranging from \$30 to \$400, the nutrition department also offers 25 "mini-courses," including "Nutripathic Arthritis Studies," "To Cleanse or to Surgery," "Nutripathic Emotional Recovery Studies," "Nutripathic Master Herbalist Course," and "Sin, Fear and Guilt Removal." Upon request, "a beautiful Certificate of Completion" is available for all mini-courses. The Mini-Course Curriculum Guide states that the courses "are not intended to replace physicians or appropriate medical treatment. They are offered as an aid in bringing increased knowledge to facilitate improvement."

The college's Department of Theology offers four diplomas for \$500 each. Students may study nutrition and theology simultaneously. Martin ordains the theology graduates and offers to help them establish their own Eternal Life Centers.

Students are urged to buy the products they'll be selling to patients, including "flower formulas" to overcome depression, a solution that supposedly kills the urge to smoke, oral drops to relieve arthritis and inhibit aging, aphrodisiac herbs, and a water filter. The school also sells a laboratory kit for \$750, a urine/saliva manual for \$1,000, a *How to Prosper as a Natural Health Practitioner* manual for \$100, and T-shirts for \$10.

No state agency recognizes the college, whose faculty—according to court records—consists of Martin and Charles Huge. The school is advertised as "accredited" and touts approval by the International Accrediting Commission for Schools, Colleges and Theological Seminaries. This operates from the home of George and Helen Reuter in Holden, Missouri. Mrs. Reuter says their agency accredits about 150 schools, most of them religious and correspondence programs. But she acknowledged that it is not recognized by the U.S. Department of Education or any other governmental body.

According to Martin's teachings:

- Vaccinations are harmful and unconstitutional. "Over half the people in the U.S. are now suffering from delayed reactions, resulting in chronic diseases, from the shots they previously received."
- "Of so-called four basic food groups, only one of them has any relevance to human well-being. Our natu-

ral diet is of fruits, with some vegetables and fewer nuts and seeds . . . Cooked foods are pathogenic. The eating of cooked foods and items in our diet other than raw fruitarian fare results in diseases and distorted development."

- "How about an eye wash that gets rid of cataracts? . . . If the cataract is caused by a calcium buildup, as most of them are, then the PGA B-15 EYE WASH will do the trick. Just drop in each eye at least twice daily and keep the eyes closed for at least four minutes."

- Appliances and fluorescent lighting emit "conflict energy" that causes cancer and other problems. To neutralize these rays, Martin sells "nutripathic diodes." "We have seen symptoms like regular headaches go away" when people wear the diodes in their pockets or as pendants, or attach them to fluorescent lights. Air travelers find that the devices eliminate jet lag.

Martin acknowledges that the American College of Nutripathy's curriculum is unorthodox. He states in a newsletter that "orthodox medicine is a tool of the anti-

christ consciousness. It is satanic. It is witchcraft . . . It is a religion that demands complete obedience or you will be excommunicated." He claims that as society realizes the limits of conventional medicine, it will turn toward nutripathy and other alternative forms of health care: "People who used to be labeled quacks are becoming people to be listened to." But James A. Lowell, Ph.D., vice president of the National Council Against Health Fraud, calls Martin's advice irresponsible and unsupported. "He wouldn't pass Biology 101," says Lowell, who is also a professor at Pima Community College in Tucson.

Despite his numerous disclaimers, Martin appears to be selling unapproved and misbranded drugs, practicing medicine without a license, and operating his school illegally. It remains to be seen, however, whether any law enforcement agency can curb his activities.

Mr. South is a reporter for *The Phoenix Gazette*.

BRIEFS

Carlton Fredericks dies. Carlton Fredericks, a prominent promoter of food faddism, died July 28 at the age of 76. A heavy smoker, he died of a heart attack. He was the host of "Design for Living," a one-hour six-day-a-week talk show on radio station WOR in New York City since 1957. Although he lacked nutrition credentials, he considered himself an expert and gave copious advice in books and in articles for health food publications. During the past few years he also did "nutrition consultations" for \$200 each at the offices of Robert Atkins, M.D. (author of *Dr. Atkins' Diet Revolution*).

Health publications rated. An expert panel assembled by *U.S. News & World Report* concluded that *Nutrition Forum* is "an outstanding, hard-hitting, antiquackery publication with no-nonsense style." The 4-person panel reviewed 13 health publications and assigned up to four points each for accuracy, readability and timeliness [Sept. 7, pp. 54-55]. For nutrition newsletters, the scores were: *Tufts University Diet and Nutrition Newsletter* 11.75, *Nutrition Forum* 11.00, and *Environmental Nutrition* 9.25. The magazine ratings were: *Hippocrates* 10.25, *American Health* 10.00, *Health* 8.25, and *Prevention* 7.375. The scores for health newsletters were: *University of California, Berkeley, Wellness Newsletter* 11.75, *Harvard Medical School Health Letter* 11.25, *Mayo Clinic Health Letter* 11.25, *Healthline* 10.25, *Executive Fitness Newsletter* 9.5, and *Executive Health Report* 9.5.

Diet and heart disease. The American Heart Association has published guidelines for "an optimal preventive diet for heart disease." Written for professionals, they can be obtained from AHA's national headquarters at 7320 Greenville Ave., Dallas, TX 75231. [Ask for booklet # 71-003-C.]

Dietary "variety" analyzed. The 1977-78 U.S. Department of Agriculture's Nationwide Food Consumption Survey has been used to evaluate the effects of dietary variety on dietary quality. Four researchers at The Pennsylvania State University have examined data from 3,701 individuals to see how the type and variety of foods affected their intake of 11 nutrients, percentages of calories from fat and sugar, and total intakes of calories, sodium and cholesterol. For vitamins and minerals, the researchers concluded that selecting foods from each of five major food groups (fruits; vegetables; grain products; milk and milk products; and meat and alternatives) was a simpler concept and was generally more important than choosing a variety of foods from within each of the five groups. They also concluded that altering the scope of food choices in line with the U.S. Dietary Guidelines (for example, using low-fat milk rather than whole milk) is more important than variety within each group [*Journal of the American Dietetic Association* 87:897-903, 1987].

Height/weight data. According to the 1986 *Statistical Abstracts of the United States*, the average woman in the United States is 5'4" tall and weighs 142 pounds—a little heavier than ten years ago. The average man is 5'9¼" and weighs 173 pounds, slightly less than a decade ago. Based on 1983 figures, the National Center for Health Statistics has reported that 16% of Americans are at least 30% over desirable weight, up from 14.5% in 1977.

Weight and longevity. Four scientists from Harvard University have evaluated 25 major studies of the association between body weight and longevity [*Journal of the American Medical Association* 257:353-358 1987]. Each study was flawed by failure to isolate and allow for the effects of cigarette smoking, high blood pressure, diabetes, and/or disease-induced weight loss. (The current Metropolitan Life Insurance Company's table of desirable weights, for example, are too high because the effects of smoking were not taken into account.) The scientists concluded that the impact of obesity on premature death has been underestimated and that the lowest death rates probably occur at weights at least 10% below the U.S. average.

Interstate raw milk shipments banned. After 15 years of stalling, the FDA has finally ordered that milk and milk products in final package form for human consumption in interstate commerce be pasteurized. In the August 10 *Federal Register* [52:29509-29514], the agency concluded that raw milk poses risks of serious infections with *Salmonella* and other organisms. The nation's largest source of certified raw milk is Steuve's Natural, Inc., a former division of Alta-Dena Dairies in City of Industry, California. Raw milk is also sold by the Mathis Dairy, of Decatur, Georgia. The new rule, which took effect September 9, was forced by a federal court order [see *NF* 4:12]. Raw milk sales have been banned in 27 states but are still permitted in the rest, including California. Raw milk can still be shipped across state lines to dairy processing plants for pasteurization.

FTC attacks Kraft. The Federal Trade Commission has charged Kraft, Inc., with misrepresenting the calcium content of Kraft Singles American Process Cheese Food. In an administrative complaint, the agency charged the company has falsely advertised that a slice of Kraft Singles contains the same amount of calcium as five ounces of milk and contains more calcium than do most imitation cheese. According to trade sources, Kraft's net sales for 1986 were \$8.7 billion, with dairy products accounting for \$651 million.

"Anti-aging" skin products attacked. The FDA has sent regulatory letters to Avon Products, Inc., Alfin Fragrances, Inc., and Estee Lauder, Inc., stating that the companies must seek FDA approval to continue claiming that their products have "anti-aging" effects. Because the companies portray the products as repairing cells beneath the skin surface, the FDA contends the products are drugs and require FDA approval. Alfin's Glycel skin care products have attracted considerable publicity because they were endorsed by cardiac surgeon Christian Barnard. Many other companies have been making anti-aging claims for their skin products.

Fluoridation scoreboard. Figures from the Centers for Disease Control indicate that from 1980 through 1986, governing bodies voted for fluoridation 162 out of 215 times while 83 out of 123 referendums were defeated.

Fluoridation materials. The American Dental Association has produced two items for promoting community water fluoridation. *Nature's Idea: Fluoridation*, is a free campaign package, including a 35-page manual, which can be ordered from Ms. Nancy Fehrenbacher, Staff Associate, ADA Council of Community Health, 211 E. Chicago Avenue, Chicago, IL 60611. *Fluoridation: The Facts and the Challenge* is a 15-minute videotape available for \$70 from the ADA Order Department at the same address. (Ask for #832 and specify ½" VHS, ½" Beta, or ¾" videotape.)

Mood-food link questioned. *Managing Your Mind and Mood Through Food*, a new book by Judith J. Wurtman, Ph.D., and Margaret Danbrot, has been criticized by the American Dietetic Association. "The food-mind-mood connection put forth is interesting and provocative," said an ADA news release. "But in the dawn of research investigating this potential, it may be presumptuous to extend to humans research findings derived from work done with purified chemicals and rats, and to use this as a basis for diet counseling or public education." Noting that readers are asked to rate their own responses to sample meals, the release points out that this methodology is open to subjectivity and the power of suggestion, and that it is simplistic to suggest that mood can be controlled by the manipulation of a single aspect of life such as diet. The book's general dietary advice and sample menus are nutritionally sound. But the authors make irresponsible claims like: "You can learn to make mood changes occur almost instantly" and "The range of big and little problems that can be alleviated simply by eating the right food at the right time is practically limitless!"

NEW RULES PROPOSED FOR HEALTH MESSAGES

The U.S. Food and Drug Administration (FDA) has proposed new regulations for health-related messages on food labels [*Federal Register*, August 4, 1987, pages 28843-28849]. In an accompanying news release, Health and Human Services Secretary Otis Bowen, M.D., said, "We want to permit, and in fact, encourage science-based statements regarding the benefits that classes of foods can provide. But we are trying to draw a line between scientifically based, general statements and those that are merely theories or are linked too closely to a particular commercial product."

Controversy in this area erupted in 1984 over ads suggesting that the high fiber content of Kellogg's All-Bran made it useful in preventing cancer [see NF 2:69, 3:19-20]. The ads had been designed with help from the National Cancer Institute (NCI) and were acceptable to the Federal Trade Commission. Sales of high-fiber, ready-to-eat cereals increased by 37% within less than a year. But FDA officials thought that linking a specific food product to NCI's general dietary guidelines might make All-Bran a "drug" subject to premarket proof of effectiveness. Kellogg and two industry groups then petitioned the agency to allow certain types of health claims in food advertising or labeling [see NF 3:89-91].

The FDA is proposing:

- Information must be truthful and not misleading to consumers. It must not overemphasize or distort the role of a food in enhancing health or preventing or alleviating disease. If a health-related claim is false or misleading, the agency may take action under the misbranding and/or new drug provisions of the Food, Drug, and Cosmetic Act.

- Claims must be supportable by scientific evidence from well-designed studies performed and evaluated by appropriate experts. A single study could not be used to support a claim if it conflicts with the majority of available pertinent evidence.

- Claims must be consistent with generally recognized medical and nutritional principles for a sound total dietary pattern—keeping in mind that nutrition is a function not of specific foods, but of total diet over time.

- Any product bearing health-related information must comply with existing nutrition labeling requirements [see NF 3:41-43].

- The same criteria may be applied to vitamins, minerals and other supplements, but the extent to which the criteria can be met may be limited. Although supplements are useful for individuals suffering from actual nutrient deficiencies, scientific data regarding good nutrition and health focus primarily on the role of foods, not supplements. It is generally more practical to

emphasize healthful dietary patterns than to identify and stress individual compounds. For these reasons, it may be more difficult for dietary supplements to meet the proposed criteria.

- Manufacturers may make health-related claims that conform to these guidelines without prior FDA approval, with the understanding that the manufacturer's activity may be subject to regulatory action.

The proposed regulations would apply to product labels but not to advertising, over which the Federal Trade Commission has primary jurisdiction. Nor would they apply to meat and poultry products, which are supervised by the U.S. Department of Agriculture.

The FDA's proposal also calls for the Assistant Secretary for Health to establish a standing committee to develop some suggested health messages. The committee would be chaired by the FDA Commissioner and include representatives of other Public Health Service agencies and the Food Safety and Inspection Service of the U.S. Department of Agriculture. The Federal Trade Commission would function as a liaison.

The committee's purpose would be to convey the advantages of dietary patterns that the committee believes would help to improve the public health. The messages would not refer to specific brands or products but would emphasize how a total dietary plan can be helpful. The committee would also consider whether messages are appropriate for dietary supplements. The messages may be subjected to consumer research such as field testing to help ensure that they are understood by consumers.

After messages are announced in the *Federal Register*, manufacturers could use them with assurance that they are legal. Manufacturers would still be free to develop their own messages or modify those of the committee. But enforcement action could still be taken if the messages go too far.

On August 10, *The New York Times* blasted the proposed regulations in an editorial titled "The Snake Oil Diet," which said:

"The new rules do not require food companies to list negative facts about foods, even if they far outweigh the benefits . . . Worse, the FDA has failed to insist that it prescreen claims. The agency lacks the resources to monitor the deluge of claims that will now appear, and will doubtless take years to rescind even the most outrageous. Just when knowledge has been gained of how proper diet can reduce heart disease and cancer, the Administration proposes to let industry unleash a babble of misleading claims that will allow bad foods to masquerade as good. If the FDA cannot write better rules, it had better continue the ban on health claims by

writing none."

Along similar lines, the Center for Science in the Public Interest has petitioned the FDA to prohibit health claims for nutrients not linked to major health problems and to require that health claims be accompanied by an explanation that one's total diet, not an individual food, can reduce the risk of disease. CSPI also requested that claims be prohibited until firm guidelines are in place. It believes that without firm regulation, many segments of the food industry will act irresponsibly.

CSPI has been very active in this issue and has driven many misleading claims from the marketplace by complaining to government and voluntary agencies. In one case, the FTC stopped claims that vegetable pills would protect against cancer. In another case, the New York Attorney General ruled that "beef gives strength" is misleading because beef alone won't give you strength. In another case, a food manufacturer was forced to stop saying that canned vegetables were as nutritious as fresh-cooked. In another case, a soup company had claimed that soup is "health insurance" even though its high sodium content could cause difficulty for people with high blood pressure. In yet another case, coffee had been promoted as something that "lets you calm yourself down" even though caffeine can make people nervous.

Victor Herbert, M.D., Professor of Medicine at Mt.

Sinai School of Medicine is also very wary of nutrition advertising. In comments to government officials and in the May/June 1987 issue of *Nutrition Today*, he has pointed out that food companies and supplement manufacturers often engage in deception by omission of adverse facts.

Public comments on the proposed regulations can be submitted through November 2, 1987. The FDA is particularly interested in the following issues:

- Is it in the interest of public health that health information, including information regarding specific diseases, appear on food labeling?
- Are the principles upon which the FDA has based its criteria reasonable?
- What types of scientific evidence should be considered adequate to support healthy information which might appear on food labeling?
- What role, if any, do dietary supplements have in promoting or enhancing nutrition and health? Are there sufficient scientific data to allow the use of health information on the labeling of dietary supplements?
- What priority should the FDA assign to enforcement actions against false or misleading health-related claims on package labels?

Comments should be identified with Docket No. 85N-0061 and submitted in duplicate to the Dockets Management Branch (HFA-305), FDA, Rm. 4-62, 5600 Fishers Lane, Rockville, MD 20857.

BOOK REVIEW

Title: *Design Your Own Vitamin and Mineral Program* (1987)

Author: Shari Lieberman, M.A., R.D.

Publisher: Doubleday & Company, Garden City, N.Y.

Price: \$8.95 softcover

Reviewed by: Stephen Barrett, M.D.

Ms. Lieberman claims to have researched the most up-to-date professional journals to provide "the most comprehensive, unified, and scientifically sound picture of what vitamins and minerals can—and cannot—do for you." I believe she has failed miserably.

For example, she claims that "you cannot get all the nutrients you need from today's food" and that "the RDAs are the nutritional equivalent of the minimum wage. They are probably enough to keep you alive, but how good is the quality of that life?" Instead, she postulates higher "Optimum Daily Allowances." And she suggests that "nutrition should be our first line of defense if an illness or condition is not life-threatening." These ideas are not scientifically supportable.

She also states that in her private practice she

counsels 50 people each week: "They come to me with every variety of problem and needs. Some are specific, such as acne, psoriasis, thinning hair, menstrual problems, blood sugar problems, intestinal disorders, high blood pressure, high cholesterol, an inability to sleep, fatigue, depression, or nervousness. These people turn to nutrition as an adjunct or an alternative to the treatment offered by their physician."

Although some of these conditions are diet-related, most are not, and few provide reasons to take supplements. But Ms. Lieberman claims to have found them valuable for dozens of problems, including aging, cataract prevention, kidney stones, depression, asthma, and shingles. The book suggests that everyone should take supplements.

Most junk nutrition books are written by people with neither credentials nor scientific training in nutrition. Ms. Lieberman has both, but seems to have gone astray. Last year—based on evidence presented at a hearing in December 1985—the American Dietetic Association censured her for failing to adhere to accepted practice standards. Perhaps they should do it again.

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THE MERCURIAL KURT DONSBACH

Stephen Barrett, M.D.

Kurt W. Donsbach, D.C., N.D., D.Sc., Ph.D., has played an important role in keeping the health food industry several steps ahead of the law. Since 1975 he has been chairman of the board of governors of the National Health Federation (NHF), the industry's militant lobbying arm. His other activities and enterprises have been so numerous and complex that no one—including Donsbach himself—seems able to document all of them with certainty.

Donsbach (pronounced Dons'—bah) graduated in 1957 from Western States Chiropractic College, in Portland, Oregon, and practiced as a chiropractor in Montana, "specializing in treatment of arthritic and rheumatoid disorders." From 1961 to 1965, he worked in "research development and marketing" for Standard Process Laboratories and the Lee Foundation for Nutritional Research. These companies, headquartered in Milwaukee, Wisconsin, were operated by Royal Lee, a nonpracticing dentist who helped found NHF. In 1963, Lee was described by a prominent FDA official as "probably the largest publisher of unreliable and false nutritional information in the world."

While Donsbach worked for Lee, he lived in California, did literature research, and gave nutrition seminars (primarily to chiropractors) on how to determine nutritional deficiencies. "I would catalogue the signs so an individual could see a nutritional deficiency syndrome by directing their attention towards specific areas," he stated during a 1985 deposition. He also testified that in 1962, he acquired a doctor of naturopathy (N.D.) degree from the now-defunct Hollywood College of Naturopathic Medicine and became licensed as a naturopath in Oregon.

After Lee became ill, Donsbach left his employ and opened Nature's Way Health Food Store, in Westminster, California, and Westpro Laboratories, in Garden Grove, California, which repackaged dietary supplements and a few drugs.

In 1970 undercover agents of the Fraud Division of the California Bureau of Food and Drug observed Donsbach representing to customers in his store that vitamins, minerals and/or herbal tea were effective against cancer, heart disease, emphysema (a chronic lung disease) and many other ailments. Charged with nine counts of illegal activity, Donsbach pleaded guilty in 1971 to one count of practicing medicine without a license and agreed to cease "nutritional consultation." Most of the products Donsbach "prescribed" were packaged by Westpro Labs. He was assessed \$2,750 and served two years' summary probation.

In 1973, Donsbach was charged with nine more counts of illegal activity, including misbranding of drugs; selling, holding for sale, or offering for sale, new drugs without having the proper applications on file; and manufacturing drugs without a license. After pleading "no contest" to one of the "new drug" charges, he was ordered to pay a small fine and was placed on two years' summary probation with the provision that he rid himself of all proprietary interest in Westpro Labs. In 1974, he was found guilty of violating his probation and was fined again.

Donsbach sold the company to RichLife, Inc., of Anaheim, California, a subsidiary of Moxie Industries, of Atlanta, Georgia, for \$250,000. He was also promised \$20,000 a year for occasionally conducting seminars and operating the company's booth at trade shows. The agreement also gave RichLife sole right to market Dr. Donsbach Pak Vitamins, which RichLife later described as "specialized formulas" to "help make your life less complicated, more healthy." Among the products were *Arth Pak*, *Athletic Pak*, *Dynamite Pak*, *Health and Beauty Pak* and *Stress Formula Pak*.

Donsbach then became president of Metabolic Products, a company specializing in "orthomolecular concepts," which he sold in 1975. According to literature from Metabolic Products, its garlic extract could

"prevent cellular deterioration," its alfalfa product had "anti-toxin properties" which could help to overcome "-itis diseases," and so on.

In 1975, Donsbach began producing *Dr. Donsbach tells you everything you always wanted to know about . . .* a large series of booklets on such topics as acne, arthritis, cataracts, ginseng, glandular extracts, heart disease, and metabolic cancer therapies. According to Donsbach, more than eight million have been sold. The booklets were published by the International Institute of Natural Health Sciences, which sold distribution rights to RichLife.

In 1984, Donsbach was sued by Jacob Stake, of Urbana, Iowa, who claims that he became ill and was hospitalized as a result of ingesting large amounts of vitamin A over a 2½-year period. The suit papers state that Stake began taking the vitamin at age 16 because it was recommended in Donsbach's booklet on acne. The case is still pending.

During the mid-1970s, Donsbach began affiliating with Union University, an unaccredited school in Los Angeles, where he says he acquired a master's degree in molecular biology and a Ph.D. in nutrition. He also says he was awarded an honorary doctor of science degree from Christian University, an unaccredited school which, he testified, had operated in Los Angeles. (However, two reporters have said he told them that his "D.Sc." was obtained from a midwest bible college.)

In 1977, Union University formed a Department of Nutrition—"with Kurt Donsbach, Ph.D., Sc.D., as Dean of the Department." RichLife, Inc. then offered scholarships to its retailers who wished to further their education. Later Donsbach launched and became president of his own school, Donsbach University, which in 1979 was "authorized" by California to grant degrees. (This status had nothing to do with accreditation or other academic recognition, but merely required the filing of an affidavit which describes the school's program and asserts that it has at least \$50,000 in assets.)

Donsbach University, which operated mainly by mail, initially offered courses leading to B.S., M.S. and Ph.D. "degrees" in nutrition at fees ranging from \$1,495 to \$3,795, with a 20% discount for advance payment. Most of the "textbooks" required for the "basic curriculum" were books written for the general public by promoters of questionable nutrition practices, including Donsbach, Carlton Fredericks, Lendon Smith, and Robert Atkins. The original "faculty" had seven members, including Donsbach, and Alan H. Nittler, M.D. (who, according to NHF, "lost his medical license in 1975 because he utilized nutritional therapies"). But ads for the school promised "the finest quality nutrition education available anywhere." Donsbach University has also offered courses in iridology, homeopathy, herbal therapy, and chiropractic business administration, as well as a \$495 "mini-course" in nutrition for retailers

who wanted a "Dietary Consultant" certificate.

In 1979, Donsbach began publishing the *Journal of the International Academy of Nutritional Consultants*, with Dr. Nittler as its editor. The first issue had a press run of about 25,000 copies, most of which were sent free-of-charge to chiropractors. The second issue explained that Academy members could be listed in a directory, and that the Academy "will in no way encourage or tolerate the practice of medicine under the guise of nutritional consultation" and would establish a legal fund to protect its members from "undue and unfair harassment by bureaucracies or agencies." Regular membership in the academy, open to anyone, cost \$10 per year (later raised to \$12/year) and included a subscription to its journal. "Professional membership," which cost \$50 per year, included a directory listing plus "beautiful certificate for your office." Sustaining membership, which cost \$150 a year, gave a 15% discount on advertising in the journal. Most of its 50 or so sustaining members had commercial interests in methods promoted by the journal. In 1981, the journal was renamed *Health Express*, Donsbach took over as editor-in-chief, and efforts were made to market it through health food stores and newsstands.

One of the journal's many ads was for nutritional cassette tapes, made by Donsbach, which could be obtained by writing to "Dr. Donsbach's Tapes" at the same address as his school's. A retailer who responded to the ad was sent two price lists, not from the school, but from Health Education Products, a company apparently located nearby. One list was for Donsbach's "Health Library" (of books and booklets) and cassette tapes (which include *Happier Sex Life* and *Herbal Medicine*). The other was for food supplement formulas such as *Optimum Nutrition*, *High Q*, *Anti-Oxidant Formula*, *Stress Nutrition*, *Renew-F* and *Renew-M*. According to a catalog of Nutri-Books, the largest distributor of books and related products to health food stores, *Dr. Donsbach's Nutritional Tape Cassettes* are "like having Dr. Donsbach as your personal physician right in your own home. Each . . . gives pertinent information and direction to aid in diagnosis and remedial action."

During 1983, the International Academy of Nutritional Consultants merged with a similar group to be-

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come the American Association of Nutritional Consultants. For a few months, Donsbach was listed as chairman of the group's national board of counselors and later he was listed as a contributing editor to its journal (which also absorbed *Health Express*). In 1983 and 1984, Donsbach was listed as publisher of the *Journal of Ultramolecular Medicine*, a publication for homeopaths who use computerized galvanometers to diagnose disease [see NF 4:6-8]. He has also published a 4-page newsletter called *Herb-Letter*.

In 1982, Donsbach formed and became board chairman of Health Resources Group, Inc., which sold supplement products to health food stores through HRG Enterprises (formerly called D&B Enterprises) and a multilevel company called Nutrition Motivation. HRG also operated Preventive Medicine and Nutrition Care Centers in Huntington Beach and Monrovia, California, and a syndicated radio talk show called "Let's Talk Health," which Donsbach hosted. HRG's products were promoted frequently during the broadcasts, which were beamed by satellite to about 20 small stations. Listeners were invited to call in questions on a toll-free number.

In 1984, Donsbach announced that he had repurchased from RichLife the right to sell products with his name, and HRG began promoting such products as Orachel (claimed to be effective against heart disease), C-Thru (claimed to be effective against cataracts) and Prosta-Pak ("nutritional support for the prostate gland").

In June 1985, the FDA sent Donsbach and HRG a regulatory letter indicating that claims made for Orachel made it an unapproved new drug that was illegal to market. A few months later, New York Attorney General Robert Abrams had Orachel seized from several retail outlets in the New York City area and filed suit to block further sale and distribution of the product throughout the state. It turned out, however, that before either of these actions were taken, Donsbach had transferred ownership of HRG Enterprises to a business associate. Marketing of Orachel was stopped, but Ora-Flow, an identical Donsbach product, is still being marketed.

In July 1985, Abrams brought actions against Donsbach, his University, and the International Institute of Natural Health Sciences, charging that they lacked legal authorization to conduct business within New York State and that it was illegal to advertise unaccredited degrees to state residents. Abrams also charged that the Institute's Nutrient Deficiency Test was "a scheme to defraud consumers" by inducing them to buy dietary supplements to correct supposed deficiencies reported with the test.

This test is composed of 245 yes/no questions about symptoms. When the answers are fed into a computer, a report of supposed nutrient deficiencies and medical conditions is printed out. However, experts who have evaluated the questions do not believe they provide a basis for evaluating nutritional status. More-

over, a scientist with the FDA's Buffalo district office who analyzed the test's computer programs in connection with prosecution of a Donsbach University "graduate" has found that no matter how the questions were answered, the test reported several "nutrient deficiencies" and almost always recommended an identical list of vitamins, minerals and digestive enzymes. The questionnaire also contains a section with questions about the subject's food intake during the past week. However, the answers given did not affect the printout of supposed deficiencies!

In 1986, Donsbach and the Institute agreed to: 1) restrict the sale of its Nutrient Deficiency Test to health care professionals legally authorized to practice within New York State; 2) stop marketing in New York State all current versions of its nutrient deficiency questionnaire and associated computer analysis services; 3) place conspicuous disclaimers on future versions of the questionnaire to indicate that the test should not be used for the diagnosis or treatment of any disease by either consumers or professionals; and 4) pay \$1,000 in costs. Donsbach and the University agreed to disclose in any direct mailings to New York residents or in any nationally distributed publication that the school's degree programs are not registered with the New York Department of Education and are not accredited by any accrediting commission recognized by the U.S. Department of Education. The University also agreed to pay \$500 to New York State.

During 1986 and part of 1987, Donsbach was "therapy coordinator" of the Bio-Genesis Institute in Baja, Mexico, which offered "chronic and acute care for degenerative disorders." Included in its scope were "aging rejuvenation, allergies, arthritis, cancer, cardiovascular, cataracts, immune stimulation, and multiple sclerosis." The treatments offered included oral and intravenous chelation therapy, laetrile, live cell therapy, homeopathy, DMSO, and colonics. Hydrogen peroxide is also used intravenously, orally, and in ear drops, a nasal spray, a tooth gel, a pain gel, breath drops and enemas. The cost of treatment at Biogenesis Institute was \$795 for the 4 Day Executive Program, \$2,750 for the 11 Day Rejuvenation Program, and \$5,000 for the 24 Day Total Care Program. But the Institute's information packet included a 20% discount certificate and stated that "there will be no charge if your condition is unimproved by the time you leave."

In 1987, Donsbach University announced that Donsbach had resigned as president and board chairman and that the school is applying to be re-named International University for Nutrition Education. Donsbach also began operating the newly-built Hospital Santa Monica, in Baja, Mexico, whose 21 Day Total Care Program is similar to that advertised for the Biogenesis Institute. Brochures from Hospital Santa Monica describe it as a 60-bed multimillion dollar facility and state

that payment in advance is required. Patients without insurance must pay \$5,000 with cash or a cashier's check, while those with satisfactory insurance must deposit \$2,500.

Donsbach has claimed that thousands of people have enrolled in his university and that more than 1,000 have graduated. As his graduates began representing themselves to the public as nutrition professionals, the American Dietetic Association began a drive for passage of state laws to restrict use of the word "nutritionist" to qualified professionals with accredited training.

Donsbach's logo is "Health is Wealth." Despite his

apparently enormous gross income, he filed for bankruptcy in March 1987, listing no assets and over \$3 million in debts claimed by more than 100 creditors.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery. He has been tracking Donsbach's activities since 1971.

STOCK BEING PEDDLED IN AIDS SCAM

Stephen Barrett, M.D.

According to promotional material, Immune America, Inc., is a Los Angeles-based firm "specializing in the research, development and marketing of high-quality nutritional products designed to assist in the treatment of immune system dysfunctions," and its president, Elizabeth Huntley-Robinson, Ph.D., is "one of the nation's leading immune nutrition research scientists."

These claims were made during August 1987 on Financial News Network's *Penny Stock of the Week*, which airs lengthy commercials for "selected low-priced stocks . . . that have the investment potential for high returns." Listeners are urged to contact a toll-free number for further information.

According to Dr. Robinson, "At Immune America we have developed a system of nutritional products and dietary regimen with which we've been able to rebuild the immune system even in the presence of crisis immune disorders such as AIDS, Epstein-Barr virus, and flu symptoms . . . We're talking about three products, three nutritional food supplement products which are sold over-the-counter, and a dietary system which works synergistically."

The company's taped commercial was aired in two five-minute segments. The first featured a live interview with a woman who said her symptoms of Epstein-

Barr virus (the virus responsible for infectious mononucleosis) had improved dramatically on Immune America's program. The other segment featured a testimonial from an AIDS patient who said he had dropped chemotherapy and had no intention of going back.

Literature supplied by brokers offering the stock states that Dr. Huntley has a Ph.D. in biological and medical sciences and an M.S. in biology from Brown University and a B.A. in physics from Swarthmore College. The other listed board members of Immune America are Wilbert C. Wade, Jr., a former national sales manager for Health Valley Natural Foods, and Judith K. Cutler, public relations director of Robinson Consultants. Marketing of the company's products is scheduled to begin in October in high-AIDS areas such as San Francisco and New York City.

According to the literature, Immune America's Nutrition System will cost \$100 to \$150 per month, compared to \$400 to \$800 per month for chemotherapy. The literature also claims that "Immune America does not believe that its products are subject to FDA approval," but warns that FDA regulation, if successful, "would have a material adverse effect on the company." It appears that about 2,000 potential investors have made inquiries as a result of the telecasts.

Under federal law, it is illegal to market any product for the mitigation or treatment of disease without FDA approval as safe and effective. The company's plans are also illegal in New York and California, whose attorney generals have been alerted to them.

Supplement products alleged to "strengthen the immune system" have been sold in health food stores for about two years [see NF 3:24]. But as far as I know, they have not been promoted with patient testimonials or the use of nationwide TV.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

ADDITIONAL THOUGHTS ON THE RDA

Henry Kamin, Ph.D.

It is remarkable what mythology has risen about the Recommended Dietary Allowances (RDA). One misconception stems from the fact that they are expressed in units per day. This is amplified by the frequent error of translating the "D" of RDA into the word "Daily" instead of "Dietary." Somehow the impression has been created that an RDA of each vitamin must be taken every day. This is completely false! The "daily" portion of the intake unit is simply a convenient way to express average daily intake for vitamins and minerals. The time over which the average should be taken is highly variable—from a week or a few weeks for thiamin (which is used up relatively rapidly) to as much as several years for vitamin B₁₂. There is no need to consume an RDA of any vitamin every day. Intermittent eating of appropriate foods does perfectly well. I suspect that I get most of my vitamin A in summertime when I gorge on tomatoes and fresh cherries. My body's storage facilities can then keep me well supplied year-round.

There is also a misconception that RDA are "minimums," designed to prevent disease rather than to insure "vibrant health." I can relate "vibrant health" to physical fitness, but I have great difficulty in defining such a state in nutritional terms and distinguishing it from absence of disease. The RDA are purposely generous. We design them to represent amounts that—even allowing for variability within the total population—are high enough that no improvement in health should be expected from increasing intake above RDA levels. We genuinely try to cover any possible benefit that may be gotten from the nutrients obtainable in a mixed diet.

In addition, safety factors incorporated into the RDA are intended to insure that even the outriders of a variable normal population are covered. One of the first questions I asked members of the current RDA committee was whether they knew of any normal individual who, while taking the RDA of any nutrient, developed any indication of shortage of that nutrient. None of us could think of a single example. I am convinced that the RDA protect the entire normal population. Our intent is to protect everyone from getting too much as well as too little. All chemicals, at some levels, can have pharmacological effects—good, bad, or both. But the RDA don't deal with nutrients as drugs.

Perhaps the most important misconception is that people are at great risk of developing a nutrient deficiency by casual or "junk food" eating. This is simply not so [see NF 4:33-37]. Special conditions such as pregnancy, breastfeeding and a few other situations do affect

the RDA. But these are provided for in the RDA tables, and recommendations are made about supplementation in the few cases where it is appropriate.

Finally, there is confusion and controversy about the purposes of the RDA. A distinction should be made between a "nutrient" approach (which is used in formulating the RDA) and a "dietary pattern" approach to nutrition. It is a damaging error to confuse the two approaches when considering individual nutrients. Data on the relationships between the individual nutrients specified in the RDA and the incidence and severity of chronic disease are weak—far weaker than the relationships between total nutrition pattern and the development of chronic diseases.

The RDA exemplify the "nutrient" approach. We inventory the materials that must be eaten because the body cannot make them, and make provisions for sufficient total intake to meet caloric and protein needs. These nutrient needs can be quantified—though we must allow for individual variation and a margin of error for safety's sake.

The effect of total dietary pattern on health also has validity. This is a much broader field and cannot be quantified nearly as well as the RDA. This approach considers not only vitamins and minerals but all of the various materials that may affect health: fiber, plant phenolics, exotic compounds, toxins, cancer-causing agents, percentage of calories as fat, types of fat consumed, and so on. It also encompasses the effects of eating patterns on obesity, which has its own set of consequences.

Dietary patterns can also affect growth and development during childhood and adolescence and can influence the development of chronic disease and aging. But we are nowhere near being able to quantify this large group of nutritional variables and can only make broad recommendations such as "Don't put on too much weight" or "Eat broccoli; there are several reasons why it's good for you." Recommendations of this type have been summarized in the 1985 Dietary Guidelines for Americans and amplified in booklets published by the U.S. Department of Agriculture [see NF 3:30-31 and 3:87]. But considerable clinical research is needed to determine whether more specific advice is justifiable.

Dr. Kamin is professor of biochemistry at Duke University Medical Center and chairman of the 1980-1985 RDA committee of the National Academy of Sciences.

NEW REPORT ON NATURAL CARCINOGENS IN FOOD

Many naturally occurring substances have been found to be carcinogenic (cancer-causing) using the customary criteria for assessing the cancer-causing potential of man-made substances. Other carcinogens are produced by cooking and by the actions of microorganisms. These types of carcinogens are more numerous, more widespread, and in many cases more potent than man-made carcinogens in food. However, according to a report by the American Council on Science and Health (ACSH), this should not cause alarm but indicates that evaluation of natural and man-made carcinogens in food should be better balanced. The report, *Does Nature Know Best? Natural Carcinogens in American Food*, discusses more than 20 substances including nitrosamines, aflatoxins, and carcinogens produced by cooking.

"Every time you eat a piece of toast, a mushroom, or a charcoal-broiled steak, you're eating carcinogens," said ACSH executive director Elizabeth M. Whelan, Sc.D. "But there's no reason to believe that natural carcinogens in our food supply are a significant hazard to our health in the amounts ordinarily consumed. The variety in our diets prevents us from being exposed to

truly dangerous amounts of any one potentially harmful food component."

The ACSH report—now in its third edition—concludes:

- The best way to minimize the potential hazard posed by naturally occurring carcinogens is to eat a wide variety of foods

- The common assumption that "natural" is safe and "man-made" is suspect is contrary to current scientific knowledge

- Regulatory emphasis should be on the potency and level of exposure to carcinogens rather than on whether their origin is natural or artificial

- Our priorities are mixed up. Extensive testing of synthetic substances wastes scarce scientific resources if more potent natural materials are ignored or unrecognized as major contributors to disease. Our efforts should be focused on the few substances that pose a clear hazard to human health rather than a multitude of tiny or hypothetical ones.

For a free copy, send a self-addressed, stamped (56¢ postage) 4"x9½" envelope to Natural Carcinogens Report, ACSH, 47 Maple St., Summit, NJ 07901.

BRIEFS

Chewing tobacco reduces ability to taste. According to a brief report in the April 30, 1987 *New England Journal of Medicine*, tests administered to eight users and nine nonusers at the Monell Chemical Senses Center in Philadelphia demonstrated that long-term use of smokeless tobacco can elevate recognition thresholds for sweet, salty and bitter solutions.

International athletes must eat carefully. Special precautions are needed to prevent gastrointestinal illnesses among athletes competing in foreign countries. According to Jacqueline Berning, R.D., a nutrition consultant for U.S. Swimming (the governing body for U.S. competitive amateur swimming), 90% of the U.S. swimming team and staff developed severe diarrhea within three days of arrival and 60% suffered from vomiting at the World Championships for Aquatic Sports, held last year in Madrid. Although the U.S. team still placed first overall, individual performances suffered. Unfamiliar food and water, less refrigeration, and use of foods from street vendors played a role in the illnesses.

Fluoride classic revised. The third (1986) edition of *Fluorides and Dental Health* has been published. Edited by Ernest Newbrun, D.M.D., Ph.D., the 289-page textbook covers fluoride metabolism and toxicology, community water fluoridation, fluoride supplements and dentifrices, topical fluorides, and the legal, economic and political aspects of fluoridation. Copies are \$35.75 from Charles C Thomas, Publisher, 2600S. First St., Springfield, IL 62794.

Notable quote. "If health claims are permitted on food product labels without regard to whether they are broadly important, the public will soon be deluged with health messages of all sorts. This will promote chaos and confusion in the marketplace rather than useful public education. Important health messages will be overwhelmed by noise from unimportant ones . . . Advertisers will try to make everything seem important for something." —Paul Sage, FDA Consumer Safety Officer, regarding FDA's proposed regulations for health claims on food labels [see NF 4:63-64].

Raw milk verdict overturned. The presiding judge has overturned the \$40,000 jury award to the family of Paul B. Telford. The jury concluded that Telford had died as a result of drinking contaminated raw milk sold by the Alta-Dena Dairy [see NF 4:57]. But the judge ruled that the evidence was insufficient to hold the dairy responsible. The family plans to appeal to a higher court.

FDA evaluating fish oil claims. According to an article in *Food Chemical News*, the FDA is evaluating claims made on the labels of fish oil capsules to see whether they are supported by existing scientific data. At a recent talk, an FDA official said that higher intake of fish oil should be obtained by eating more fish and that the safety aspects of fish oil supplement use "have not been addressed." He also noted that the National Institutes of Health have begun several studies involving fish oil capsules.

Pharmacy slashes supplement stock. To cut costs, reduce waste, and deliver appropriate dosage levels, Methodist Hospital in Houston, Texas, has established standards for vitamin and mineral supplements stocked by its pharmacy. The standards were developed by a joint committee of the pharmacy and dietary departments and ratified by the executive committee of the medical staff. The criteria for selection were based primarily on the Recommended Dietary Allowances and guidelines developed by the American Medical Association's Department of Foods and Nutrition. Twelve categories were established and bids were obtained to select one product for most categories. The pharmacy now stocks 13 multiple-ingredient products instead of 107. Products containing single ingredients were not included in this process, and a "full complement" is still stocked [*Journal of the American Dietetic Association* 87:777-778 1987].

BOOK REVIEW

Title: *Never Satisfied—A Cultural History of Diets, Fantasies and Fat* (1986)

Author: Hillel Schwartz

Publisher: The Free Press, Div. of Macmillan, Inc., 866 Third Ave., New York, NY 10022

Price: \$19.95

Reviewed by: Manfred Kroger, Ph.D.

Histories of diets, food habits, and health have been written before. James Trager's *Belly Book* and Ronald Deutsch's *Nuts Among the Berries* are two of the most notable. But none is more satisfying than this one. Hillel Schwartz is a scholar; yet his style is absorbing, not stodgy. The depth and breadth of his work are conveyed by more than a hundred pages of notes and thousands of citations at the end of the book. More than a hundred trademarked products are discussed.

Most of the book's eleven chapters deal with the follies that typify the human relationship with food. A prologue sets the stage for the history of dieting, body shape and the business that surrounds them. Sylvester Graham is pronounced the first American "weight watcher" in Chapter 2, which also examines "thinness" in the age of Andrew Jackson. Then comes the Victorian era characterized by the American Disease of dyspepsia. Chapter 4 takes us to the turn of the century when gluttony was clearly associated with fatness and the "disease" of obesity. Fasting, Fletcherism, calorie-counting, and the diet drugs developed during this period are described in detail. Chapter 6, "The Measured Body," describes America's new-found fascination with weigh-

ing. Schwartz did extensive research into the development of scales—all sorts of them, from penny public scales to bathroom and kitchen models.

During and after the Depression, fatness became linked with circulatory disease and heart attacks and valid scientific pronouncements became common. But there has been no let-up in the moneymaking activities of those who sensed profits in all of this. Chapter 8 ("Thin Bodies, Fat Profits") describes the beginnings of our current low-calorie way of life; how the faddism of Graham, Post and Kellogg has evolved into blue-chip companies selling "light" food; and how new sweeteners are giving good old sucrose a run for the money.

Chapter 9 ("Baby Fat") contrasts the "fine fat baby" of the late 1700s and today's anorexic teens. The last two chapters discuss the "weightless" body, the current preoccupation with dieting and working out, as well as the "political economy" surrounding eating and body perception, in which Jane Fonda is a major figure.

The guiding principles for healthful eating are gradually being shaped by expert consensus instead of grandmother's folk wisdom, but we have a long way to go. Despite scientific progress, most Americans are still governed by irrational myths of the past. But Schwartz never chides us for being naive. He is the superb historian, holding up the mirror of the past for us to examine ourselves clearly. Oh, boy, do we look silly!

Dr. Kroger is Professor of Food Science at The Pennsylvania State University.

SUMA: A QUESTIONABLE NEW HERB

Varro E. Tyler, Ph.D.

P. T. Barnum's old adage about a sucker being born every minute seems applicable to unproven herbal remedies as well. Indeed, the two may be closely related. One of the most recent herbs of this sort marketed in the United States is suma, the dried root of a tropical plant native to the Amazon rain forests. It is being sold in capsules and compressed tablets containing 200 to 750 mg of the dried root and costing about 12 to 25 cents.

According to literature supplied by its producers, suma—or *para todo* (for everything) as it is known to the native shamans—is derived from *Pfaffia paniculata* (Mart.) Kuntze. However, *Index Kewensis*, the supreme authority on botanical nomenclature, designates the plant *Hebanthe paniculata* Mart.

The advocacy literature refers to suma as "Brazilian ginseng" and promotes it as an immune-enhancer or adaptogen, which supposedly helps the body adapt to new stresses by restoring natural immune resistance. The literature also notes that cancer is one of the main illnesses treated with suma in Brazil and claims that it has been used in the Amazon for at least 300 years as a tonic, aphrodisiac (sexual stimulant), and remedy for diabetes, tumors, and skin problems including wounds. If that is so, the drug has been a well-kept secret, for it does not appear in any of the numerous and extensive compilations of medicinal plants of the world.

Chemical studies of suma root have been conducted by Japanese investigators. They have succeeded in isolating and characterizing a new nortriterpene called pfaffic acid and six new saponin derivatives of that acid named pfaffosides A, B, C, D, E, and F. Preliminary tests revealed that certain of the pfaffosides inhibit the growth of cultured tumor cell melanomas (B-16). Of the six, pfaffoside F was the most active, causing inhibition at a concentration of 30 micrograms per milliliter.

This initial indication of antitumor activity is in-

teresting, of course, but not at all unusual. Activity of this sort has been reported for many of the constituents of the more than 40,000 plants screened for possible anticancer effects in the ongoing program of the National Cancer Institute. Yet not a single agent for general use in the treatment of human cancer has resulted from this intensive effort.

Often when unproven recommendations are made for this or that herb, we can at least take some comfort in knowing that the plant has been widely used as a folk medicine for hundreds or even thousands of years without reports of adverse effects. For example, the root of valerian (*Valeriana officinalis* L.) was used by the ancient Greeks and Romans, appeared on Anglo-Saxon remedy lists in the 11th century, has held official status in various editions of both the *United States Pharmacopeia* and the *National Formulary*, and is now widely marketed as a drug in Western Europe. Thus it is possible to characterize valerian as an apparently safe and effective drug even though it has not been approved as such by the U.S. Food and Drug Administration. The safety of suma, however, is completely unknown. While we are told that it is an ancient remedy, at least in Brazil, no such information appears in the medicinal plant literature. In addition, toxicity testing, either in animals or in humans, has never been reported in the scientific or clinical literature.

Lacking evidence that suma is either safe or effective for any condition, I consider it inappropriate for public consumption.

Dr. Tyler, Vice President for Academic Affairs at Purdue University, is an expert in pharmacognosy (the science of medicines from natural sources) and is author of *The New Honest Herbal* (1987), published by the George F. Stickley Company, Philadelphia.

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WHAT IS CLINICAL ECOLOGY?

Stephen Barrett, M.D.

"Clinical ecology" is based on speculation that multiple symptoms are triggered by hypersensitivity to common foods and chemicals. Advocates of this belief describe themselves as "ecologically oriented" and consider their patients to be suffering from "environmental illness," "cerebral allergy," "allergy to everything," or "twentieth century disease," which can mimic almost any other illness.

Clinical ecologists speculate that: 1) although one substance may not have an effect, low doses of different substances can add or multiply their effects; 2) hypersensitivity develops when the total load of physical and psychological stresses exceeds what a person can tolerate; 3) patients often crave and become addicted to foods that make them ill; 4) changes in the degree of exposure can affect that degree of sensitivity to offending substances; and 5) "hypersensitivity" that can be difficult to diagnose and treat. Some proponents have informed patients that they have "an AIDS-like illness."

According to proponents, potential stressors include practically everything that modern humans encounter, such as urban air, diesel exhaust, tobacco smoke, fresh paint or tar, organic solvents and pesticides, certain plastics, newsprint, perfumes and colognes, medications, gas used for cooking and heating, building materials, permanent press and synthetic fabrics, household cleaners, rubbing alcohol, felt-tip pens, cedar closets, tap water, and electromagnetic forces. Signs and symptoms are said to include depression, irritability, mood swings, inability to concentrate or think clearly, poor memory, fatigue, drowsiness, diarrhea, constipation, sneezing, running or stuffy nose, wheezing, itching eyes and nose, skin rashes, headache, muscle and joint pain, urinary frequency, pounding heart, swelling of various parts of the body, and even schizophrenia. Proponents state that virtually any part of the body can have "elusive symptoms for which no organic

cause can be found."

To diagnose "ecologically related" disease, practitioners take a history that emphasizes dietary habits and exposure to environmental chemicals they consider harmful. A physical examination and certain standard laboratory tests may be performed, mainly to rule out other causes of disease. Standard allergy tests are usually normal.

Various nonstandard tests are also used, the main one being provocation and neutralization. In this test, the patient reports symptoms that develop within ten minutes after various concentrations of suspected substances are administered under the tongue or injected into the skin. If any symptoms occur the test is considered positive and lower concentrations are given until a dose is found that "neutralizes" the symptoms. Elimination and rotation diets are used with the hope of identifying foods that cause problems.

In severe cases, patients may spend several weeks in environmental control units designed to remove them from exposure to airborne pollutants and synthetic substances that might cause adverse reactions. After fasting for several days, the patients are given "organically grown" foods and gradually exposed to environmental substances to see which ones cause symptoms to recur.

Treatment requires avoidance of suspected substances and involves lifestyle changes that can range from minor to extensive. Generally, patients are instructed to modify their diet and to avoid such substances as scented shampoos, aftershave products, deodorants, cigarette smoke, automobile exhaust fumes, and clothing, furniture and carpets that contain synthetic fibers. Extreme restrictions can involve staying at home for months or avoiding physical contact with family members. "Ecologically ill" patients may think of themselves as immunological cripples in a hostile world of dangerous foods and chemicals and an un-

caring medical community. In many cases, their life becomes centered around their illness.

During the past few years, clinical ecology has been investigated by three prominent scientific panels:

- The California Medical Association Scientific Board Task Force on Clinical Ecology conducted an extensive literature review and held a hearing at which proponents testified. Its report was published in February 1986 in the *Western Journal of Medicine*.

- The Ad Hoc Committee on Environmental Hypersensitivity Disorders established by the Minister of Health of Ontario, Canada, received submissions, heard testimony from a large number of professionals and laypersons, and observed practitioners at work. Their report, which was more than 500 pages long, was reviewed by an expert advisory panel which published its recommendations in September 1986.

- The American Academy of Allergy and Immunology (AAAI) published a position statement on clinical ecology in its August 1986 *Journal of Allergy and Clinical Immunology*. The statement was produced by AAAI's Practice Standards Committee and was based on an extensive literature review and comments by AAAI members.

All three groups concluded that clinical ecology is speculative and unproven. The CMA Task Force stated that "clinical ecology does not constitute a valid medical discipline" and should be considered "experimental" only when its practitioners begin to use scientifically sound experimental methods. The task force also expressed concern that unproven diagnostic tests can lead to misdiagnosis that results in patients becoming psychologically dependent, believing themselves to be seriously and chronically impaired. The Canadian experts pointed out that since diagnosis of "environmental hypersensitivity" is based on diagnostic tests of unproven reliability, it is impossible to make definitive statements about its prevalence. AAAI said that "although the idea that the environment is responsible for a multitude of human health problems is appealing, to present such ideas as facts, conclusions, or even likely mechanisms without adequate support is poor medical practice" and that "advocates of this dogma should provide adequate studies . . . which meet the usually accepted standards for scientific investigation."

Rejection by the scientific community has not dampened the enthusiasm of clinical ecologists, about 400 of whom belong to the American Academy of Environmental Medicine (formerly called the Society for Clinical Ecology). This group, which holds meetings and publishes a quarterly journal, is composed mainly of medical doctors and osteopaths. Last year the journal announced that the paper on which it is printed had been changed because several readers had complained

that the old paper had made them ill. In the same issue, the editor complained that he wasn't receiving enough acceptable manuscripts to maintain a four-times-a-year schedule.

The Human Ecology Action League (HEAL), formed in 1976, is composed mainly of laypersons and has chapters and support groups in about 100 cities. It distributes physician referral lists and publishes *The Human Ecologist*, a quarterly magazine of news and advice for patients and their families.

One area of great concern to proponents is whether insurance companies will pay for their treatment, which can be quite expensive. Advice on how to press for such payment is available from HEAL. In 18 cases reported to the Canadian committee, patients bore an average annual cost of \$4,463, with a range from \$400 to \$12,378, most of which was not covered by insurance companies or government programs.

In the United States, many suits have been filed by "ecologically ill" patients seeking reimbursement from insurance companies. In January 1987, the Association of Trial Lawyers of America voted to establish a clearinghouse on ecological illness and its legal aspects. The proposal's author was Earon S. Davis, J.D., M.P.H., a former executive director of HEAL, who publishes the bimonthly *Ecological Illness Law Report* and operates a referral service for 200 interested attorneys.

Many doctors who treat "environmental illness" believe that they themselves have it. In 1977 a federal tax court ruled that the extra cost of "organically grown" foods could be deducted as a medical expense by Theron Randolph, M.D., a leading proponent, and his wife, Janet. The Randolphs claimed that Janet experienced mental confusion, crossed eyes, and difficulty in walking when she inhaled or ingested contaminants, and that Theron had suffered from loginess, malaise, headaches, nausea and anorexia due to contaminated foods.

A few practitioners who consider themselves clinical ecologists use computerized galvanometers to diagnose "energy imbalances" and select homeopathic remedies or other products to correct these imbalances.

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Although the FDA considers such devices "a significant risk" to the public and has been "investigating" them for more than a year, it has not yet attempted to stop their use.

Critics of clinical ecology have suggested that "environmental illness" is psychosomatic although its symptoms don't fit clearly into any disease category. Patients in this situation are often relieved to get a "physical" diagnosis which encourages them to play an active role in their care. However, two recent studies suggest that many of them give up much more than they get.

In the January 1986 *Archives of Internal Medicine*, Abba I. Terr, M.D., an allergist affiliated with Stanford University Medical Center, reported on 50 patients who had been treated by one or more of 16 clinical ecologists for an average of two years. He had evaluated most of these patients because they had made a Worker's Compensation claim for industrial illness. Although all had been diagnosed as "environmentally ill," Dr. Terr could find no unifying pattern of symptoms, physical findings or laboratory abnormalities. Eight of the patients had not gotten their symptoms until after they had consulted the clinical ecologist because they had been worried about exposure to a chemical. Eleven had had symptoms caused by preexisting problems unrelated to environmental factors, and 31 had multiple symptoms. Their various treatments included dietary alterations (74%), food or chemical extracts (62%), an antifungal drug (24%), and oxygen given with a portable apparatus (14%). Fourteen of the patients had been advised to move to a rural area, and a few were given vitamin and mineral supplements, gamma globulin, interferon, female hormones and/or oral urine. Despite treatment, 26 patients reported no lessening of symptoms, 22 were clearly worse, and only two improved.

Noting that the provocation-neutralization test played a major role in the misdiagnosis of most of the patients he examined, Dr. Terr pointed out that scientific studies have shown it is unreliable. He concluded that although exposure to chemicals can cause disease, it is unlikely that the diagnostic and treatment methods of clinical ecology are effective. He also concluded that

its methods and theories appear to cause unnecessary fears and lifestyle restrictions.

Carroll M. Brodsky, M.D., Ph.D., professor of psychiatry at the University of California (San Francisco) School of Medicine, made similar observations after studying eight people who had filed claims for injury primarily by airborne substances following diagnosis by clinical ecologists [*Psychosomatics* 24:731-742, 1983]. He concluded that they became "adherents of physicians who believed that symptoms attributed by orthodox physicians to psychiatric causes are in fact due to common substances in air, food, and water." He also stated that clinical ecologists "neither promise nor give hope of eliminating the offending condition, and the patients do not seem to expect it . . . [They] seem content with their condition and with the reassurance that their symptoms have a physical cause . . . Yet we must also recognize that these patients have had symptoms for many years, and whether seen as neurasthenic, hypochondriacal, or phobic, they are among the most resistant and difficult to treat . . . These patients search for healers who will provide them with an explanation of their experiences and symptoms that makes sense to them and fulfills a number of psychological needs."

Is clinical ecology ever effective despite its scientific shortcomings? Do its practitioners do more harm than good? These questions can be answered only through careful observation of large numbers of patients for several years, beginning with their first visit to a practitioner. As far as I can tell, proponents have neither the inclination nor the ability to carry out such studies, and nonbelievers don't feel there is sufficient benefit to invest the large amount of time and expense that would be required. Meanwhile, in my opinion, a high degree of skepticism is justified.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 21 books including *Vitamins and "Health" Foods: The Great American Hustle*. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery. His investigation of clinical ecology was subsidized by the American Council on Science and Health.

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“CANDIDIASIS HYPERSENSITIVITY”

Stephen Barrett, M.D.

Have you ever taken antibiotics on a frequent basis? Have you ever been troubled by premenstrual tension, abdominal pain, or loss of sexual interest? Do you crave sugar, breads or alcoholic beverages? Do you have recurrent digestive problems? Does exposure to tobacco smoke provoke moderate to severe symptoms? Do you experience fatigue, depression, poor memory or nervous tension? Are you bothered by hives, psoriasis or other chronic skin rashes? Have you ever taken birth control pills? Are you bothered by headaches? Do you feel bad all over without any apparent cause?

According to an article in the April 1986 *Redbook* magazine: “If you have three or four ‘yes’ answers, yeast possibly plays a role in causing your symptoms. If you have five or six ‘yes’ answers, yeast probably plays a role in causing your symptoms. If you have seven or more ‘yes’ answers, your symptoms are almost certainly yeast-connected.” The article’s author was said to be “on her way to recovery” from a debilitating case of “the yeast syndrome.” In the same issue, an ad from Nature’s Way Products, of Springville, Utah, invited *Redbook*’s 12 million readers to “Take the Yeast Test,” by tabulating their answers to similar questions.

The yeast in question is *Candida albicans* (sometimes referred to as monilia), a fungus normally present in the mouth, intestinal tract and vagina. Under certain conditions, it can multiply and infect the surface of the skin or mucous membranes. Such infections are usually minor, but serious and deeper infections can occur in patients whose resistance has been weakened by other illnesses.

Promoters of “candidiasis hypersensitivity” claim that even when signs of infection are absent, the yeast can cause or trigger multiple symptoms such as fatigue, irritability, constipation, diarrhea, abdominal bloating, mood swings, depression, anxiety, dizziness, unexpected weight gain, difficulty in concentrating, muscle and joint pain, cravings for sugar or alcoholic beverages, psoriasis, hives, respiratory and ear problems, menstrual problems, infertility, impotence, bladder infections, and prostatitis. According to its promoters, 30% of Americans suffer from “candidiasis hypersensitivity.” Many clinical ecologists view it as an underlying cause of the “environmental hypersensitivity” or “immune system dysregulation” that they postulate. It is also being touted as an important factor in AIDS, rheumatoid arthritis, multiple sclerosis, and schizophrenia as well as “hypoglycemia,” “mercury amalgam toxicity” and other fad diagnoses.

Nature’s Way manufactures Cantrol, a “complete program to fight yeast infections.” The program includes: acidophilus (“to help keep yeast colonies under control”); vitamins, minerals, co-enzymes and polyunsaturated fatty acids (“to help strengthen the immune system”); Pau d’arco (“a popular South American herb”); and “dietary guidelines, which if followed, can help you ‘starve’ the rampant yeast colonies.” A 21-day supply retails for \$23.95.

Ads for Cantrol, which have been running in “health food” magazines for several years, invite people to take simple self-tests that ask whether they have common symptoms and have ever taken antibiotics. According to the ads, positive responses to at least 3 out of 6 questions (or 6 out of 14 in some ads) indicate “a high or very high probability” of yeast infection. Last year ads began stating (in very small print): “This self-test is provided for general information only and is not intended to be used for self-diagnosis without the advice and examination of a health professional.” But these ads also say, “If you suspect you have a *Candida albicans* infection, put Cantrol to the test.”

Before the *Redbook* article was published, Nature’s Way notified retailers that an ad in the same issue would “specifically instruct the consumer to go to their local health food store to purchase Cantrol.” The ad contained a toll-free number for ordering the product or obtaining further information. According to a company official, more than 100,000 people responded.

The main promoters of “candidiasis hypersensitivity” have been C. Orian Truss, M.D., of Birmingham, Alabama, author of *The Missing Diagnosis* and William G. Crook, M.D., of Jackson, Tennessee, who wrote and published *The Yeast Connection*. Dr. Crook says his book was produced after a 1983 television talk show appearance drew 7,300 requests for further information.

According to Crook, “If a careful check-up doesn’t reveal the cause for your symptoms, and your medical history [as described in his book] is typical, it’s possible or even probable that your health problems are yeast connected.” He also claims that tests such as cultures don’t help much in diagnosis because “*Candida* germs live in every person’s body . . . Therefore the diagnosis is suspected from the patient’s history and confirmed by his response to treatment.”

Crook claims that the problem arises because “antibiotics kill ‘friendly germs’ while they’re killing enemies. And when friendly germs are knocked out, yeast germs multiply. Diets rich in carbohydrates and

yeasts, birth control pills, cortisone and other drugs also stimulate yeast growth." He also claims that large numbers of yeasts weaken the immune system, which is also adversely affected by nutritional deficiencies, sugar consumption, and exposure to environmental molds and chemicals. To correct these alleged problems, he prescribes allergenic extracts, antifungal drugs, vitamin and mineral supplements, and diets that avoid refined carbohydrates, processed foods, and (initially) fruits and milk.

Due largely to Dr. Crook's promotion, public interest in "candidiasis hypersensitivity" has grown rapidly. Several other books have been published, and many manufacturers offer "yeast-free" supplements which presumably are "safer" than ordinary ones. More than a dozen manufacturers are marketing such products as Candi-Care, Candida-Guard, Candida Cleanse, Yeast Fighters, Yeast Guard, and Yeastop. In *Health Foods Business* one retailer reported serving about 150 "Candida customers" a week, with an average checkout ticket of \$80. Another said she had sold 350 copies of *The Yeast Connection* during the previous 18 months. Another retailer told *Natural Foods Merchandiser* that when she noticed how well the book was selling, she placed it on sale and set up a display in which copies were surrounded with yeast control products.

The American Academy of Allergy and Immunology (AAAI), the nation's largest professional organization of allergists, has issued position statements strongly criticizing the concept of "candidiasis hypersensitivity syndrome" and the diagnostic and treatment approaches used by its proponents [*Journal of Allergy and Clinical Immunology* 78:271-277 1986]. These AAAI position statements conclude: 1) the concept of candidiasis hypersensitivity is speculative and unproven; 2) its basic elements would apply to almost all sick patients at some time because its supposed symptoms are essentially universal; 3) overuse of oral antifungal agents could lead to the development of resistant germs that could menace others; 4) adverse effects of oral antifungal agents are rare, but some inevitably will occur; and 5) neither patients nor doctors can determine effectiveness (as opposed to coincidence) without controlled trials. Because allergic symptoms can be influenced by many factors, including emotions, experiments must be designed to separate the effects of the procedure being tested from the effects of other factors. Two years ago Dr. Crook told me he had no intention of conducting a controlled test because he was "a clinician, not a researcher."

The antifungal drug most often prescribed by proponents of "candidiasis hypersensitivity" is nystatin (Mycostatin, Nilstat), which seldom has significant side effects. However, they also prescribe ketoconazole (Nizoral), which has an incidence of liver toxicity (hepatitis) between 1 in 10,000 and 1 in 15,000 and has been

responsible for several deaths [*Journal of Infectious Diseases* 152:233, 1985]. For this reason it should be prescribed only for serious infections. Both of these drugs are expensive.

Last year two doctors from Loyola University Stritch School of Medicine reported seeing four young women whose nonspecific complaints included chronic fatigue, anxiety and depression [*Journal of the American Medical Association* 255:3250, 1986]. All four mistakenly believed they had disseminated candidiasis and were taking nystatin or ketoconazole, which had been prescribed by their family physicians. All had read *The Yeast Connection* and had carried the book into the office during their visits. One patient on ketoconazole had hepatitis, which resolved when the drug was stopped.

Worse yet, a case has been reported of a child with a severe case of disseminated candidiasis who had been seen by a "candida doctor" and given inadequate treatment [*New England Journal of Medicine* 314:854-855, 1986]. The report concluded that "the advice of yeast connection advocates may be inappropriate even for illnesses in which candida is implicated."

More than two years ago I asked the FDA to stop Nature's Way from claiming that Cantrol can prevent or treat yeast infections. (Such claims make the product an unapproved new drug that is illegal to market in interstate commerce.) An FDA official who forwarded my request to the Health Fraud Branch pointed out an additional problem: "The product's fanciful name also suggests its use in the control of cancer. Those in the know would find this suggestion reinforced by the representation that the product's ingredients include Pau D'arco, the notorious Brazilian herbal cancer cure. This and the claim that the drug strengthens the immune system subtly assert that the product is also a cancer remedy."

Despite the seriousness of this situation, I have seen no evidence that the FDA is doing anything to correct it. Nor have I seen any evidence that the state licensing boards are interested in protecting the public from the medical abuses described in this article.

AAAI's position statements on clinical ecology, candidiasis hypersensitivity syndrome, and unproven procedures for diagnosis and treatment can be obtained by sending a stamped, self-addressed 4" x 1/2" envelope to the American Academy of Allergy and Immunology, 611 E. Wells St., Milwaukee, WI 53202.

**COMING SOON
HOXSEY TREATMENT
STILL AVAILABLE**

BRIEFS

National Health Fraud Conference. The FDA and St. Mary's Hospital of Kansas City, Missouri, are co-sponsoring a conference for individuals, groups, and government agencies interested in fighting quackery. The meeting is scheduled for March 13-15 in Kansas City. The entrance fee is \$200, but some scholarships are available. To register or obtain more information, contact Linda Strub, St. Mary's Hospital, 2800 Main, Kansas City, MO 64108 (816-756-1222).

New quackery booklet. The FDA and Council of Better Bureaus have published a 9-page booklet, *Quackery and the Elderly*, which explains why the elderly are vulnerable and briefly discusses cancer, arthritis and "anti-aging" frauds. Free copies can be obtained from the Food and Drug Administration, HFE-40, 5600 Fishers Lane, Rockville, MD 20857.

B₆ and PMS. A double-blind study of 55 women who reported moderate to severe premenstrual mood changes found that vitamin B₆ improved autonomic symptoms (dizziness and nausea) but did not relieve depression or anxiety, which the researchers thought were more disabling [*Obstetrics & Gynecology* 70:145-149, 1987]. Participants in the study were given either a 50 mg vitamin B₆ tablet or a placebo three times a day with meals for three months. The researchers concluded, "In light of the potentially toxic effects of low doses of B₆ and the fact that our data do not clearly indicate supplementations to be of clinical significance . . . professionals should more closely reexamine the propriety of recommending this supplement to women with premenstrual syndrome."

Author withdraws from ADA. Shari Lieberman, R.D., author of *Design Your Own Vitamin and Mineral Program* [see NF Sept. 1987], has withdrawn from the American Dietetic Association (ADA). Ms. Lieberman, who advertises that she practices "preventive medicine, holistic health and progressive nutrition," was censured in 1985 for failing to adhere to the group's Standards of Professional Responsibility. In August 1987, Dr. Stephen Barrett asked the ADA to determine whether she was still violating its standards. When notified of this, she resigned.

New food products. According to *DFS-Dorland New Product News*, food manufacturers introduced 6,107 new products to U.S. markets during 1986, up 9% over 1985. The most active categories in 1986 were brownies, wine coolers, flavored seltzers, imported beers, soft drinks, isotonic beverages, premium cookies, chocolate bars, and blended juice drinks. Calcium-fortified foods, ethnic foods, and microwaveable foods also enjoyed success. During the first quarter of 1987, 1,725 products were introduced, a 23% increase over the same period in 1986.

United Sciences is defunct. The founder and five other former officials of United Sciences of America (USA) have settled the suits brought against them and the company by the Attorneys General of New York, Texas and California. Without admitting fault, they have agreed to pay \$35,000 to each of these states and to refrain from making any of a long list of unproven, misleading and/or illegal statements about USA's food supplement products. The company itself, which had declared bankruptcy in January 1987 [see NF 4:25-32], had its assets liquidated by auction on May 12th and no longer exists. However, its products, including a Youth Formula that had not been marketed, are now being sold by USA Star Products of Richardson, Texas, which notified former distributors that it had obtained the rights to market them.

Marketing trends. According to an article in *Delta Airlines' September 1987 Sky Magazine*, high-tech research companies can track the behavior of individual households from TV sets to checkout counters. One company, for example, can test the effect of commercials by recording what channels are being watched and comparing this with purchases made by household members as tabulated by computers at supermarket checkouts. Sky also reports a trend toward "megamarkets," supermarkets that contain upwards of 100,000 square feet of floor space, stock 70,000 items (four times as many as the "typical" supermarket), and generate revenues of \$2 million a week. They may also sell clothing and electronic equipment and provide a wide range of basic customer services such as dry cleaning and shoe repair. According to the magazine, "futurists envision patrons riding motorized minicarts up and down the aisles, tossing groceries into the front."

FDA seizes primrose oil. During the past few years, several companies have been selling capsules of evening primrose oil (gamma linolenic acid) with various claims that it is effective against high blood pressure, premenstrual syndrome, benign breast disease, obesity, brain damage due to alcohol, and hyperactivity in children. In 1985, the FDA notified its field officers to inform these marketers that evening primrose oil could not be sold legally in the United States. In February 1987, after several warnings, the agency seized capsules with a retail value of \$120,000 from Swanson Health Products of Fargo, North Dakota. When the company made no move to claim them, the capsules were destroyed under a court order.

"Life Extension" products seized. On February 26, 1987, FDA officials and U.S. marshals seized large quantities of Life Extension Products marketed by the Life Extension Foundation of Hollywood, Florida. The products included BHT (promoted for herpes and AIDS), DMSO (for arthritis and bursitis), Coenzyme Q₁₀ (for cardiovascular disorders and increased longevity), and Cognitex (to enhance mental function). Subsequently, the Foundation announced that it had sold the marketing rights for its nutrient products to Life Extension International, of Tempe, Arizona. If they remain independent of each other, the Foundation can promote the ingredients in the products, while Life Extension International can sell them without claims. Foundation president Saul Kent plans to promote legislation to weaken the FDA.

Aspartame passes another test. Researchers from Duke University have conducted a double-blind test on 40 people who reported experiencing headaches repeatedly after consuming products containing aspartame [*New England Journal of Medicine* 317:1181-1185, 1987]. Most of the subjects were well educated and overweight and had a family or personal history of allergic reactions. The incidence of headaches after aspartame (35%) was not significantly different from that after placebo (45%). No serious reactions were observed and the incidence of symptoms other than headache following aspartame was also equivalent to that after placebo. The researchers concluded, "This finding emphasizes the importance of double-blind studies to assess adverse reactions to a food or food ingredients." The study was supported by a grant from the NutraSweet Company. Reprints can be obtained from Susan S. Schiffman, Ph.D., Department of Psychiatry, Duke University Medical Center, Durham, NC 277110.

Comatose patient dies. Six weeks after the New Jersey Supreme Court authorized removal of her feeding tube, Nancy Ellen Jobes died. The court decreed that the patient's right to self-determination could supersede the treatment policies of a medical institution. Ms. Jobes had been comatose since 1980 as a result of an anesthesia accident [NF 3:7].

Drinking water hotline The U.S. Environmental Protection Agency has established a toll-free hotline for general and technical information about the quality of drinking water. The number is 1-800-426-4791 (382-5533 in the Washington, D.C. area). The line is open Mondays through Fridays from 8:30 a.m. to 4:30 p.m. Eastern Time.

"Diet doctor" sued. According to *Physicians Financial News*, Blue Cross and Blue Shield of Northern Ohio is suing under the federal Racketeer Influence and Corrupt Organizations (RICO) Act to recover money paid for fraudulent claims submitted by a doctor who was operating a diet clinic. Following a tip on the company's anti-fraud hotline, a claims analysis revealed that the doctor was the highest paid family practitioner in the plan's service area. Undercover investigators then posed as patients and found that treatment routinely consisted of a very brief discussion with the doctor, a weigh-in, and purchase of diet supplements. But following every visit, the doctor submitted a claim for one hour of individual psychotherapy at \$80.

QUESTION BOX

Q. What is modified food starch? Why is it added to foods?

A. Modified food starch results from the chemical treatment of raw starch. This treatment involves bleaching, oxidizing, or cross-linking (combining) starches with other substances to make them more useful and versatile in food formulations. Modified starches are found in such foods as soups, pie fillings, sauces, gravies, and infant foods, where they serve to control texture, viscosity, acid stability, and gel structure. Moderate additions of modified food starch to infant foods and other processed foods are not thought to pose any dietary hazard.

AVOIDING SALMONELLA INFECTIONS

Morris G. Mast, Ph.D.

"Salmonella" has almost become a household word during the past two years. Reports in the media imply that salmonella infections are something new and that human foodborne illness is increasing as a result. Although salmonellosis is actually not new and may not actually be increasing, it does deserve attention from everyone involved in food handling and preparation.

Salmonellae comprise a large group of bacteria that cause a variety of infections in humans and animals. The first species of salmonella was isolated in 1885 by D.E. Salmon, for whom the organism is named. Although the bacteria can be found practically everywhere, they are mainly associated with animals, especially in the gastrointestinal tract. Insects, rodents and pets—especially dogs, cats, turtles and birds—can also carry these bacteria. Humans become infected by eating contaminated food or through contact with a contaminated animal or human carrier. The most common disorder in humans—and the focus of this article—is a gastroenteritis which is usually mild and self-limiting. In addition to cramps and diarrhea, its symptoms can include vomiting, headache and fever.

Because salmonellosis is frequently mistaken for the flu, it is virtually impossible to determine the number of cases that occur each year. The Centers for Disease Control has estimated that in 1986 there were 37,000 cases of salmonellosis in the United States—a 50% increase over the number 10 years ago. However, at a national salmonellosis seminar in 1978, a USDA official said the incidence at that time could be anywhere from 20,000 to 2 million cases annually. So, although case reports have increased, it is unclear whether the problem is greater or doctors are simply more aware of it and therefore reporting it more often.

To reduce the incidence of salmonellosis, a two-pronged approach is required: 1) the food production and processing industries must make efforts to produce and process salmonella-free products; and 2) consumers and food service personnel must handle food properly.

Theoretically, it is possible to produce and process salmonella-free products. But such procedures are expensive and may be impractical. The poultry industry, for example, has pursued research efforts to control salmonella bacteria for many years. Studies have identified three factors that serve as vehicles for salmonellae to enter poultry populations: feed contamination, environmental contamination, and egg transmission. All three of these areas must be controlled simultaneously to eradicate the bacteria.

Would consumers be willing to pay the additional cost of producing and processing salmonella-free foods? Probably not, especially when they understand that simple precautions will prevent salmonellosis even when an uncooked product harbors the organism. The key principles are heat and cleanliness. Salmonella bacteria are readily destroyed when foods are heated to an internal temperature of 155°F, which is well below the 175-185°F range in which poultry is commonly cooked.

Problems in food handling result from recontamination, which can be reduced by adhering to the following guidelines:

- Don't use the same platters and utensils before and after cooking.
- Always wash your hands, kitchen countertops, utensils, dishes and cutting boards thoroughly with soap and hot water after contact with raw meat, poultry and other raw foods. You might even use separate cutting boards for raw and cooked meat. Never use the board for any food that will not be cooked unless you first wash the board thoroughly in detergent and water.
- When thawing frozen meat in the refrigerator, don't allow it to touch or drip onto other food.
- After cooking, don't allow meat, poultry and other foods to stand at room temperature for longer than two hours. Bacteria grow well under these conditions and thrive at temperatures between 45°F and 115°F. Keep foods below 40°F. Remember that foods contaminated with salmonellae may not smell or taste abnormal.
- Be on guard for pets with symptoms of salmonella infection. Pet feeding dishes, toys or bedding should not be allowed in the kitchen or near items in contact with family's food. Wash your hands thoroughly after handling pets and before preparing food. Teach your children to wash their hands before they enter the kitchen.

Everyone who handles foods should be educated about these basic practices. An ideal place to begin is in the elementary schools.

There's no need to panic about salmonellosis. Protection can be achieved by following the above guidelines.

Dr. Mast is a professor of food science at The Pennsylvania State University.

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HOXSEY TREATMENT STILL AVAILABLE

James A. Lowell, Ph.D.

Not long ago, at 7:00 a.m. on a sunny Saturday morning, a colleague and I boarded a bus with twenty others at the Ambassador Hotel in Los Angeles and headed south toward San Ysidro, California, and the Mexican border. Along the way, we stopped several times to pick up passengers, swelling our ranks to nearly forty. At the border we left our American bus and squeezed into a smaller Mexican bus which shuttled us to the cancer clinics in Tijuana.

The trip was sponsored by the Cancer Control Society, a Los Angeles-based group which promotes "alternative" therapies and preaches that cancer, heart disease, diabetes, arthritis and multiple sclerosis are "degenerative" conditions caused mainly by poor diet. Although medical science recognizes that diet and cancer are related, it does not believe that any of these diseases are caused by dietary deficiency or cured by dietary change. The Cancer Control Society, however, advocates dietary regimens and disproven drugs such as laetrile, which it claims is a vitamin deficient in persons with cancer. In fact, it supports virtually anything claimed to be a "nontoxic alternative" to the "cutting, burning and poisoning" used by scientific practitioners. It sponsors meetings, publishes a journal, sells publications, distributes a directory of practitioners who offer "nontoxic therapies," and provides lists of patients willing to give testimonials for such methods. Its Mexican tour operates several times a year and costs \$75.

Tijuana contains many modern buildings, and shopping centers are springing up everywhere. But filth and squalor are still very much in evidence. One clinic operator told us that after taking one quick look at the town, many potential patients return to the United States without even making the 15-minute trip to his clinic.

Our first stop was the Bio-Medical Center operated by Mildred Nelson, R.N. Carved into a hillside along the treacherously steep General Ferreira Avenue, this facility is located high above the city in a mansion

that was formerly a private residence. The clinic, surrounded by a high wall, is identified only by a small yellow sign with white letters.

After walking through a guardhouse door, we entered a spacious central courtyard containing manicured lawns, a pool, and a walk-in aviary. The house is a large two-story structure which contrasts with the unpretentious single-story stucco homes that surround it. Although modern in design, it incorporates a hodgepodge of architectural features, including a shake roof, yellow and white plastic awnings, and 20-foot Dorian columns, two of which flank oversized carved wooden doors. From its windows or the adjoining balcony, one can see for miles across Tijuana and into the United States. One end of the building has a dressing room and the other end houses several treatment rooms and Mildred Nelson's office. We were told that the second story is not used because it is unfinished.

The Bio-Medical Center treats cancer patients on an outpatient basis. While many treatments last only one day, certain laboratory tests or special cases may require that the patient spend one or more nights in a motel. When this is necessary, most elect to return to the cleanliness and comfort of the motels in San Ysidro.

Nelson's treatments are based on the secret formulas of the late Harry Hoxsey, who originally said they were passed down to him by his father. Later, however, he claimed that his great-grandfather had developed them in 1840 after one of his horses with a cancerous growth on its leg cured itself by grazing among herbs in a corner of a pasture. Hoxsey's father died of cancer in 1919, and his mother died of cancer two years later.

Hoxsey began promoting his method in the early 1920s. During the late 1920s, in Illinois, he was convicted three times of practicing medicine without a license. In 1930, he was permanently enjoined from violating the Iowa State Medical Practice Act. In 1936, after unsuccessful attempts to practice in other states, he moved to Dallas, Texas and continued to see patients at the

Hoxsey Cancer Research Foundation until vigorous action by the FDA between 1950 and 1960 forced him to stop. In various trials against Hoxsey, the government demonstrated that the patients he claimed to have cured fell into three categories: 1) those who never had cancer; 2) those who had been cured of cancer before they went to his office; and 3) cancer patients who still had their disease or had died despite Hoxsey treatment.

Hoxsey's operations were taken over by Mildred Nelson, who had worked for years as Hoxsey's chief nurse. Nelson told us she joined him in 1946 after he had treated her mother for skin cancer. Mildred said that she originally thought Hoxsey was a quack but accepted a job at his clinic and became so impressed after one year that she decided to stay. After the Texas clinic was shut down, she tried opening new facilities in several other locations in the United States. Finally, under Hoxsey's tutelage she moved to Tijuana and opened the Biochemical Research Institute a few doors away from the current clinic building. The structure now houses the clinic "pharmacy," where patients are sent to pick up their medications. Hoxsey, who had been suffering from a heart condition he blamed on persecution by the medical establishment, died in 1973, years after the Mexican operation was in full swing.

Nelson is a small woman with short-cropped grey hair and steel blue eyes who appears to be in her late 60s. While explaining the workings of her clinic, she was never without a cigarette smoldering in her tobacco-stained fingers.

During our visit, we spent over an hour interviewing her privately after we indicated that my colleague (Lynn) might be interested in treatment. Several years ago, Lynn had parts of both ovaries removed after a biopsy had revealed precancerous cells. Although there is no current evidence of malignancy, she is being monitored carefully by a cancer specialist.

Nelson began the interview by showing us around the clinic and explaining that her move to Tijuana was the result of persecution and vilification by the "establishment authorities" and the AMA. In Mexico, she said, she was free to help people without government interference. Then she told Lynn that "cancer always comes back" and that she would be in "extreme danger" without Hoxsey treatment. The treatment, Nelson claimed, was especially effective against ovarian cancers and would probably prevent recurrence. Even though Lynn is a teacher with a strong science background and several years of experience in investigating quackery, she was in tears by the time Nelson finished her promotional pitch. As we left, Nelson handed us a booklet entitled *Do You Have Cancer?*, which described the clinic and contained 12 pages of testimonials from patients who believed the Hoxsey regimen had helped them.

Nelson's outpatient treatment costs \$3,500, up from \$1,800 three years ago. The fee is for lifelong care, which includes the initial one-day treatment plus any return visits. Patients are encouraged to wait six months but may return sooner if necessary as long as they follow the recommended regimen. Laboratory fees of \$150-\$450 are extra and must be paid when tests are run. Special medications, which also cost extra, may be prescribed. Normally, at least 30% of the total cost must be paid on the first visit, with the balance due in monthly installments. Patients can obtain an itemized list of services rendered, but the clinic personnel will neither provide insurance forms nor help fill them out. This is because few insurance companies in the United States will knowingly reimburse patients for unproven treatments at Mexican clinics. Nelson says she will never turn people away for lack of money if they explain to her beforehand they can't afford to pay.

Patients checking in at the clinic are asked to complete a registration form which asks for diagnosis as well as identifying information. They are told that this is the best time to leave copies of medical records if any are available. Urine and blood samples are collected for standard tests and a medical history is taken by a physician. After undergoing physical examination, the patient is x-rayed, and in some cases computerized tomography scans (CT-scans) are obtained at a cost of \$350-\$500. After analyzing the test results and discussing them with other doctors at the clinic, the examining doctor gives the patient a diagnosis and recommendations for treatment.

Nelson's remedies are of two basic types, external and internal. External cancers are treated with a "red external paste," which contains antimony trisulfide, zinc chloride and bloodroot, and a "yellow external powder," that will literally burn off skin tissue. Until the advent of good surgical techniques, escharotics such as these were used to destroy external cancers. Unlike surgeons, however, such compounds are unable to distinguish between normal and abnormal tissues, so they can destroy large amounts of healthy tissue along with the cancer. In fact, during our visit we encountered one patient whose ear was being treated by Nelson. Most of the ear was missing.

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The "internal formula," used for internal cancers, is a liquid containing licorice, red clover, burdock root, *Stillingia* root, barberry, *Cascara*, prickly ash bark, buckthorn bark and potassium iodide. According to Nelson, this combination is supposed to restore the acid/base balance and "deal with the DNA," the genetic material of the body. This explanation is interesting because *nothing* was known about DNA when the original treatments were developed by Hoxsey's father and little was understood about acid/base balance during Hoxsey's lifetime. Other medications—which cost extra—include superoxide dismutase (SOD), vitamin B₁₂, Gerovital, DMSO, and some we have not encountered elsewhere: probolin liver, TST-100, rosette "cactus," and Shulte's medications.

Like the other Mexican clinics, Nelson's clinic also places its patients on a special diet. Hers excludes tomatoes, vinegar, alcohol, pork, bleached flour or white sugar, carbonated beverages, and spicy foods. Food supplements include yeast and iron tablets, vitamin C, and calcium capsules. Patients are advised to drink at least two quarts of fluid daily, including large quantities of grape juice diluted by half with water.

Nelson claims that her success rate in curing cancers is 80% if the lymphatic system is not involved. Melanomas and ovarian tumors respond best, she adds. While she says she has records to support such statistics, she is quick to point out that they might not be adequate for orthodox investigation. Much of her data come from patients who are treated and later call or write back saying they have been cured. Although she claims to have accurate records on every one of the thousands of patients she has treated, she also said she has no idea how many patients she treats each year.

Nelson also claims that the efficacy of her treatment has never been scientifically evaluated. That is untrue, however. In *The Medical Messiahs*, historian James Harvey Young describes how the National Cancer

Institute evaluated 137 case reports submitted by Hoxsey and concluded that they showed no evidence that his treatment had helped any of them.

In 1955 Senator John Haluska of Pennsylvania introduced Hoxsey to the State senate while holding Kathy Allison, a young girl from Indiana in his arms. In a lengthy oration, Haluska declared that Hoxsey had cured her cancer. However, eight months later she was dead.

In 1985, David Zinman, a medical writer for *Newsday*, interviewed patients undergoing the Hoxsey treatment. One was Betty Diede of Portland, Oregon. At first, her tumors seemed to shrink, but within six months they had obviously enlarged and she was back for further treatment. Another patient was Nellie Davis from Adelaide, Australia, whose colon cancer had spread to her liver. She told Zinman she felt much better as a result of the Hoxsey treatment, yet her tumors had enlarged so greatly that she had to wear a maternity dress to cover her swollen abdomen.

Another recent case was that of Karen Ziegler, a 12-year-old California girl who was diagnosed with stage II Hodgkin's disease in November 1983. Her parents refused orthodox therapy and instead took her to various unorthodox practitioners. According to *The Choice*, a publication that promotes unorthodox methods, Karen was treated at least twice with the Hoxsey preparations at the Bio-Medical Center. Nevertheless, she died on Christmas Day 1985 at the age of 14 from a disease whose cure rate is close to 90% with standard medical treatment.

Dr. Lowell, who has graduate degrees in botany and genetics, is Professor of Life Sciences at Pima Community College in Tucson, Arizona, and is vice president of the National Council Against Health Fraud. His recently revised book, *Health Hoaxes and Hazards*, is available for \$13.50 from the Nutrition Information Center, 255 N. Granada, #2058, Tucson, AZ 85701.

QUESTION BOX

Q. Is rheumatoid arthritis related to diet?

A. Not usually. Most investigations of this issue have not been rigorously designed. One well designed study has concluded that some patients with this condition may be helped [*Lancet* 1:236-238, 1986]. There have also been reports that short periods of fasting may help. However, it is likely that fewer than 5% of individuals with rheumatoid arthritis will improve after elimination from their diet of a specific food [*Annals of Internal Medicine* 106:619-621, 1987]. According to Frederic C. McDuffie, M.D., the Arthritis Foundation's Senior

Vice President for Medical Affairs, "In most individuals with rheumatoid arthritis who believe that their disease is worsened by a specific food, any improvement following elimination is probably a placebo effect."

The Arthritis Foundation recommends that rheumatoid arthritis patients who believe their disease is worsened by a food consult with their physician and undergo a trial elimination of the food under medical supervision to see whether any improvement results.

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ADVICE IN HEALTH FOOD STORES

Clare Aigner, R.D., M.S.

Do health food store personnel give reliable advice? And do they operate within the law? To explore these issues I posed five questions by phone or in person to salespeople from ten "health food stores" in Allentown, Pennsylvania and nearby communities:

Question #1: "My mother has been complaining that her eyes are sore, her vision is blurred, and she sees colored halos around bright lights. Do you have any suggestions?" These symptoms are typical of glaucoma, an eye disease which, if untreated, can cause blindness. So the correct answer is "See a doctor." Only seven of the ten retailers made a recommendation of this type.

Question #2: "I'm training for a wrestling tournament and need to lose ten pounds but keep my energy levels up. Do you have any advice?" Although the correct answer is to lose weight slowly with a balanced diet, six of the stores suggested amino acids or other supplements.

Question #3: "I lost 15 pounds in the last month. I don't know why and I'm concerned. Do you have any advice?" Since unexplained weight loss could be a symptom of hyperthyroidism, diabetes, cancer and many other potentially serious diseases, the correct answer is "See a doctor." Only three of the ten retailers advised this.

Question #4: "I'm pregnant, and my doctor told me to take calcium supplements. I heard that dolomite is a good source. Is it?" Although dolomite contains absorbable calcium, the FDA has recommended that pregnant women avoid dolomite because some samples have contained undesirably high levels of lead. Six stores said that dolomite is not the best source of calcium, but only three of the six mentioned the lead problem.

Question #5: I heard that bee pollen is good to take. Is it? Bee pollen costs about \$45/pound and contains no nutrients not readily obtainable from a balanced diet. It is falsely reputed to aid endurance and be a special source of energy. The only energy it can

provide comes from its caloric value, which is small. Bee pollen can also cause allergic reactions. Only four stores warned of its allergic potential, while the rest said it was a good energy source. One even claimed it was possible to live on bee pollen and water alone.

The table on pages 2 and 3 describes my results. In cases where correct advice was given, even though the reason behind it was wrong, I gave credit for a "correct" answer. Even so, the stores in my community gave correct answers less than half the time. Similar results were reported by researchers from the American Council on Science and Health in a survey of stores in New York, New Jersey and Connecticut published in the Council's May/June 1983 newsletter.

Only one store answered all five questions correctly. "We don't prescribe because it's against the law," a co-owner later told me. "We are not vitamin pushers. Most health food stores start out as vitamin stores and add a little food. We began eight years ago as a food store and added some vitamins. If you eat properly, you don't need them."

The American Dietetic Association (ADA) is collecting case reports of people harmed by inappropriate nutrition advice from bogus "nutritionists," health food store operators, and others. Since opening its registry in October 1986, the ADA has documented more than 100 cases.

Under federal laws, it is illegal to market products with oral claims that they can mitigate or cure disease unless these claims have FDA approval. Under state laws, only physicians and a few other types of licensed practitioners can diagnose and treat diseases. Health food store operators who recommend products for specific symptoms or conditions could be prosecuted for violating drug laws as well as for practicing medicine without a license. But government agencies have shown little or no interest in this problem.

	% correct	Blurred vision and halos around lights	How can a wrestler lose ten pounds and keep up energy?
Store #1	80%	✓See a doctor	✓Mentioned protein supplements but said it could be done with food
Store #2	20%	"Might be cataracts." Could try vitamin A (25,000 IU), zinc, and Eye-Bright herbal tea	Mentioned megavitamins, octacosanol and amino acids. Said "You can't get enough vitamins in food because soil is depleted."
Store #3	20%	✓See a doctor	Suggested All-in-1. Advised against carbohydrate powders
Store #4	60%	✓See a doctor	✓Said it could be done with three balanced meals. Advised taking a multivitamin supplement
Store #5	100%	✓See an optometrist	✓Said there are different viewpoints and presented alternatives. Said it could be done with regular food
Store #6	20%	It might be a nutrient deficiency or even a digestive problem. Suggested beta-carotene.	Suggested grapefruit diet, carbohydrate powders, Amino-Fuel, ornithine, arginine, phenylalanine and "vitamin B ₁₅ "
Store #7	60%	✓See a doctor or nutritionist	Suggested carbohydrate powder
Store #8	0%	Suggested Eye-Bright herbal tea	Suggested arginine, ornithine and amino acid complexes
Store #9	80%	✓See an optometrist	✓Go to "a place where they can determine your nutritional needs"
Store #10	20%	✓See an ophthalmologist. Also said it could be cataracts or "vitamins—you get to that age and your body doesn't make B-vitamins"	Suggested arginine, ornithine and glutamine
% correct	46%	70%	40%

During the past few years, dietitians have gained passage of licensing laws in seventeen states, nine of which also define and regulate the practice of nutrition. These laws allow health food retailers to give limited advice about diet and use of their products, but do not permit nutritional assessment or counseling. In 1987, Florida passed a law forbidding the advertising, labeling or commercial distribution of any product lacking FDA approval and represented to have an effect on blood

disorders, bone or joint diseases, kidney disorders, cancer, diabetes, gallbladder disorders, heart disease, high blood pressure, disorders of the ear, mental disease, mental retardation, paralysis, prostate gland enlargement, impotence, baldness, venereal diseases, breast enlargement, immune system disorders, life expectancy, stress and tension, the body's defense mechanisms, and several other conditions and body processes.

These laws make it riskier for health food stores

Unexplained 15-pound weight loss	Is dolomite a good source of calcium for pregnant women?	Is bee pollen good to take?
✓See a doctor	✓No, because it has lead in it	Yes—a good source of vitamins, minerals and energy; and good for allergies
"We have things for that. Come in."	✓No, because of lead. Suggested calcium carbonate	Yes—a good energy source. "You could live on water and bee pollen alone."
Suggested protein powder	Yes	Good for energy
Advised to find out why, but did not mention doctor. Mentioned protein and carbohydrate powders.	✓No, because it is difficult to absorb	Yes—good because it contains an enzyme that releases oxygen to the body
✓Get medical help	✓No, because of lead	✓Bee pollen provides only small amounts of energy
Said there are things, but couldn't guarantee them	✓No, because it is difficult to absorb	A good source of energy
Suggested protein powder	✓No, because of lead	✓Bad because some people are allergic to it
Suggested protein powder and B vitamins	Dolomite is good calcium source	A good energy source
✓See a doctor	Dolomite is all right but not the best. Recommended 1,000 mg	✓Bad because some people are allergic to it
Suggested amino acids and protein powders	Dolomite is an excellent source and is also good for the nerves	Good for allergies and energy
30%	60%	30%

to give" therapeutic" advice; but it remains to be seen whether these laws will be enforced.

Ms. Aigner is a dietitian employed by the Wood Company, a food service management company in Allentown, Pennsylvania.

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CANADIAN "HEALTH FOOD" SURVEY RELEASED

During the summer of 1986 the Canadian Health Protection Branch (the equivalent of the U.S. Food and Drug Administration) surveyed public perception of health foods, natural foods and the medicinal use of herbs. The survey, conducted by university students, asked twenty specific questions in face-to-face interviews with 4,557 urban and rural residents in five major population centers.

Two conceptions emerged from the survey's attempt to determine whether there is a generally held definition of "health foods." One is that health foods are basic foods such as vegetables, fruits, nuts, grains and dairy products that are free of chemicals or additives. The other is that health foods are fad foods that have little to do with good health and much with the promotion of products for profit. Almost two-thirds of those interviewed said there is a difference between health foods ("unprocessed, organic, California-type foods") and foods recommended for a healthy diet (Basic Four Food Groups, Canada Food Guide).

The survey also found:

Usage: When specifically asked, fewer than half of the respondents claimed to be regular users of "health foods." (Interpretation of this figure was complicated by the fact that many respondents perceived grains, nuts, fruits, vegetables and dairy products as health foods.) About one-third said they used "organic" foods and 18% used herbs for medicinal purposes. Forty-two percent of respondents said they took a daily vitamin and/or mineral supplement. Of these, 25% took a multivitamin, 14% took vitamin C, and 10% took calcium. Only 64% of respondents said they were aware that it is possible to damage their health by taking too much of vitamin or mineral supplements.

Sources: Most respondents who said they were users of health foods cited supermarkets as the shopping outlet they patronized most. Specialty stores scored second, although most respondents thought that prices were higher. Other significant sources were open air markets and farms, but not door-to-door sales, house parties and health professionals.

Medical value: About 24% of the respondents had treated themselves with either a food, a drink, or a diet supplement which they thought could cure a medical problem. When asked whether they had heard of any cures for arthritis, cancer or depression, Vancouver residents cited vitamin B-complex (47%) for depression; fiber (43%) for cancer; cod liver oil (24%) and garlic (11%) for arthritis, and vitamin C (19%) for cancer. Two other products associated with medical benefits were vitamin E (various skin conditions) and ginseng (virility and fertility). Spirulina and taheebo tea were not well known to the respondents.

Motivation: The enthusiasm of a friend was by far the most dominant influence on the consumer to buy a new and unfamiliar food or diet supplement. This was highest (44%) among youth but dropped off to 23% for the oldest age group. Store personnel reportedly influenced 30% of respondents.

Diet patterns: When asked whether there was anything they were trying to cut down on, 58% of women and 40% of men said sugar, 41% of women and 36% of men said fats, and 35% of women and 28% of men said salt. Coffee and red meat were mentioned also.

Pesticide use: About 27% of the respondents said they were opposed to the use of pesticides in the production of food crops, and 52% wanted controls on the use of pesticides.

False claims: When asked what action they would take if victimized by a false claim about a food, beverage or cosmetic, one-third said they would avoid buying the product again, and many preferred taking legal action. Only 18% would contact the place of purchase. Almost 80% of the people said that promoters of health foods should be required to show proof of the claims they make about their products. Only 12% said, "Let the consumer decide."

Nutrition knowledge: Three-fourths of respondents had never taken a nutrition course, this percentage being as high as 91% for the oldest age group. The three major sources of nutrition information were stated to be magazines, newspapers, and radio and television, in that order. The majority wanted more nutrition information supplied by the government and more nutrition education at various levels of schooling.

Copies of the report (Cat. No. H39-110/1987) can be obtained from the Health Protection Branch, Food Directorate, HPB Building, Tunney's Pasture, Ottawa, Ontario K1A 0L2.

QUESTION BOX

Q. Does the stomach shrink when food intake is very small—for example, when someone is on a diet?

A. Contrary to popular belief, the stomach does not shrink after periods of limited food intake. The empty stomach is a flabby bag of predetermined size. When food is eaten, the stomach expands to accommodate it. As the food leaves the stomach, the smooth muscles contract and allow the stomach to resume its original shape. When food intake is low for long periods of time, the stomach does not shrink but merely remains its original size.

BRIEFS

Fiber labeling petition. The Center for Science in the Public Interest (CSPI) wants the FDA to order disclosure of dietary fiber content (grams per serving) on all nutrition labels. In 1979, the agency said it would not do this until there is: 1) a clearer consensus on a definition of dietary fiber; 2) methods of analysis are developed; and 3) the significance of fiber in the diet is better understood. According to CSPI's petition, all of these criteria have been met. CSPI also wants the FDA to take regulatory action against misleading claims, many of which are quoted in the petition.

Comatose patient dies. Six weeks after the New Jersey Supreme Court authorized removal of her feeding tube, Nancy Ellen Jobes died. The court decreed that the patient's right to self-determination could supersede the treatment policies of a medical institution. Ms. Jobes had been comatose since 1980 as a result of an anesthesia accident [NF 3:7].

Reagan and bee pollen. According to *Parade Magazine*, President Reagan has been eating bee pollen since 1961 and says it is an energy restorative. The company which supplies it—as 153-calorie snack bars—claims that bee pollen has rejuvenating properties and helps Reagan maintain his natural hair color.

Laetrile case ends. As instructed by the U.S. Court of Appeals, Federal Judge Luther Bohanon has ended injunctions he issued in 1977 that prohibited government agencies from interfering with the importing of "personal supplies" of laetrile by "terminal" cancer patients. Bohanon also dismissed the lawsuit that prompted the injunction. The plaintiff was Glenn Rutherford, who believed that laetrile had cured his cancer (contained in a rectal polyp) even though it had been treated by cauterization in its early stages. Since laetrile lacks FDA approval, marketing it in interstate commerce remains illegal.

New help for quackery victims. The National Council Against Health Fraud has established a Task Force on Victim Redress to help victims of quackery obtain competent legal assistance. The task force will also help government agencies prosecute cases involving quackery and health fraud.

Adolescent vitamin use. A study of 163 students in rural Iowa high schools found that 64% thought natural vitamins were better than manufactured ones, 56% thought that most teenagers need vitamin and mineral supplements, 50% thought people who felt tired and run-down probably need more vitamins and minerals, and 47% thought extra vitamin C prevents colds [*Journal of the American Dietetic Association* 87:1063-1065, 1987]. Supplement use was reported as almost daily by 16%, several times per week by 7%, several times per month by 13%, and less often during the past year by 21%. The higher the level of false beliefs, the more likely students would state that vitamins gave them energy, cured their colds, made them feel nutritionally safer, helped them perform better in sports, and/or made them healthy.

Food stamps for vitamins? U.S. Representative Mickey Leland (D-TX) has asked the U.S. Department of Agriculture to allow recipients of food stamps to use them to purchase nutritional supplements. Leland, who chairs the House Select Committee on Hunger, announced this in September at the annual conference of the Council for Responsible Nutrition (CRN), a trade association for supplement manufacturers and major distributors [see NF 4:38-39]. He also asked CRN members to set up pilot programs to help inner-city school children or the elderly to "give your fellow citizens and the government proof of the value of supplements that cannot be denied." *Editor's note:* Although some people might benefit from such a program, a poor diet plus supplements can still be a poor diet. Rather than encourage supplement use, it would be better to promote dietary improvement.

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Study finds no sugar-hyperactivity link. Researchers at the National Institute of Mental Health have found no link between sugar, aspartame, saccharin and hyperactivity in a double-blind test of 30 preschool boys [*American Journal of Psychiatry* 144:1487-1490, 1987]. Reprints can be obtained from Markus J.P. Kruesi, M.D., Child Psychiatry Branch, National Institute of Mental Health, 9000 Rockville Pike, Bldg. 10, Rm. 6N240, Bethesda, MD 20892.

Beech-Nut pleads guilty. Beech-Nut Nutrition Inc. has pleaded guilty to 215 felony counts of adulteration under the Food, Drug, and Cosmetic Act for selling flavored sugar water labeled as apple juice for babies [see NF 3:91]. In a plea bargain, the company admitted shipping the bogus juice between December 1981 and March 1983 and agreed to pay a \$2 million fine plus \$140,000 for investigative costs.

Roche ads improve. For many years, Hoffmann-La Roche has engaged in misleading advertising campaigns to promote supplements to pharmacists as well as the general public. Since 1979, various campaigns have suggested that busy people need supplements for "insurance," that biotin should be included in supplements (even though dietary deficiency is virtually nonexistent in the United States), and that supplements of "Protector Vitamin E" protect against inadequate dietary intake (despite the fact that vitamin E deficiency has never been reported on a dietary basis in an American adult). However, Roche's latest campaign does not mention supplementation. It merely describes "six of the ways to help reduce your risk of cancer": 1) stop smoking; 2) include fiber in your diet; 3) cut down on fats; 4) eat foods high in vitamins C and E; 5) have regular medical check-ups; and 6) eat foods rich in beta-carotene. Hoffmann-La Roche produces most of the bulk nutrients repackaged by other manufacturers.

NEW THOMPSON COMPANY CAMPAIGN IS MISLEADING

Stephen Barrett, M.D.

The William T. Thompson Company of Carson, California, which is probably the health food industry's most prominent supplement manufacturer, has developed an "informational packaging" system it predicts "will change the vitamin business forever." Twelve of its products are now being sold with "progress reports" that explain the supposed rationale for each product and relate it to published research. The company has also opened a research center" to provide information to retailers and consumers.

The new packaging is quite striking. Each of the products is encased in clear plastic so that the bottle and the first and last pages of the report are visible. The reports are about 5" x 6" and are titled "Advances in Nutritional Research." The left side of the front page is bright orange, and the right side is white with black type which includes a prominent headline. The reports, which range from 2 to 20 pages, describe how nutrients are vital to body functioning and how the accompanying Thompson product can provide what your body needs.

According to Thompson's technical director John Foster, "the reports were reviewed by two sets of lawyers and submitted to the California Department of Food and Drug. There was no formal response, but in phone conversations an official told us that nothing in there alarmed them." Ray Wilson, a pharmacology specialist

with the Bureau, confirmed that he had met with Thompson representatives and looked over some of their proposed messages: "They came with the concept. We said that the information would be the labeling and that this would be all right if it were accurate and not misleading. But we did not do an in-depth review of what they wanted to say."

Here is my "in-depth review" of the products and the messages in their published brochures:

- *Muscle Revitalizers* is said to be "a unique combination of vitamins, minerals, amino acids and botanicals formulated to aid your own muscle recovery process by providing your body with the nutrients to help repair muscle tissue and replenish the nutrients that strenuous activity depletes. Thompson Muscle Revitalizer is the repair kit you swallow." While it is true that ingredients in the product perform useful functions in the body, they are readily obtainable from food.

- *Energy Maximizers*, which contains bee pollen, is said to "help your body maximize its natural energy generating potential." The report states that bee pollen, "has been used extensively as a dietary supplement by athletes," but fails to indicate that scientific studies do not support its use.

- *Omega-3*, a fish oil supplement, is said to be able—together with proper diet and exercise—to help lower blood cholesterol levels. Although exercise and

dietary measures are proven, fish oils have not been studied enough to determine whether supplementation is safe and effective.

- *Ultimate C* contains 500 mg of vitamin C and 5 mg of zinc. One sentence of the report notes that "research does not seem to support the theory" that vitamin C will prevent colds. But the rest of the report relates vitamin C to immunity and claims (falsely) that our bodies don't store it well.

- *Immune System Fortifiers* are promoted with the claim that "today's stressful lifestyles, and environmental toxins, can overwork the immune system leaving it vulnerable to attack and susceptible invasion by virus, bacteria, and various microorganisms." I don't believe that "environmental toxins" cause infections or that supplementation boosts immunity (except in seriously malnourished individuals).

- *Calcium Magnesium Formula* is pitched by telling why adequate calcium intake is important. The report is accurate but provides no help in judging when supplementation might be appropriate.

- *Fizzycal*, which contains calcium, magnesium and vitamin D, is offered as an alternative to milk.

- *Diet Support* is a reasonably formulated multivitamin/mineral product that contains 100% of the U.S. RDA for most of its ingredients. Noting that many popular diets are unbalanced, the report suggests that a sup-

plement be taken to help ensure that good health is not compromised. This is misleading because most dieters don't need supplements.

- *Multivitamin Mineral Formula for Women* is promoted with suggestions that it is difficult for women to get the nutrients they need from food, even if they eat a balanced diet. This is untrue.

RDA+ contains 100% of the U.S. RDAs for vitamins and minerals plus extra amounts of "The Protector Vitamins: beta carotene, E and C." The booklet suggests (falsely) that the American diet contains so many "heavily processed foods" that getting the nutrients we need is difficult. The "Protector Vitamin" concept is also misleading because there is no evidence that above-RDA amounts protect against anything.

- *Essential 32* is pitched with the idea that it is more complete than other multivitamin supplements because it contains all of the essential amino acids. This is absurd because the American diet is not deficient in amino acids.

- *PMS Basic* contains vitamin B₆, vitamin E, and magnesium. The retailer from whom I obtained the product said that the "progress report" was out of stock and supplied a package insert instead. The insert describes a long list of symptoms which the ingredients in the product supposedly can help. Claims of this type for a product are illegal without FDA approval.

MORE B₆ TOXICITY REPORTED!

Neurological symptoms have been reported in more than 100 women who took vitamin B₆ for more than six months [*Acta Neurologica Scandinavica* 76:8-11, 1987]. To obtain these data, all patients taking B₆ who were attending a private practice in London specializing in premenstrual syndrome were asked whether they were experiencing altered sensations in their arms, legs or skin, or had noticed unexplained pains or muscle weakness. They were also asked to have their serum B₆ levels checked. Those who reported symptoms underwent neurological evaluation.

The normal range for serum B₆ is 3.16 to 18 nanograms per milliliter. (A nanogram is one billionth of a gram.) Levels greater than 18 ng/ml were found in 172 women, of whom 103 complained of neurological symptoms. Of these, 20% had taken less than 50 milligrams (mg) of B₆ per day, 38% had taken at least 50 mg but less than 100 mg, 31% had taken at least 100 mg but less than 200 mg, and 11 had taken at least 200 mg but less than 500 mg. (The Recommended Dietary Allowance is 2 mg/day.)

The symptomatic women had taken B₆ for an average of 2.9 years, with a range from six months to

over five years. Their symptoms included twitching, bone pains, abnormal skin sensations (pins and needles, numbness, burning, crawling, and itching), muscle weakness (including difficulty in walking, running, and holding things) and the feeling of electric shocks down the spine. Many of the women feared that they had multiple sclerosis, and a few had undergone cardiac evaluation because of shooting chest pains. Three months after stopping B₆, 55% of the women reported partial or complete recovery, and at six months, all had recovered completely. However, other researchers have reported a few cases of women who took 500 mg or more and did not recover completely. Research in dogs and rats has shown that moderate dosages of B₆ can cause reversible symptoms but high dosages cause permanent neurological damage.

This study indicates that women who take B₆ supplements for long periods of time can develop neurological symptoms even with dosages previously thought safe. The minimum dosage that can cause trouble is unknown but is less than the amount commonly prescribed for premenstrual tension.

MILK: WHAT'S IN A NAME?

Manfred Kroger, Ph.D.,

Only mammals can produce milk, which is actually the fluid of the mammary gland. All milks contain the same basic ingredients but in different amounts. Other fluids known by the name "milk" are merely plant exudates or other white liquids.

The milk of several hundred mammals has been studied. Except for milk from the major domesticated dairy animals, the usual way of naming a milk, and the least complicated, would be to state the conventional animal or species name and add the word milk to it. That would give us whale milk, reindeer milk, rabbit milk, cat milk and so on. However, tradition and convention have dictated the naming of milks and have caused some inconsistencies. Sometimes we use the breed or species name of the particular mammal, and other times we use the name of the female. And often we do so interchangeably. Horses' milk is usually called mares' milk. Ovine milk is either called sheep milk or ewes' milk. And caprine milk (goat milk) is sometimes goats' milk, but never she-goat milk. Asses' milk and donkey milk can be found in the historic literature, but never jenny ass milk. Similarly, dog milk, the kind a puppy would drink, sounds acceptable; not so bitch's milk. And "sows' milk" is preferred over hog milk, pig milk or swine milk.

The food consumed first by many humans is human milk, which is usually described and cataloged as such. Other correct terms are mother's milk (from one woman) or mothers' milk (the pooled milk of many donors, as in a human milk bank), and breastmilk (also breast milk), probably the current popular term used by lactating women (nursing mothers or breastfeeding mothers) and such organizations as La Leche League International and Natural Childbirth associations.

Breastmilk production can vary greatly from mother to mother. Some produce little or none, especially when malnutrition is present. Others can produce large amounts. The amount produced (or drunk by babies) every year is unknown. If 100,000,000 babies are born and nursed every year and receive about 1 pint (1 pound or ½ kilogram) of breastmilk daily for six months, the annual human milk production would be 9,100 million kilograms (4,136 million pounds or 481 million gallons).

World cow milk production is about 1 trillion pounds (450 million metric tons or 116 billion gallons), which is about 200 lbs/year for each of the 5 billion persons now inhabiting the Earth.

The terms cow's milk and cows' milk are often interchangeably and erroneously used. According to the rules of grammar, the former denotes the milk from a single cow, whereas the latter is mixed milk or herd milk, or milk in general. The term "cow milk" is hardly ever used. Cows' milk can also be called bovine milk — a term often used by scientists who publish their research results. For the same reason, the adjectives caprine, ovine, porcine and equine are used to describe work with milk of goats, sheep, sows and mares, respectively. There are even scientific papers dealing with murine milk, the lacteal secretion of the genus *Mus* to which the mouse and the common house rat belong.

Cows' milk comes from the mature female of the genus *Bos*. A female moose is also a cow, but her milk is not cow's milk but moose milk. There is a large market in the world for the milk of the water buffalo, the domesticated Asiatic buffalo of the genus *Bubalus*. That milk is usually called buffalo milk or buffaloes' milk. The American buffalo, by the way, belongs to the genus *Bison*, so its milk, about which scientists know very little, would have to be called bisons' milk.

Since there are several notable breeds of dairy cattle, we also have the specific and meaningful terms Guernsey milk and Jersey milk, for no other reason than to distinguish them from Holstein or Holstein-Friesian milk. Guernsey and Jersey milk have a higher fat content (about 6% instead of 4%) and look somewhat yellowish rather than white. (That's why you may see Golden Guernsey milk touted in an advertisement.) Brown Swiss, Ayrshire and Milking Shorthorn cows also provide milk, of course, but their milk (or is it milks?) is not labeled with a special name.

There are also differences among milks from the dairy industry's commercial standpoint. Standard market milk contains 3.25% fat, while low-fat milk contains 2% and skim milk (also called skimmed milk but never spelled skimmilk) contains less. Skim milk, in theory, contains no fat, but since absolutes are impossible to achieve, any milk with up to 0.5% fat can be called skim milk. Milk with more than 10% fat is called cream. Whipping cream has about 38% fat. And then there is dry milk, also called milk powder or milk solids. But that's another story.

Dr. Kroger is a professor of food science at The Pennsylvania State University.

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WIC REFORM MEANS MORE MOTHERS AND CHILDREN SERVED

Senator Tom Harkin

In the closing days of the 100th Congress, legislation passed that will dramatically improve the health and well-being of thousands of women and children in the United States. On January 8, 1988, the President signed the Commodity Distribution Reform Act into law.

The Special Supplemental Food Program for Women, Infants and Children — usually referred to as "WIC" — has been in place since 1972. But thanks to this new law, program directors will gain new leeway in allocating funds and be able to help as many as 630,000 additional participants.

Since its inception as an experimental program 16 years ago, the WIC program has provided food to help pregnant and lactating women, infants, and children age five and under improve their diets and reduce their chances of health problems caused by poor nutrition. Highly nutritious foods such as milk, cheese, eggs, cereal, peanut butter, beans and infant formula are provided to more than 3.4 million people each month.

To qualify for participation, women, infants or children at or near the poverty level must be found by a medical professional to be at nutritional risk. The medical evaluation includes checking for anemia as well as growth and developmental retardation.

The WIC program also provides nutrition counseling and coordination with ongoing preventive health care. Direct services include a health assessment, nutritional counseling, food vouchers, and monitoring of participating grocery stores. The combination of nourishing food, nutrition education, and preventive health care makes WIC unique and different from other federal food or health programs.

According to an extensive evaluation undertaken by the U.S. Department of Agriculture, WIC is one of the most efficient programs run by the federal government.

The average administrative cost per person is only \$8 per month, and the average food cost is a mere \$32 per person. Yet consider the proven benefits:

- WIC has contributed to a reduction of 20-33% in the late fetal death rate.

- The head size of infants whose mothers receive WIC during pregnancy increased measurably.

- Women who participate in WIC have had longer pregnancies leading to fewer premature births. This not only benefits the infants, but it saves millions of dollars in Medicaid bills that would otherwise have been required for intensive neonatal care. In 1985, newborn intensive care cost \$2.4 to \$3.3 billion, which is about \$15,000 per baby. The average cost of WIC benefits for a pregnant woman is under \$250.

- Each dollar spent in the prenatal component of WIC saved 49 cents in Medicaid costs during just the first 45 days of infant life, according to one study done in Missouri. Another Missouri study found that the federal government saved 83¢ in Medicaid costs for every dollar spent on WIC. The new law requires the Agriculture Department to conduct further studies to measure how much state programs can save during the first 60 days after birth as a result of WIC participation by pregnant women.

- A Yale University School of Medicine study found a remarkable decrease in the prevalence of anemia among low-income children in New Haven since the early 1970s. The researchers concluded: "The marked improvement can most probably be attributed to the nutritional supplementation with iron-fortified foods provided by the WIC program."

- WIC also appears to lead to better mental performance. Four and five-year-olds whose mothers participated in WIC during pregnancy had better vocabulary scores, and children who participated in WIC after their first birthday had better digit memory.

Despite the many benefits, however, problems arose with certain rigidities of program design. As originally designed, the WIC program was required to spend 80% of its budget on food, while the administrative costs were limited to 20% of a state's overall budget. This was mandated to ensure that the federal funds allocated for WIC would achieve their primary purpose: to provide nutritious food directly to at-risk women and children.

According to the USDA, infant formula purchases comprise approximately 30% of all WIC food costs and could amount to more than \$400 million in sales per year. Close to one-third of all infant formula purchased in the United States is purchased through the WIC program. Over the years, as the price of formula increased, a greater proportion of WIC dollars has been spent on infant formula. As a result, WIC directors sought ways to economize in this portion of their food budgets.

With approval from USDA's Food and Nutrition Service (FNS), which oversees the program, several states experimented with competitive bidding for their purchases of formula and achieved the result they had hoped for. While the average retail price of a 13-ounce can of concentrated iron-fortified formula is about \$1.40, Oregon obtained a net price of 60¢ per can, 60¢ a can, Mississippi 61¢ per can, and FNS itself 73¢ per can. Vermont and Ohio realized similar savings. Implemented nationwide, this would save \$242 million a year. According to a report by the U.S. General Accounting Office, if every WIC program in the United States saved comparable amounts in fiscal year 1988, between 221,000 and 630,000 additional eligible participants could be served at no additional cost. (Federal fiscal years run from October 1 through September 30.)

WIC directors, excited by the potential savings, wanted to use the "extra" food money to provide food to additional participants. Unfortunately, the 80/20 ratio mandated under the old law put a crimp in their plans. If a state managed to save a substantial amount of its food dollars by purchasing infant formula at a 40% discount, it would have additional food funds, but no additional administrative funds to cover the costs of certifying and delivering benefits to the additional recipients. And under the old law, participants could not receive food without also undergoing health screenings, receiving nutritional counseling and so on. As a result, the "extra" food money could not be spent. The regulation designed to ensure the efficient operation of WIC backfired against the very people it was designed to protect!

WIC directors from all over the country appealed to Congress for a legislative remedy. The Reagan Administration opposed changing the 80/20 formula, however. In hearings before the Senate Agriculture Subcommittee on Nutrition, which I chair, Assistant Secretary for Food and Consumer Services, John W. Bode testified against allowing any of the extra food funds to

be spent on administrative costs.

Nevertheless, the testimony of numerous state WIC directors and simple logic convinced my colleagues to approve an amendment which I introduced to enable WIC programs to realize additional savings through competitive bidding. As approved, the bill allows states to use 10-20% of the savings from rebates or competitive bidding for the costs of providing additional services. This is done by estimating the number of new participants a state will be able to serve under its revised infant formula pricing structure. Additional administrative funds are then allocated at the state's current rate of individual participant administrative cost.

Even after the new law takes effect, millions of needy and eligible women, infants and children will not be able to participate in the WIC program because of budget restrictions. WIC is not an entitlement program and therefore can serve only as many people as its annual appropriation permits. Although Congress has provided for some growth in the program through the years, it still reaches only 40% of those eligible. The 1987 WIC appropriation was \$1.66 billion, but the Congressional Budget Office estimated that it would require \$1.73 billion in 1988 just to maintain the current service level in fiscal year 1988. Congress finally approved the 1988 WIC appropriation at \$1,802,363,000, permitting a modest increase of services.

The need, however, continues to grow. According to the Children's Defense Fund, a respected public-policy advocacy group, the number of impoverished Americans has increased from 26 million during the 1970s to 32 million today, and one out of every five children under age six is poor.

Many of these children live in families with working parents. A family of three that has a full-time minimum-wage paycheck lives 28% below the poverty line. About 40% of poor children belong to a family whose incomes is less than \$4,000 per year.

Participation in WIC has increased by 73% since 1980, including 11% during the past two years. But the budget hasn't kept pace with demand. According to the Center on Budget and Policy Priorities, many states restrict entry into WIC and do not certify entire categories of eligible participants because there are no funds to

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serve them. At least 75 counties in the United States have no WIC program at all. Some states certify no children beyond their first birthday, regardless of whether they are anemic or have other medical problems. The Iowa WIC program, for instance, has to decide between serving toddlers in families making \$15,000 or infants in families making \$17,000. Other states deny service to children who are medically determined to be at risk but have not yet developed a medical problem. Administrative cost requirements discourage WIC administrators from encouraging breastfeeding.

Such practices undermine the preventive value that Congress intended for the WIC program. I am hopeful that our society will recognize how important it is to

ensure the health and well-being of future generations and that national and Congressional priorities will change. Meanwhile, we can only work to ensure that successful programs such as WIC are maintained and improved.

Senator Harkin (D-Iowa) is Chairman of the Senate Subcommittee on Nutrition. *Editor's note:* The Center on Budget and Policy Priorities, 236 Massachusetts Avenue, N.E., Suite 305, Washington, DC 20002, offers detailed reports on WIC legislative and administrative news as well as related maternal and child health developments. Its newsletter, published nine times a year, costs \$45.00/year for individuals and agencies and \$22.50 for students and nonprofit organizations.

BOOK REVIEW

Title: *The Right Dose — How To Take Vitamins and Minerals Safely* (1987)

Editor: Patricia Hausman, M.S.

Publisher: Rodale Press, Emmaus, Pennsylvania

Price: \$24.95

Reviewed by: Charles W. Marshall, Ph.D.

At last a book from Rodale Press which stresses the hazards of overdosing with nutrient supplements. The 528-page book even contains case histories of people treated for vitamin or mineral poisoning. I believe, however, that the book contains serious errors and has little practical value.

Ms. Hausman, a former staff member of the Center for Science in the Public Interest, holds a masters degree in nutrition from the University of Maryland. According to the book's jacket, she "spent two years delving through more than 4 million pieces of scientific research to find out what can and cannot go wrong when taking the oral supplements popular today." (With no days off, this would come to 5,479 "delves" per day.)

The book's first chapter pitches "nutrition insurance" with a chart on vitamin loss through cooking and lists 14 situations where "supplements may give your body a boost." Chapter 2 discusses her concept of safety and her belief that people generally have more to gain

than to lose by taking supplements. Seventeen chapters cover individual vitamins or minerals, and the final chapter covers three additional minerals. Most have a "Diet Detective" chart to help estimate your daily intake from food, and all offer recipes for foods rich in the nutrient under consideration. Each chapter also contains a table indicating the amount of the nutrient in common supplements.

The book's main pitch seems to be: To avoid missing out on many possible special health benefits, you can take supplements as long as you stay within a "safe" range. This sort of faith might make sense if dosages above the Recommended Dietary Allowances (RDA) offered proven health benefits to the average reader. I don't believe they do. In a few places she provides so much information and so many disclaimers that it is difficult to determine what she is actually recommending. But some of the dosages she considers safe appear too high.

Dr. Marshall, a retired biochemist, is author of *Vitamins and Minerals: Help or Harm?*, which won the American Medical Writers Association award for best book of 1983 for the general public and also became a special publication of Consumer Reports Books. Copies of the revised (1985) edition are available for \$12 from the George F. Stickley Co., 210 W. Washington Square, Philadelphia, PA 19106.

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BRIEFS

B₆ toxicity addendum. Dr. Katharina Dalton, who reported 103 cases of nervous system toxicity in women taking vitamin B₆ for premenstrual syndrome [see *NF* 5:7], has indicated that the lowest dosage among them was 20 mg/day for two years, while the shortest time was two months on 100mg/day.

Health Fraud Conference. The program has been announced for the National Health Fraud Conference to be held March 13-15 in Kansas City, Missouri. The meeting is intended to: 1) exchange information on current health fraud activities; 2) help government agencies, voluntary groups, and industry organizations to strengthen their health fraud programs; 3) increase networking links; and 4) provide guidance for disseminating educational materials to consumers. Speeches, workshops and exhibits will include: current trends; conducting investigations; filing complaints; organizing an antiquackery group; working with health insurers, legislators and the media; protecting the elderly; quack devices; and frauds related to arthritis, cancer, AIDS, allergy, nutrition, athletics, and mental health. Registration costs \$225, but multiple registrants from the same organization are \$200 each. Discount airfares are available through Eastern and Continental Airlines. Further information can be obtained from Linda K. Strub, National Health Fraud Conference Coordinator, 2800 Main—7th Floor, Kansas City, MO 64108 (telephone 816-753-5700, Ext. 2545).

New animal drug standards. The FDA has announced stricter safety standards for new veterinary drugs proposed for use in food animals. Manufacturers of any proposed animal drug that is potentially carcinogenic must now provide the government with a method to test food products from the treated animal for residues. The test must be sufficiently sensitive to reveal a level of residue that would ensure a maximum lifetime risk of 1 in a million. The previous limit of two parts per billion did not take potency of the carcinogen into account. Manufacturers have been required for several decades to provide the FDA with a residue assay of almost all drugs intended for use in food animals. However, the new standards define the test that must be submitted if a drug has caused cancer when fed to test animals. They also recommend a method for evaluating data obtained from lifetime studies of mice and rats fed high levels of the drug. About 80% of U.S. livestock and poultry receive some animal drug during their lifespan. Drug therapy has helped turn the chicken from a difficult-to-raise, disease-prone creature into a mass-produced food.

Anti-Quackery Litigation Fund. Victor Herbert, M.D., J.D., has filed suit against the American Quack Association, the National Health Federation (NHF), Kurt Donsbach [see *NF* Oct. 1987], Peter Joseph Lisa and 22 other individuals, groups and publications. The suit charges that after Lisa wrote a book falsely accusing Dr. Herbert of killing patients, the others conspired to disseminate this information and did other things intended to damage his reputation in order to discredit him as an effective critic of health frauds. At its annual convention in January 1988, NHF announced that a "First Amendment Free Speech Legal Defense Fund" had been set up and that nearly \$30,000 had been collected. Meanwhile, a fund has been set up to help Dr. Herbert finance his suit. Contributions can be sent to the Herbert Anti-Quackery Litigation Fund, c/o Michael K. Botts, Esq., P.O. Box 33008-N, Kansas City, MO 64114.

Alcohol warning considered. Legislation has been introduced into Canada's House of Commons to require marketers of alcoholic beverages to spend 15% of their advertising budget to warn about alcohol's possible dangers.

Vitamin C and colds. A controlled study has found that men who were given 500 mg of vitamin C four times a day were less likely than control subjects to acquire colds during a week of exposure to men infected with one particular cold virus. (During this week all were housed in special living quarters.) The vitamin C was taken for 3½ weeks before exposure and for two weeks afterward. During the period of exposure, 7 of the 8 men receiving the placebo but only 4 of the 8 receiving vitamin C contracted colds. However, 2 in the vitamin C group started shedding virus after they returned home. The placebo group had more severe symptoms. Although the number of subjects was small, the study involved only one cold virus, used subjects that had no antibodies to that virus, and checked vitamin C blood levels as before and during the study. The results were presented at a virology symposium last November by Elliot C. Dick, Ph.D., Professor of Preventive Medicine at the University of Wisconsin, who directed the study. However, he has indicated that no paper will be published until the experiment is repeated during 1988. Since many large experiments have found no preventive effect from vitamin C supplementation, further "positive" results will require careful interpretation and additional studies to determine if and when supplementation is practical. Dr. Dick's study was funded by Hoffmann-La Roche.

Table salt may facilitate low-sodium diet. A study has found that students on a low-sodium diet compensated only slightly for the reduced dietary sodium by adding table salt to their food [JAMA 258:3275-3278, 1987]. The 13-week study involved 11 students at the University of Pennsylvania who were enrolled in a study of diet and taste. During the first three weeks and the last week of the study, the students ate a normal hospital diet that was not restricted in sodium. For the remaining ten weeks, the sodium in their food was reduced but they had unlimited access to a saltshaker. Although the sodium content of their food was about 50% lower, ten of the students added table salt to compensate for less than 20% of the reduction. Previous studies have shown that people who sharply reduce the sodium level of their diet usually come to prefer food with less salt. In this study, however, the students did not change their preference and reported that the food they had salted tasted similar to the normal hospital food. The researchers suggest that since the saltshaker places salt on rather than in the food, subjects retained enough sensory experience with salty tastes to prevent preference changes. If this is true, changes in taste perception after dietary sodium is lowered may be due to less experience with salty tastes and not the amount of sodium ingested. The authors suggest that it is possible to lower sodium consumption and retain a palatable diet by consuming low-sodium foods but using a saltshaker. But studies using large numbers of individuals with different salting habits over longer periods of time are needed to indicate the best way(s) to reduce sodium intake.

Sodium and high blood pressure. A double-blind study has tested whether five men with "salt-sensitive" high blood pressure would react differently to sodium chloride (table salt) and sodium citrate [New England Journal of Medicine 317:1043-1048, 1084-1085]. After being placed on a low-sodium diet, each was rotated through one cycle in which a placebo was followed by sodium chloride and sodium citrate and another cycle in which the placebo was followed by the sodium products in reverse order. Only sodium chloride raised the subjects' blood pressure. The researchers emphasized that because the study was small, it provides no basis for making dietary recommendations for people with high blood pressure. Although most people ingest sodium mainly as sodium chloride, many ingest significant amounts of other sodium salts (ascorbate, bicarbonate and gluconate). Studies are needed to clarify how different sodium salts affect blood pressure in both normal and hypertensive individuals.

Iron in soybean hulls. Most iron found in high-fiber plants combines with the fiber and is difficult for humans to absorb. But the U.S. Department of Agriculture has identified an easily digested form of iron in fiber-rich soybean hulls. This discovery might lead to using soybean hulls to fortify breads and other baked goods with more iron and fiber. Further information on this subject can be obtained from Joseph Laslow, Physical Chemistry, Northern Research Center, USDA Agricultural Research Service, Peoria, IL 61604.

NATUROPATHIC ACCREDITATION

In September 1987 the U.S. Department of Education recognized the Council on Naturopathic Medical Education (CNME) as an accrediting agency for naturopathic schools. Currently there are two such schools, John Bastyr College in Seattle, Washington, which has been accredited by CNME, and National College of Naturopathic Medicine in Portland, Oregon. Accreditation by a federally recognized agency allows access to federal research grants and student loan programs. Naturopaths practice in most states, but are licensed only in Alaska, Arizona, Connecticut, Florida, Hawaii, Oregon, Utah and Washington. In these states they have the right to diagnose disease and to prescribe "natural" therapeutics. Some practitioners of naturopathy obtained their training many years ago at chiropractic schools and are licensed as chiropractors.

Naturopaths view diseases as the body's effort to purify itself, and claim to help the body heal itself by ridding it of toxins. Their methods include fasting, "natural" food diets, vitamins, herbs, tissue minerals, cell salts, homeopathic remedies, manipulation, acupuncture, massage, minor surgery, exercise and colonic enemas. Naturopathic education now consists of two years of basic sciences and two years of clinical naturopathy.

Like chiropractors, who have had a recognized accrediting agency since 1974, naturopaths use a wide variety of unscientific practices. But the accreditation system judges how programs are organized rather than the validity of what they teach. With accreditation behind them, naturopaths are working on licensure in more states.

STUDY FINDS SWIMMING INEFFECTIVE FOR WEIGHT CONTROL

David Steinman

Grant Gwinup, M.D., who is professor of medicine and chief of the division of endocrinology at the University of California's Irvine Medical Center, is frequently asked by patients to help them design exercise programs to lose weight. Commonly he prescribed swimming regimens for patients with orthopedic problems or injuries that prevented them from engaging in high-impact aerobic exercise.

For many years, Dr. Gwinup observed that most patients who swam for exercise enjoyed it but didn't seem to lose weight. He decided to test this observation with a controlled experiment.

Gwinup's landmark study — published in the *American Journal of Sports Medicine* [15:275-279, 1987] — involved 45 women, aged 20 to 40, whose weights averaged about 150 pounds. All were considered "minimally to moderately obese," with estimated body fat content of 30-40%. The women were divided into three equal groups: 1) walkers, who walked at increasing speeds until they were "pleasantly exhausted"; 2) cyclists, who rode stationary bicycles; and 3) swimmers, who used the Australian crawl or backstroke in a heated lap pool whose temperature ranged from 74°F to 78°F.

All participants were advised to eat as they pleased "whenever and whatever they desired. In fact, they were instructed to not keep track of what they ate," says Gwinup. But all were intent upon weight loss. Only a single variable — exercise mode — was controlled. The study used women because more of them had the time to participate. But Gwinup believes the results would be identical with men.

All participants were asked to exercise briskly once a day, to systematically increase the amount at weekly intervals, and to record what they did. The majority exercised for at least nine out of every ten days. The compliance rate among swimmers who completed the study was the best of the three groups, but swimmers also had the highest dropout rate. For various reasons, only 11 walkers, 10 cyclists and 8 swimmers reached the goal of 60 minutes per day.

To ensure that the fitness level was similar among the groups, Gwinup measured their resting heart rate every two weeks throughout the six-month study period. Testing confirmed that each exercise produced comparable cardiovascular fitness and that everyone who completed the study achieved a "training effect."

During the study, the average resting pulse for the group dropped from 75 to 63. But their weights provided stark contrast. Walkers averaged a 10% weight loss (15 pounds), cyclists lost 12% (18 pounds), but swimmers gained about 3% (nearly 5 pounds).

What kind of weight was lost or gained? Gwinup based his conclusion on measurements of the triceps fat deposit (midway between the elbow and shoulder in back of the arm). He assumed that all other fat deposits would change in the same direction. "Walkers and cyclists had reduced fat volume. But the swimmers remained the same. So, they didn't lose fat. They probably built up muscle," Gwinup says. He speculates that water, even if the same temperature as the air, removes energy in the form of heat from the body 30 times as effectively as air.

Gwinup's speculation is supported by Dr. Kin-itsu Hirata, a member of the Department of Physical Education of Chukyo University in Toyota-Nagoya, Japan. His book, *Selection of Olympic Champions* (1980), asserts that "Long-distance swimmers — channel swimmers — are much stouter . . . They must have fatty, stout figures because the fatty, stout figure is buoyant, can tolerate cold and store much energy for swimming a very long time." Many other experts agree that long-distance swimmers tend to retain more fat.

Marathon swimmer Lynne Cox has reached the same conclusion from personal observation. Cox, who has crossed the English Channel twice in world record time, has probably done more cold-water swimming than anyone else alive. In 1976 she swam the Magellan Strait at the tip of South America in 42° water. More recently she swam nearly three hours in a 40° lake in Iceland and frolicked for half an hour in 37° water amidst icebergs in Glacier Bay. Last fall, wearing only a bathing suit, cap and goggles, she swam almost three miles through the Bering Sea, where water temperatures range from 34° to 39°F. Her swim was part of a U.S.-Soviet study of cold-water physiology. Yet for all her cold water and marathon swimming, Cox says she does not lose weight. She's 5'6" and 180 pounds.

"I can do all these extreme distances, but the weight's still there. When I swam the English Channel, I lost only two or three pounds — most of it water."

Her body fat recently was measured at about 37% by Hal Goforth, Ph.D., a research physiologist at the

Navy's Health Research Center, San Diego, who specializes in cold water physiology. "Most athletes would feel obese if their body fat were beyond 22%," Goforth says.

"I always have had extra body fat. And I always have been swimming," Cox says. So, it is difficult to separate cause from effect. Which came first, excess body fat or cold water swimming? On the other hand, look at marathon runners. They are so lean and muscular. They have a very low percentage of body fat, because their bodies are dealing with hyperthermia — too much heat — and fat would make them retain heat."

Top male and female distance runners carry as little as 5-10% body fat, Goforth says. "Their bodies don't want extra weight because that would mean more work," Cox says. "But swimmers — particularly long-distance and cold-water swimmers — are dealing with two different factors: hypothermia and their need for buoyancy, which means their bodies want to retain fat."

Sportsmedicine expert Gabe Mirkin, M.D., notes that, "During exercise on land, air provides insulation and body temperature rises slightly and remains elevated for several hours afterward. But exercise in water — which is a very poor insulator — does not raise body temperature."

How do these findings relate to the body of the typical lap swimmer? Many lap swimmers find the typical "heated" pool feels cool. Even so-called warm lap pools may be too cold for the body to effectively lose weight, says Gwinup: "I think most people consider the fat stores of the body as a fuel tank. But fat has insulating properties, too. In water that is colder than the body, a message is conveyed somehow to the hunger center that to prevent heat loss more caloric intake is needed and that more fat may be needed for insulation. Presumably, this stimulates the appetite mechanism to increase caloric consumption, so that when you swim you have complete compensation; for every thousand calories you burn you eat a thousand more." Gwinup thinks the swimmers in his study must have eaten more food each day to compensate for their body heat loss.

But that doesn't mean you should avoid an exercise regime that includes swimming. Pro triathlete Scott Molina professed little surprise at the study's result but suggested a way around it. "I experienced weight gain when I trained in cold water in Southern California when I swam in the ocean near La Jolla and even in pools that were as warm as 78°, he said. "The body is real sensitive. You can work out hard swimming, but if the water is too cold you may very well gain weight. That's why I wear a wetsuit and work out in water between 82° and 84°. That's about the right temperature to swim regularly and avoid weight gain."

Colleen Cannon another triathlon star, swam the 100 and 200 meter butterfly from 1978 to 1982 while at

Auburn University. "I was a little bit heavier when I swam," she says. But since she added training for running and bicycling, she has lost weight.

Kate Delhagen, another world-class triathlete, has concluded that some swimmers gain weight from added muscle. "Swimmers tend to develop their upper body, particularly their shoulders and chest," she told me. And once in the water, it is harder for many of them to raise their heart rate. So a runner who exercises for an hour may exert far more effort than a swimmer during the same amount of time.

Dr. Goforth believes that total work involved makes the difference. He cited a recent experiment at Ball State University in which swimmers increased their daily distance from 4,000 meters to 8,000 meters and lost weight.

"Exercise is not simple," Gwinup says. "You should have definite objectives. Ask yourself whether you want to lose weight, build muscle, or develop cardiovascular fitness. Exercise should be prescribed the same way a doctor gives a prescription for medicine. Swimming is a great exercise, but the ideal person for a swimming regimen should have no weight problem and need to exercise mainly for cardiovascular fitness. For cardiovascular fitness, nothing is better than swimming. But most people in this country exercise for weight loss. If that is your objective, you shouldn't swim."

Mr. Steinman is the running and triathlon columnist for *City Sports Magazine* and an associate adjunct professor of liberal arts at National University.

QUESTION BOX

Q. If you drink on an empty stomach, does eating afterward affect how much alcohol is absorbed?
A. Yes. Alcohol needs no digestion. It diffuses through the stomach wall soon after arrival in the stomach and reaches the brain within minutes. However, alcohol consumed with or close to a meal is absorbed more slowly. Food mixes with the alcohol so that it reaches the stomach wall more slowly. Food also slows the rate at which alcohol enters the small intestine, where it is absorbed most quickly. Retardation of alcohol absorption is greatest during or following a heavy meal, mild following a light meal and slight when the meal is consumed one hour after drinking. Absorption is quickest when the stomach is empty. Thus, to slow absorption, meals should be eaten just before, with, or immediately following alcohol consumption.

NEW REPORT ON DIETARY FIBER

The Life Sciences Research Office of the Federation of American Societies for Experimental Biology (FASEB) has conducted a scientific assessment of the role of dietary fiber in health. The report, composed of 171 pages of text supported by 66 pages of references, was prepared at the request of the FDA and published in June 1987. The panel evaluated the effects of various fiber sources on specific diseases and concluded:

- **Colon cancer:** Epidemiological data show a fairly consistent inverse relationship between intake of fiber-containing foods and cancer of the large intestine. However, studies comparing the diets of patients with and without colon cancer have been contradictory. Some have shown a relationship between the incidence of colon cancer and the presence of certain cancer-causing substances whose concentration in the feces may be reduced by dietary fiber — particularly whole-grain cereals and bread. But further research is needed to clarify the mechanisms involved and the influence of various dietary fibers.

- **Constipation:** Many studies have shown that dietary fiber, particularly wheat fiber and other insoluble sources, is useful in the prevention and treatment of constipation.

- **Diabetes:** Clinical trials have shown that supplements of soluble fiber sources such as guar gum, pectin and oat bran can be useful in decreasing insulin requirements, improving blood sugar control, and lowering blood cholesterol levels in diabetic subjects. High-carbohydrate diets which contain large amounts of complex carbohydrates also have similar effects. These effects cannot be attributed solely to the fiber content of such diets.

- **Diverticular disease:** Epidemiological data suggest a relationship between low-fiber intake and diverticular disease. Clinical evidence suggests that diets high in fiber (especially wheat bran) may relieve the symptoms of uncomplicated disease. (Diverticulosis is a condition in which the walls of the large intestine develop pouches. If they trap fecal material and become inflamed, the condition is called diverticulitis.)

- **Gallstones:** The influence of dietary fiber on gallstone formation and regression is unresolved. Although some experiments show an association between dietary fiber content and stone formation, it is not known whether specific dietary factors or overall diet are responsible for this finding.

- **Heart disease:** Epidemiologic data on the relationship of dietary fiber to atherosclerotic heart disease are inconclusive. Clinical studies show that soluble fibers such as pectin, guar gum, locust bean gum, oat gum, or psyllium mucilloid significantly reduce total blood cholesterol and LDL cholesterol with little effect

on HDL cholesterol levels. Insoluble fibers such as bran or cellulose have no significant effect. Clinical studies show a lowering of blood pressure in response to increased amounts of fiber from various sources. But these trials are difficult to interpret because the other dietary components varied.

- **Irritable bowel syndrome:** The patients most likely to benefit from increased fiber intake (wheat bran) are those whose chief complaint is constipation. But neither bran nor a high-fiber diet is a panacea; treatment of accompanying anxiety or depression should be undertaken.

- **Obesity:** Limited data from clinical trials suggesting that dietary fiber supplements or high-fiber diets are useful for weight reduction are contradictory. Dietary fiber may have a role as an adjunct in the treatment of obesity, but controlled, long-term trials are needed before such a role can be established.

- **Peptic ulcer:** Epidemiological studies are inconclusive. Clinical evidence suggests little benefit from high-fiber diets.

- **Possible adverse effects:** The evidence that dietary fiber can decrease the bioavailability of iron, zinc and other minerals is conflicting. Although some experiments have shown that high-fiber diets can decrease mineral absorption, other have not. Some fibers appear to increase mineral excretion, while others do not. Isolated cases of adverse effects have been reported with consumption of large amounts of purified fiber sources. The panel concluded that a moderate level of fiber intake does not appear to pose a problem with respect to mineral balance.

After reviewing estimates of current fiber intake, the panel recommended that healthy adults consume a wide variety of whole-grain products, fruits and vegetables, leading to a dietary fiber intake range of 20-35 grams per day. The panel emphasized that this range of intake may not be appropriate for children, the elderly, or persons consuming special diets.

Copies of the report can be obtained for \$20 from the FASEB Publications Office, 9650 Rockville Pike, Bethesda, MD 20814.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

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CAN SUPER BLUE GREEN HELP SAVE THE WORLD?

Michael Paros

Blue-green algae form a thick mat of scum across lakes. They clog filters in reservoirs. They make drinking water taste foul and recreational swimming unpleasant. They like brackish ponds and produce a putrid smell. But to Daryl J. Kollman, president of Cell Tech Inc., "They are a miraculous gift from Mother Nature."

Cell Tech harvests this scum from Upper Klamath Lake in southern Oregon and markets it as Super Blue Green Algae, "a totally natural, well balanced food, containing over 35 different vitamins, minerals and amino acids beneficial to physical and mental health." According to a company promotional tape, "By detoxifying your systems and balancing your nutritional levels, Super Blue Green provides your body and spirit with ingredients that result in experiences of increased energy, mental clarity, dietary control and feelings of overall well being. This can enable people to deal with the many stresses of this modern world."

My first exposure to Super Blue Green was through a classified ad in a San Diego newsletter called *Wholistic Living*:

ENERGY FOR LIFE. Super Blue Green Algae promises increased vigor and mental alertness in three weeks or your money back—\$45. Information/orders 546-1577, Emily.

When I called, Emily said her migraine headaches had stopped, her hair was healthier, and she had less craving for sweets, "all from taking Super Blue Green Algae." She promised to send literature and urged me to try some products.

Two days later, a three-inch-thick packet arrived in the mail. From this material, I learned that Cell Tech harvests *Aphanizomenon flos-aquae* (Super Blue Green Algae) and freeze-dries it to preserve its nutrients. Two Cell Tech products, Omega Sun and Alpha Sun, contain algae in capsule form. Sixty 250-mg capsules retail for \$22.92 and \$15.84 respectively. The difference in price is

said to be due to 5-7% greater concentration of brain/nerve nutrients in Omega Sun—achieved by removing the cell wall from the algae. A third product, Liquid Brain Food, is described as a concentrated solution of Omega Sun. A 30-ml bottle costs \$20.00.

According to one brochure, "Alpha Sun acts more on the body than the mind, while Omega Sun is used for added mental energy. The Liquid Brain Food is for emergency situations when there is a need for instant mental strength." Omega Sun is said to "dramatically increase your mental powers, stamina and overall health," while Alpha Sun "helps give you the energy, mental clarity and alertness you need in today's world."

Intrigued by these claims, my roommate Tuyen Nguyen and I decided to experiment with Super Blue Green Algae and drove to Escondido to obtain some from Emily the next evening.

At Emily's house, we quickly purchased one bottle each of Omega Sun, Alpha Sun and Liquid Brain Food. After filling out a money-back guarantee, Emily expressed concern about one of us falling asleep on the way home and urged us to try some Liquid Brain Food. "Please take some now. I always take some before I go on long nighttime drives," she insisted. She handed me a half-dropperful of Liquid Brain Food and told me to place it under my tongue for thirty seconds. To my relief, it had only a strong cinnamon flavor. Tuyen took some also, but fell asleep on the way home anyway.

A Cell Tech newsletter contains a testimonial which says: "Each time I try Liquid Brain Food I'm more impressed and amazed. The way it makes me feel did not used to be legal. I take it in the afternoon, start smiling within 15 minutes, and feel happy, relaxed and ready for anything—ALL EVENING LONG! It supports my sense of humor and allows me to be a bit outrageous—a quality I personally cherish." Amused as I read this, I tried to picture Super Blue Green as the "recreational drug" of the future.

According to a Cell Tech brochure, "The algae is rich in valuable minerals, vitamin B₁₂, chlorophyll, as well as having an almost perfectly matched amino acid profile with humans." Kollman contends that the algae "contains eight times more Vitamin A than carrots" and "enough nutritional energy to help metabolize food intake." Another brochure declares: "Blue green algae is also rich in neuropeptides, which are protein derivatives that contain two or more amino acids and have the ability to nourish the brain directly." To Kollman, "the value of Super Blue Green's nutrients are biologically obvious."

Not so obvious to Dr. Paul Saltman, Professor of Biology at the University of California at San Diego. "This is absolute nonsense. There is no scientific evidence that chlorophyll is a valuable source for humans. I've never heard of whole neuropeptides passing through the blood-brain barrier. As for protein, vitamin A and B₁₂, our normal diets provide us with enough. The amounts of nutrients in these algae capsules are insignificant."

The labels on Cell Tech products support Saltman's assertion that the amount of nutrients in each capsule is minimal. Six capsules of Alpha Sun (the recommended daily dose) fail to provide even 1% of the U.S. Recommended Daily Allowance for any of the trace minerals listed on the label. In fact, the only significant nutrient in Super Blue Green algae is B₁₂, of which the label states that 180% of the U.S. RDA is provided. There is evidence, however, that the B₁₂ in blue-green algae is mainly useless analogs of the cobalamin B₁₂ needed in small amounts by the human body. In addition, some B₁₂ analogs found in algae can actually interfere with human cobalamin metabolism.

The algae's 60% protein content is very high for a plant. But the recommended daily dose of six capsules yields approximately 0.9 grams of protein—less than the 2.4 grams in a slice of whole wheat bread, 4 grams in a tablespoon of peanut butter or 1.3 grams in a medium-size banana.

"It is not the quantity of protein that is important, but the quality," counters Kollman. Cell Tech claims that its algae's amino acid profile is almost identical to ratios used by the human body. However, Cell Tech fails to mention that more than half of these amino acids are not essential because our bodies automatically synthesize adequate amounts. Broccoli and Super Blue Green algae appear to have similar essential amino acid profiles. But one cup of broccoli yields twice as much amino acid as Super Blue Green algae at a fraction of the cost. Furthermore, 3½ ounces of broccoli contain more vitamins (including Vitamin A) and minerals than six capsules of Alpha Sun.

Not that these facts have totally escaped Kollman, who, with a master's degree in education, considers

himself an expert on nutrition and agriculture. Kollman accuses the competition (i.e., almost all foods found in the supermarket) of falsely reporting nutritional content. "When you buy the food in the store, you really get nothing. It looks like broccoli but it isn't," asserts Kollman. "If you don't believe me, just buy a tomato and eat it. It tastes like cardboard. Why is that? Minerals taste! If you don't understand that, take a penny out of your pocket and taste the copper."

Inspired by such arguments, Tuyen and I began our Super Blue Green regimen. The first day we took one Alpha and one Omega capsule, as recommended by Emily. Although we had heard of miraculous first-day transformations, we experienced no change in physical or mental health. That night we took a dropperful of Liquid Brain Food, ignoring Kollman's warning in the Cell Tech letter: "Beware, Liquid Brain Food can keep you up 'till all hours!" Within three hours of taking this "crowd pleaser of the Cell Tech products" we were both fast asleep.

During the next five days, we increased our dosage, following Kollman's advice "to listen to your body" (which remained silent). By the sixth day, we were taking nine capsules at a time and going on occasional Liquid Brain Food binges. Yet our energy levels remained the same as before, and we experienced no change in appetite, sleep or emotions. Worse yet, my wart had failed to disappear—despite claims in a pamphlet that it might. In desperation, we raised our dosage to 14 capsules, reminding ourselves of the "guy from Boulder who took 100 capsules and was fine except for being awake for three days."

Finally, on the eighth day, both of us were able to report a dramatic physical change . . . GAS!

Apparently we were going through a "cleansing crisis." According to one Cell Tech brochure, "Super Blue Green acts as a catalyst and resource builder so that the body can release toxic buildup from the past. The toxic elimination can and does show up in as many creative ways as there are people. Some of these are: Intense sweating, headaches, stinky feet, fatigue and tiredness, hives, boils, crankiness, tumors, sore throat, hair loss, itchy skin, memories from the past, acidic stomach, gas, and many others."

Actually, if toxicity occurs, it seems more likely from the algae. In 1961, a toxic alga was reported in Klamath Lake in the same species used in Super Blue Green products. Although later tests failed to show further toxic strains, it is interesting to note the similarities between Cell Tech's version of "detoxification" and the effects of alga toxins on humans. Gas, diarrhea, nausea, tiredness, throat irritation and itchy skin have been reported in the scientific literature, and large doses of toxic algae have caused tumors when injected into small animals.

Aphanizomenon flos-aquae has been identified as one of the seven most poisonous blue-green algae [Bioscience 27:797-802, 1977]. Its toxicity is due to saxitoxin, a paralytic shellfish poison first isolated from toxic mussels and clams about 30 years ago. Even low doses of crude extract injected into white mice will cause death in less than five minutes.

In 1984, a U.S. marshal seized 84 bottles of algae capsules containing a toxic strain of the species *Aphanizomenon flos-aquae* from Bio-Nutritional Products in Mamaroneck, N.Y. The source of the capsules was based in Klamath Falls, Oregon, and had collected the algae from Klamath Lake [FDA Consumer, March 1985].

The company, K.C. Laboratories, had had \$120,000 worth of capsules seized in 1983 after the FDA charged that the algae was "an unsafe food additive." This company had produced an array of products under the trade name Blue-Green Manna, which it claimed could treat Alzheimer's disease, allergies, arthritis, and leukemia and many other illnesses [see NF 2:22-23]. The owner of K.C. Laboratories was Victor Kollman, brother of Daryl Kollman. In 1987, a U.S. District Court issued a permanent injunction barring Victor from the algae business.

Cell Tech maintains that it has been separate from K.C. Laboratories from the beginning, even though both companies were founded during the same year. According to Daryl Kollman's wife Marta, the two brothers parted ways in 1979.

"We just couldn't deal with his ethics. He wouldn't even eat his own algae," Marta Kollman told me in a telephone conversation. "It was this kind of dishonesty that got Victor in trouble. He made two key critical mistakes. First he claimed he was a doctor, which he's not. Secondly, he made claims that the products could cure illnesses. Once you've done that, the FDA considers it a drug," said Marta.

Sure enough, all of Cell Tech's literature contain disclaimers that the products do not provide "cures" for diseases and are not intended as a substitute for medical care. Throughout Daryl Kollman's lectures, he refers to the algae as a "whole food" and denies that it is a drug or even a food supplement.

Despite this disclaimer, it is clear that "drug" claims are being spread by Cell Tech distributors. Ads in

Vegetarian Times and *Total Health* state that daily users of Super Blue Green Algae commonly report "increased physical stamina, memory and mental clarity; alleviation of stress, anxiety and depression; relief from hypoglycemia, fatigue, mood swings and allergies; better control of appetite and weight; improved digestion and assimilation of food; faster recovery from side effects of certain medical treatments; and heightened anti-cancer and anti-pollutant immune functions."

In addition, testimonials from people identified by their initials in a 12-page packet from a local distributor claim that Super Blue Green has "stabilized" a woman with Alzheimer's disease, "given leverage during weight-lifting," helped clients withdraw from cocaine, caused a calcium deposit to disappear, reduced jet-lag, cured a 40-year case of constipation, and restored the health of a pet dog.

Ironically, the first successful court trial under the Pure Food and Drug Act of 1906 (predecessor of our current Food, Drug, and Cosmetic Act) involved a product called Cuforhedake Brane-Fude. "Yet in 1987 a company can get away with selling Liquid Brain Food because of our government's ineffectiveness," says James Lowell, Ph.D., an expert on algae who has followed the activities of K.C. Laboratories and Cell Tech closely.

Cell Tech appears to be growing rapidly. Anyone can become a distributor by completing an application and buying a sales kit for \$20.00. Marta Kollman said Cell Tech has over 6,500 distributors nationwide and ships out roughly 1,500 bottles daily. At this moment, the company is moving to a larger building. "We are expanding our harvesting plant. Soon we'll have the whole lake, because the other guy, Victor, is out of business," says Marta.

Meanwhile, Daryl Kollman has announced his candidacy for the 1988 Presidential election. His promises—no less modest than those for Super Blue Green—include "comprehensive recovery" of our environment, our economy and our health. Super Blue Green Algae, he claims, is "the cornerstone, the foundation, for a new way of living."

Mr. Paros is in his junior year and is majoring in molecular biology at the University of California/San Diego.

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BRIEFS

Quackery conference successful. Close to 300 federal and state enforcement officials, insurance executives, antiquackery activists, and others met in Kansas City, Missouri, for the first National Health Fraud Conference held since 1963. After "declaring war" on health fraud, Deputy FDA Commissioner John J. Norris said his agency expected to cosponsor another national meeting in 1990 and 30 regional conferences during the next two years.

Snack food composition. A study of ten "natural" snack foods and their supermarket counterparts has found that the amounts of calories, protein, vitamins, calcium and iron were similar in comparable products, but most of the "natural" products cost more [*Environmental Nutrition* January 1988]. All products contained 2% or less of the U.S. RDA for most nutrients. Three of the natural snacks were lower in sodium and three were higher. Fat was slightly lower in two of the natural products, but essentially the same in most — and the natural products were as likely as the others to have saturated fats (palm or coconut oil). The study was directed by Melanie L. Polk, M.Sc., R.D., a dietitian in West Hartford, Connecticut.

Racketeering suit. Aetna Life Insurance Company has charged Stanislaw R. Burzynski, M.D., and the Burzynski Research Institute of Houston, Texas, with violating the Racketeer Influenced and Corrupt Organizations (RICO) Act. Aetna's claim, filed December 31, 1987, states that Burzynski planned and participated in a scheme to defraud various insurers, involving an alleged cancer treatment he calls Antineoplastons (ANPA). The scheme involved insurance claims which identified ANPA as "chemotherapy" administered on the Institute's premises. Usually, however, after a brief training period, it is self-administered by the patient or patient's family. Aetna believes that many millions of dollars have been paid mistakenly by insurers who thought that Burzynski was offering a proven chemotherapy program. ANPA, which Burzynski says is a naturally occurring peptide, lacks FDA approval and may not be legally marketed across state lines. Since the RICO Act allows recovery of triple damages, a successful suit could deter others who use unproven methods from falsely reporting to insurance companies what they are doing.

Artificial feeding. A review article has been published on the legal status and ethics of withholding intravenous or tube feeding from individuals believed to be in irreversible coma [*New England Journal of Medicine* 318:286-290, 1988]. Since courts place considerable weight on what patients would have wanted, the authors suggest that doctors encourage their competent patients — particularly elderly ones — to discuss and document their wishes. Reprints of the article are available from Bernard Lo, M.D., Box 0320, Room A-405, University of California, 400 Parnassus Ave., San Francisco, CA 94143.

Fruit and vegetable research. The U.S. Department of Agriculture has earmarked about \$2 million to look for alternatives to sulfites in preserving quality in salad bar fruits and vegetables. Fruits and vegetables begin to soften and brown shortly after they are cut, cored or sliced. Scientists are exploring the inside makeup of these foods to determine why they spoil and develop techniques to slow down the spoilage. Sulfites, which had been used to prevent the spoilage, were banned by the FDA last year because of their tendency to trigger allergic reactions in asthmatics.

Antifluoridation petition denied. The U.S. Environmental Protection Agency (EPA) has denied a petition to add inorganic fluorides to its list of toxic chemicals subject to reporting under the Superfund emergency planning and community right-to-know programs. Inorganic fluorides are commonly added to drinking water supplies to reduce the incidence of tooth decay. In denying the petition, EPA said it had found no case where total fluoride exposure from industrial sources and drinking water adversely affected health [*Federal Register*, May 29, 1987].

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AIDS and food companies. According to the January 13 *Wall Street Journal*, many food processing companies and food service firms are concerned about AIDS, but want to act quietly to avoid causing panic among workers and customers. The AIDS virus does not survive outside the body and is transmitted only through the intimate sharing of body fluids (such as semen) or introduction into another person's blood stream. But if a worker is found to have AIDS, a company might still lose co-workers and customers. On the other hand, firing an AIDS victim could trigger a job discrimination lawsuit. In response to this dilemma, companies and trade associations have begun low-keyed educational campaigns to indicate that AIDS cannot be transmitted by "casual" means such as handling food. Companies are also developing policies for dealing with workers who become AIDS victims.

Reported weight loss inaccurate. A follow-up study of former participants in a weight-control program has found that weights they reported averaged 5.9 pounds (2.9%) less than weights determined by actual weighing at the clinic [*Journal of the American Dietetic Association* 87:1198-1201, 1987]. The study involved 39 women and 107 men aged 28 to 63 years who were four or five years post-treatment. The participants were surveyed by telephone shortly before a check-up but were not told the results would be validated against their scale weight at the clinic. The researchers concluded that "use of self-reported weight is not adequate for the assessment of long-term weight-loss maintenance unless the magnitude of discrepancy is adjusted in some way." Similar findings have been reported by other researchers.

Suction lipectomy. Use of suction through a narrow tube to remove undesirable local deposits of body fat is now one of the most common plastic surgery procedures in this country. It involves a small incision through the skin and insertion of a tube connected to a high-vacuum suction machine. Common operative sites have been the thighs, hips, knees, abdomen, buttocks, upper arm, breasts and under the chin. Although some doctors claim that fat does not return to the treated areas, systematic follow-up data are lacking—and fat has returned in some animal studies. After reviewing published reports, *The Medical Letter* [December 18, 1987] has concluded that the procedure "has produced satisfactory results in some patients, but the long-term effects of the procedure are not known." Though the procedure is usually safe, infection, persistent pain, persistent swelling, skin discoloration, and distortions of contour have been reported. A few fatalities have occurred.

Sulfites and potatoes. The FDA has proposed to stop restaurants from using sulfite preservatives on fresh (unpacked and unlabeled) potatoes. FDA Commissioner Frank E. Young, M.D., Ph.D., said the agency's safety review showed that sulfites pose no health hazard to the general public but can cause reactions in up to one million people, many of whom are asthmatics. Reactions range from hives, itching, dizziness, nausea and diarrhea to shortness of breath, and, in rare instances, fatal shock. Since 1982, the FDA has received 1,400 consumer complaints about sulfites, and four deaths have been attributed to ingestion of sulfite-treated hash-brown and cottage-fried potatoes served in restaurants.

Sulfite labeling of meat products. The U.S. Department of Agriculture now requires meat and poultry processors to list sulfiting agents on product labels whenever the products contain confirmable levels of sulfur dioxide, sodium sulfite, sodium bisulfite, potassium bisulfite, sodium metabisulfite, or potassium metabisulfite. These substances are used to preserve foods, such as potatoes and other ingredients, that may be added to processed meat and poultry products. The USDA policy, like that of the FDA, requires sulfite labeling when products contain 10 parts per million or more of any sulfite. (The FDA has jurisdiction over foods other than meat and poultry.) Sulfites are prohibited in fresh meat and poultry products, but can still be used in stews and other processed meat or poultry products.

New foods for patients who can't chew. Food technologists at the U.S. Army's Natick Research and Development Center in Natick, Mass., have developed "dental liquids" for patients whose jaws are wired shut, throat cancer patients, and toothless patients awaiting dentures. According to a Center staff member, these patients often refuse to eat when they tire of bland or oversweet foods. The new products, which are being tested in 12 military hospitals, include French toast, chicken in wine sauce, beef or turkey and gravy, spaghetti, sloppy joes, pork with stuffing, barbecued chicken, chile con carne, noodles Parmesan, vegetables, strawberry shortcake and apple pie. The foods are finely ground, dried, and sealed in pouches that can be stored for three years at room temperatures. To prepare them for consumption, the dried foods are mixed with hot water in a blender. According to *American Dental News*, the researchers have developed a 2-day prototype menu of 20 items and are working on a 5-day regimen that will provide patients with about 2,200 calories per day.

Diet pill fraud attacked. The Federal Trade Commission has charged that advertising claims that Dream Away amino acid pills will cause users to lose weight while they sleep (without dieting or exercise) are false and deceptive. The agency has asked the U.S. District Court in Phoenix, Arizona, to issue an injunction and order payment of consumer redress.

United Sciences of America. Information about United Sciences of America suitable for teaching purposes is available for \$40 from the Lehigh Valley Committee Against Health Fraud, Inc., P.O. Box 1747, Allentown, PA 18105. Included are a 12,000-word report published by the American Council on Science and Health, the April 1987 *Nutrition Forum* article, a brief update, and the company's introductory videotape.

Poultry more popular. Americans ate more poultry than beef last year, and the U.S. Department of Agriculture predicts poultry will pull even further ahead this year. According to *Changing Times* magazine, increased production caused poultry prices to fall last year while short supplies of beef and pork led to increased prices. Poultry's popularity is also a result of health concerns, to which beef producers are responding with meat that is leaner and better trimmed.

Questionable product survey. A telephone survey of 1,514 American adults conducted by Louis Harris and Associates for the U.S. Department of Health and Human Services has estimated the extent of public use of selected unproven treatments. Some of its findings were: 1) 26.4% of those surveyed reported having used one or more "questionable" treatments; 2) word-of-mouth was the most common stimulus for use; 3) use of questionable products did not vary much with age or educational level; 4) those with the greatest trust in doctors were least likely to use questionable treatments; and 5) 36% of arthritis sufferers had used questionable treatments. Those surveyed reported getting health advice from the following "alternative" practitioners: chiropractors (21%), nutritionists (15%), religious counselors (5%), health product salespeople (5%), spiritual healers (3%), herbalists (3%), and acupuncturists (3%).

Chinese cookbooks. A 336-page compendium of 700 books on Chinese cooking published in English during the past century is available for \$47 from Garland Publishing, 136 Madison Ave., New York, NY 10016. Each entry outlines the features of each book and contains a brief evaluation. The compendium was written by Jacqueline M. Newman, Ph.D., R.D., Associate Professor of Home Economics at Queens College in Flushing, New York.

GREAT EARTH PROHIBITED FROM MAKING FALSE CLAIMS

The Federal Trade Commission has charged in a complaint that Great Earth International, Inc., has falsely claimed that three of its food supplements would enable users to lose weight, build muscle, burn fat, promote healing, protect against mental and physical fatigue, and/or strengthen the immune system. A proposed consent agreement, released simultaneously, would settle the charges and prohibit Great Earth from making unproven claims for other products as well.

Under the agreement, Great Earth must have substantiation for claims that any product will: 1) cure or prevent any disease or other undesirable physical or mental condition; 2) assist a user in losing or controlling weight or fat; 3) improve or strengthen any body organ or function; or 4) eliminate or reduce any harmful substance or organism that may be found in the body or environment. Great Earth will also be prohibited from

claiming that GHR Formula-P.M. (now called Tri-Amino Plus P.M.), L-Ornithine, or L-Arginine can stimulate production of human growth hormone, help users achieve rapid or substantial muscular development, promote weight loss during sleep, or promote burning of fat or building or toning of muscles. Nor may the company use the name "Growth Hormone Releaser" or any similar name unless it can substantiate that the product actually stimulates growth hormone release.

After a period of public comment, the Federal Trade Commission will issue a final consent order which, if violated, can result in a penalty of up to \$10,000/day for each violation.

Great Earth International is the nation's second largest health food store chain with about 150 retail outlets, most of which are owned by franchisees and licensees.

“BODYBUILDING” HERBS

Varro E. Tyler, Ph.D.

Nutrition Forum readers are probably well aware of the unwise and illegal use of anabolic steroids by some athletes. When used without medical supervision, these drugs have been linked to such serious side effects as jaundice, testicular atrophy, decreased bone growth in adolescents, and increased masculinity in women.

It is also probable that few persons knowledgeable in sound nutrition peruse the pages of *Ironman* or similar magazines devoted to bodybuilding. In recent years, these publications have been promoting concoctions of herbs, vitamins, minerals, amino acids, “glandular” products, and the like as legal substitutes for steroid drugs.

What herbs are involved in such promotions? Advertisements emphasize a curious mixture of purported “adaptogens” and “aphrodisiacs.” For example, the Conan Corporation of Jefferson, Ohio, promotes ginseng root, unicorn root, palmetto berries, and yucca as “Roid Replacers” that exert a “tonic effect on glandular secretions.” Hathaway’s Health Foods of Shawnee, Kansas, offers an Herbal Combination Cap in two versions. The one for males contains fo ti teng, damiana, licorice root, and sarsaparilla. For females, dong quai is substituted for fo ti teng. According to the advertisement, “These special herbs contain and enhance hormonal activity.”

Perhaps the most curious of the hyperbolic claims is contained in the advertisements by Amino Discounters of Tucson, Arizona. That company offers yohimbe bark extract in tablet form, not for its yohimbine content, but “because it contains significant quantities of methyltestosterone.” The tablets are said to contain an average of 25 milligrams of methyltestosterone derived from yohimbe bark.

A similar claim is made by Pacifico Enterprises of Dayton, Ohio, for its Smilax, a liquid preparation of sarsaparilla leaf. According to a recent ad, “Smilax *Officinalis* is the only true source of testosterone . . . Smilax is not a drug. Smilax is an herb.” And an ad by Vita-Life Products, Inc., Staten Island, New York, claims that, “Testosterone builds mass and strength and it occurs naturally in the herb Mexican Sarsaparilla.”

To this list of alleged bodybuilding herbs must be added schizandra and astragalus. Nature’s Way of Springville, Utah, recommends them, along with Korean white ginseng and Siberian ginseng (eleuthro) to “increase endurance, fight fatigue and speed recovery the way Soviet athletes do.”

In considering the validity of the claims made for these various products, it should first be stated em-

phatically that none of them has any proven anabolic steroid activity. Nor can any of them produce the fast muscular gains or increases in strength sought by bodybuilders and other athletes. It should also be said that some of the claims made for these products are ludicrous to the informed reader. For example, yohimbe bark certainly does not contain methyltestosterone. In fact, this substance is man-made and has never been isolated from any natural source.

Sarsaparilla, obtained from various *Smilax* species, does contain a number of steroids, including sarsapogenin, smilagenin, sitosterol, etc. But none of these compounds has the necessary molecular configuration to function in an anabolic manner. Further, none of them is converted to an anabolic steroid in the body following ingestion. Testosterone is present in minute amounts in certain animal tissues but has never been detected in plant material of any kind. To say that *Smilax* is not a drug but an herb belies the fact that the root of various species of this genus was listed as a drug in the official compendia for nearly 150 years.

It is hard to understand why organizations selling products intended for human consumption are being permitted to advertise them with claims totally unsubstantiated by clinical or scientific evidence. About the best that can be said of herbal “bodybuilding” products is that they are less harmful than the anabolic steroids they are intended to replace.

Dr. Tyler, Vice President for Academic Affairs at Purdue University, is an expert in pharmacognosy (the science of medicines from natural sources) and is author of *The New Honest Herbal* (1987), published by the George F. Stickley Company, Philadelphia.

QUESTION BOX

Q. What happens if too much protein is consumed?
A. The requirement for protein is limited. Protein from food must supply the body with amounts of the essential amino acids at levels sufficient to meet the protein-synthesizing needs of the body. Extra protein is metabolized for energy or converted to fat and stored. The daily recommended intake of protein for adult Americans is 0.8 grams per kilogram of body weight. Most Americans exceed this amount routinely.

HOW TO EVALUATE COMMERCIAL WEIGHT LOSS PROMOTIONS

William T. Jarvis, Ph.D.

The National Council Against Health Fraud disparages commercial weight control programs that:

1. Promise or imply dramatic, rapid weight loss (substantially more than one percent of total body weight per week).

2. Promote diets that are extremely low in calories (below 800 calories per day; 1200-calorie diets are preferred) unless under the supervision of competent medical experts.

3. Attempt to make clients dependent upon special products rather than teaching how to make good choices from the conventional food supply. (This does not condemn the marketing of low-calorie convenience foods which may be chosen by consumers.)

4. Do not encourage permanent, realistic lifestyle changes including regular exercise and the behavioral aspects of eating wherein food may be used as a coping device. (Programs should focus upon changing the causes of overweight rather than simply the effects, which is the overweight itself.)

5. Misrepresent salespeople as "counselors" supposedly qualified to give guidance in nutrition and/or general health. Even if adequately trained, such "counselors" would still be objectionable because of the obvious conflict-of-interest that exists when providers profit directly from products they recommend and sell.

6. Require large sums of money at the start or require that clients sign contracts for expensive, long-term programs. Such practices too often have been abused as salespeople focus attention upon signing up new people rather than delivering continuing, satisfac-

tory service to consumers. Programs should be on a pay-as-you-go basis.

7. Fail to inform clients about the risks associated with weight loss in general, or the specific program being promoted.

8. Promote unproven or spurious weight loss aids such as human chorionic gonadotropin hormone (HCG), starch blockers, diuretics, sauna belts, body wraps, passive exercise, ear stapling, acupuncture, electric muscle stimulating (EMS) devices, spirulina, amino acid supplements (e.g., arginine, ornithine), glucomannan, and so forth.

9. Claim that "cellulite" exists in the body.

10. Claim that use of an appetite suppressant or methylcellulose (a "bulking agent") enables a person to lose body fat without restricting accustomed caloric intake.

11. Claim that a weight control product contains a unique ingredient or component unless it is unavailable in other weight control products.

I find it helpful to keep this list handy. When talk show representatives inquire about questionable weight-loss programs or books, I go over the list with them. That usually sets them straight.

Dr. Jarvis is professor of health education at Loma Linda University and president of the National Council Against Health Fraud. Information about the Council can be obtained by sending a self-addressed envelope to P.O. Box 1276, Loma Linda, CA 92354.

NEW HELP FOR QUACKERY VICTIMS

Victims of health and nutrition frauds can encounter great difficulty obtaining redress through the courts. Many are afraid of lawyers. Some are embarrassed at having been fooled. Often victims do nothing, simply dismissing the fraud as one of life's lessons. Lawyers unfamiliar with cases of this type can have a difficult time handling them.

In response to these problems the National Council Against Health Fraud has created a Task Force on Victim Redress, chaired by NCAHF board member Stephen Barrett, M.D. The task force will offer: 1) a law-

yer referral service for the public; 2) information on unproven, fraudulent and potentially dangerous treatments; 3) a registry of expert witnesses; 4) information on defense witnesses; 5) reports on cases adjudicated, settled, and in progress; and 6) class action suits by defrauded victims. Help will also be available to insurance companies and law enforcement agencies.

Victim referrals should be made to Michael Botts, Esq., 421 W. 87th St., Kansas City, MO 64114 (telephone: 816-444-8615).

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“NUTRITION” AGAINST DISEASE: A CLOSE LOOK AT A CHIROPRACTIC SEMINAR

High blood pressure, arteriosclerosis, ulcerative colitis, diabetes, infectious hepatitis, epilepsy, goiter, pancreatitis, kidney failure and receding gums are not the kinds of ailments chiropractors should treat. Recently, however, two dozen chiropractors gathered in Fort Lee, New Jersey, to hear how to treat these and many other diseases nutritionally. And they were taught how to bilk insurance companies in the process.

The chiropractors each paid \$125 to attend a six-hour seminar hosted by Berman Chiropractic Supply (BCS), of Warwick, New York, which sells chiropractic instruments and supplies. BCS is the exclusive north-eastern distributor for Nutri-West, a supplement manufacturer based in Douglas, Wyoming. Not surprisingly, the supplements recommended were made by Nutri-West.

The real star of the seminar was Nutri-West's 1987 "therapeutic food manual," a \$60 item given to everyone who pre-registered for the meeting. Entitled *Silver Bullets*—"A Clinician's Guide to Therapeutic Nutrition", this 164-page book lists 142 conditions ranging from acidosis to whooping cough and lists Nutri-West products for each one.

The seminar's featured speaker was Robert Cass, a naturopath with close ties to Nutri-West. Cass works with Paul White, D.C., the company's owner, in developing new supplement formulas and helped write some product literature that Nutri-West distributes. The seminar flyer also describes Cass as "executive director of the Los Angeles-based Nutritional Blood Analysis Program, a national clinical and therapeutic diagnostic program" and currently involved in setting up a chiropractic college in India. Although Cass wrote *Silver Bullets*, he is not identified in the book as its author. Instead, the title page states that "permission to reproduce and market this manual has been assigned to Clinical Results, 24000 Bessemer St., Woodland Hills, CA 91367"—which is Cass's business address.

Silver Bullets begins with disclaimers that presumably represent attempts to protect Cass from liability. The front cover states: "RESTRICTED TO DOCTORS LICENSED IN THE PROFESSIONAL HEALING ARTS." This message is repeated on the title page, which also states: "It is left to the discretion of the licensed healing arts professional to determine if the considerations and commentaries included in this manual are appropriate for their patient. Neither Clinical Results nor the publishers of this manual can be held responsible for errors, inaccuracies, omissions or any inconsistency herein."

The book's introduction gives an additional caution: "The information contained in this manual should not be construed as rendering diagnosis or treatment of any disease or preclude clinical testing or to substitute for necessary medical care. Therefore the statements contained herein should be viewed as being merely empiric [sic] based on reported clinical investigation and research of symptomatology, blood and urine chemistries, physical examination, observation, etc. The treating physician is solely responsible for his patient's treatment program and should understand that the commentary in this manual does not relieve him of his liabilities and responsibilities for his patient's diagnosis and treatment programs. Nutritional suggestions presented are certainly not designed to constitute a cure, specific or otherwise of any condition noted but are in fact designed to offer supplemental suggestions for the overall general nutrition of his patient's diet and are designed as an adjunctive support to medical, chiropractic, osteopathic, acupuncture, naturopathic, dental etc. procedures and treatments deemed necessary by the practicing physician. It is left to the sole discretion of the user of this manual to determine if the commentary and considerations in this manual are appropriate for their patient."

The book's foreword was written by George Goodheart, D.C., who states: "Concise and to the point [this manual] carries the authority that only clinical experience can bring. Healing arts professionals all over the world will find themselves referring to it throughout their busy practice schedules." Goodheart is the originator of "applied kinesiology," a system of diagnosis and treatment based on the theory that every organ dysfunction is accompanied by muscle weakness that may be correctable by "nutritional" methods. Its practitioners also claim that nutritional deficiencies, allergies, and other adverse reactions to food substances can be detected by placing substances in the mouth so that the patient salivates. "Good" substances will make specific muscles stronger, whereas "bad" substances will cause specific muscle weaknesses. Dr. White learned about applied kinesiology from Dr. Goodheart and has promoted it vigorously ever since.

Despite the many disclaimers, *Silver Bullets* offers a system of treating illnesses that is as simple as following a cookbook. Each ailment is followed by a list of Nutri-West products, the recommended dosage (the accuracy of which is said to be "greatly enhanced" with applied kinesiology testing), and phrases describing the supposed purpose of each product. A "commentary" section provides additional explanation and advice. For most conditions the number of products recommended is between two and eight.

Take epilepsy for example. The book prescribes 40 tablets daily: 2 tablets 4 times a day of Pit-Lymph-Whole ("regulates endocrine balance"); 2 tablets 4 times a day of RNA-DNA-Plus ("specific cell activators"); 3 tablets 3 times a day of Liva-Lymph-Plus ("liver metabolism factors"); 2 tablets 4 times a day of Chlorophyll-Plus ("liver detoxification and source of organic magnesium"); and 1 tablet 4 times a day of niacin ("nourishes nerve supply").

For arteriosclerosis, *Silver Bullets* recommends: Super EPA ("anti-plaquing factors"); GB-Plus ("thins bile viscosity, liver/gall bladder decongestant"); Lipotrophic Plus ("to reduce cholesterol/blood fats"); Aspartic-K ("source of potassium/cardiac support"); Lyso-Lymph Forte ("anti-fibrotic factors/proteolytic enzymes"); and Cardio Lymph Chelate ("supports vasculature to increase circulation").

At the seminar Cass said Cardio-Lymph Chelate is an oral chelation product that is "absolutely wonderful." He said it "takes plaque off the wall" of arteries and "scrapes them down." According to the commentary in *Silver Bullets*, after improvement occurs, the "maintenance program is 1 three times a day for life."

Cass asked the many people who had brought tape recorders not to use them. His reason: "We'll get into some sensitive material later on." And with no tape recorders, "I'll deny everything that I say."

Cass said a lot about two services he offers—Nutritional Blood Analysis and The Bio-West Report—that are designed for the chiropractors who use *Silver Bullets*. For years, he said, chiropractors have complained that they want to use nutrition but can't get paid for it. According to Cass, his services diagnose patient diseases and prescribe the supplements to help solve that problem. "I want to help you make money selling nutrition," Cass said.

For Nutritional Blood Analysis, the chiropractor sends Cass a specimen of the patient's blood and a "subjective but useful" questionnaire that the patient has filled out. After the blood is tested, Cass feeds the results plus data from the questionnaire into his computer. The doctor then receives a printout—the patient's "personalized therapeutic report."

The profit, however, is in the blood, which Cass has analyzed by one of several cooperating laboratories. These labs carry out a complete blood count, a SMAC-24 (which measures the blood levels of 24 chemicals), and several other tests. If the patient is insured, the labs accept insurance assignment as payment in full.

"Private insurance and Medicare—that's hot, huh?" said Cass, emphasizing that the analysis "doesn't cost anybody anything." The blood work and analysis is worth \$110, Cass said. But the labs bill the insurance companies \$290 to compensate for reimbursements that may amount to only 60-80% of the total. The lab pays Cass a fee and keeps \$130 to \$140 for itself.

The chiropractor profits from nutritional blood analysis in two ways: by selling patients the Nutri-West supplements prescribed in the Nutritional Blood Analysis Report, and by "creative billing" of insurance companies, Cass said. He explained that chiropractors can't bill insurance companies for the therapeutic report itself. To get around that problem, Cass advised them to bill the report—worth between \$35 and \$50—as an office visit. "Generally speaking," Cass said with a smile, "creative insurance billing is the way to go these days."

A chiropractor using nutritional blood analysis can bill for other things as well, said Cass, including the charge for drawing the blood (code 9900 on the insurance form, he noted helpfully) and the office visit (code 90060) at which the blood was drawn. The total take for one patient's blood analysis "could come to \$200 when all is said and done—very easily," Cass said.

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Cass provides the chiropractor with two reports: one "for professional use only" and one for the patient. What's in a typical Nutritional Blood Analysis Report? Each chiropractor was given a sample on a patient identified as Barbara, a 51-year-old woman.

The analysis, which bears a 1986 Cass copyright, contains this disclaimer: "The information in this outline should not be construed as rendering diagnosis or treatment of any disease or preclude additional clinical testing or to substitute for necessary medical care. Therefore the statements contained herein should be viewed as being merely empiric [sic] based upon clinical research and investigation. The treating physician is solely [sic] responsible for his patient's diagnosis and treatment programs and by requesting this discussion acknowledges full and complete liability for his patient's diagnosis and treatment programs. Nutritional suggestions presented are not designed to constitute a specific cure for the treatment of any condition but are designed to offer supplemental feedings in the overall nutritional enhancement of the patient's diet. Although Nutri-West products are suggested in this report, the considerations expressed are not necessarily those of Nutri-West."

The sample report contains fifteen pages of tables and text. Seven pertain to "Barbara" and the rest give general information and advice that includes warnings against white flour and refined sugar. One page is a list of "vitamin and mineral robbers" said to be adapted from a magazine article by Earl Mindell on "Why We Should Take Vitamins." Barbara's analysis begins with a table that compares the results of Barbara's blood tests with "lab ranges" and "nutritional balance" ranges and interprets the results outside the "nutritional range" as "high" or "low." [Editor's note: For most values, the "nutritional balance" range is narrower than the range considered normal by the scientific community. Thus many people will have "high" or "low" values inappropriately reported.]

Barbara's report lists many problems: functional digestive disturbances and malabsorption syndrome; liver, adrenal, biliary, thyroid, pituitary and autonomic imbalances; reactive hypoglycemia; calcium mobilization problems; lowered resistance; possible parasite involvement; presence of bacterial/viral infection; dehydration pattern; high sodium; protein malabsorp-

tion; overstimulated osteoblastic activity indicating osteoarthritis/osteitis and other bone problems; creatine phosphokinase (CPK) pattern disturbances; menopausal "hot flashes"; and circulatory insufficiencies.

The recommended solution includes dietary changes and copious amounts of Nutri-West supplements. Barbara was prescribed Nutri-West's Adreno-Lymph-Plus (for "adrenal support, reactive hypoglycemia, hypotension, and allergies"), Hypo-Di-Gest (for "blood sugar handling problems and digestive support"), Core Level Thymus (for "support of immune functions"), Lipotrophic-Plus ("fat metabolizer and bile thinner/mobilizer"), GB-Plus ("gallbladder/liver decongestant"), and Pare-X and #8 VMF (for "digestive function, parasites, and inflammation").

The report instructed Barbara on the proper times to take the supplements and the number of tablets to take. And it offered this advice: "FOLLOW the Schedule of Nutritional Adjuncts and the dietary outlines contained in your report JUDICIOUSLY. The road back to health can be a fascinating and rewarding ADVENTURE!" Chiropractors get a 50% discount on Nutri-West products and presumably charge list price to patients. Barbara's program would cost more than \$5.00/day.

For chiropractors who don't want to do blood work, Cass offered another way to make money: his Bio-West Report. The chiropractor sends Cass a questionnaire that the patient has filled out, along with other information about the patient's blood pressure, medications taken, health habits, and underarm temperatures (which supposedly indicate thyroid function). The questionnaire—also used for the Nutritional Blood Analysis—contains more than 150 signs and symptoms for the patient to circle. Cass enters the information in his computer and produces the patient's Bio-West Report—a prescribed list of nutritional supplements for the patient's "clinical nutritional program."

The Bio-West Report contains a disclaimer almost identical to that of the Nutritional Blood Analysis. However, according to the sample Cass distributed, if the patient circles "tendency to asthma," the printout responds: "Indicative of a need for HCl and adrenal support. Also indicative of possible food reaction sensitivities." The recommended supplements are Lyso-Lymph-Forte, #6 LNG, Calc-Acid, C-1000TR, Pneumo-Lymph, Adreno Lymph-Plus, Histo-0-Cal, Duo-Lymph, Pare-

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X, and #8-VMF. The Chiropractor is referred to *Silver Bullets* to learn how many times a day the patient should take each supplement.

What if the patient needs coffee to get going? "Indicative of a reactive hypoglycemia pattern with biliary adrenal insufficiencies," the printout reports. The suggested supplements: Core Level Bile, GB-Plus, Hypo-Digest, Multi-Gland Chelate, Amino-All, Adreno-Lymph-Plus, and B-Complex.

Heart palpitations indicate "a need for vitamin B and alkaline minerals"—which means the supplements Trypto-CLM, B-Complex, and Cardio-Lymph-Chelate.

The Bio-West Report costs the patient \$30, Cass said, adding that insurance companies probably can't be billed for it. But insurance code 99050—retrieval of data—was "a possibility" that chiropractors could try using to obtain insurance reimbursement.

Chiropractic is based on the false belief that spinal misalignments are the major cause of diseases, and that many if not most ailments can be helped by manipulation ("adjustment") of the spine. Chiropractors are licensed to do spinal adjustment in all 50 states, but they are not allowed to prescribe drugs, and in many states they are not permitted to diagnose or treat disease.

Cass suggested that nutrition supplements may be necessary for chiropractors' spinal adjustments to work. "As the chiropractic profession knows, our responsibility is to get the spine into alignment. That's the bottom line," he said. Nutritional supplements "assist the body to come into balance," he said. And once that happens, "the body can come back into alignment."

Chiropractic journals carry ads from many companies that sell supplement products, and several of these companies conduct seminars on the use of their products to treat disease. The number of chiropractors

using these approaches is unknown, but is probably several thousand.

Under federal law, substances intended for use in "the diagnosis, cure, mitigation, treatment or prevention of a disease" are considered drugs. Products not generally recognized by experts as safe and effective for their intended use are "new drugs," which cannot legally be marketed in interstate commerce. This also applies to vitamins and related products purported to treat or prevent disease even if they are marketed as "foods" or "nutritional supplements." Federal law also requires that drugs be labeled with adequate directions for use. Some states have similar laws.

Nutri-West markets more than 200 products which it classifies as glandulars, minerals, amino acids, digestives, enzymes, herbals, unsaturated fatty acids, specialty items, gels and topical applications. The "glandular" products and some of the mineral and specialty products contain bits of "raw tissue concentrates" from various animal glands. Although Nutri-West labels merely list ingredients, the intended use of the products for treating and preventing disease is clear from this seminar as well as materials given out by Nutri-West and its distributors.

According to an article in the *Cheyenne Star-Tribune*, Nutri-West was investigated by the FDA in 1985 and stopped selling an alleged gallbladder remedy to which the FDA objected. Federal regulatory agencies tend to shy away from the activities of state-licensed practitioners, leaving them to the supervision of state boards. This seminar indicates that Nutri-West and Cass deserve a closer look.

The author is a prominent investigative reporter who lives in New York City.

BRIEFS

Chiropractor "prescribing" stopped. The Supreme Court of Georgia has upheld a ruling by the Georgia State Board of Chiropractic Examiners that nutritional treatment is not within the scope of chiropractic under Georgia law. The case began when the Board took action against a chiropractor who had used a blood analysis report as the basis for treating a heart patient with six products that contained vitamins, minerals, enzymes and/or amino acids. According to the November 1987 *ACA Journal of Chiropractic*, the chiropractor claimed he was treating dietary deficiencies. But the Court held that "an article that happens to be a food but is intended for use in the treatment of a disease fits squarely within the drug definition" of state and federal laws. Chiropractors are not allowed to prescribe drugs.

Notable quote: "The health food industry is founded upon food terrorism. It justifies its very existence on the false notion that supermarket foods are unhealthful . . . Some consumer groups also engage in food terrorism by launching ill-founded attacks on the safety of the American food supply. They apparently feel that in order to justify their existence they must create the illusion that they are protecting the public from a poisoned food supply. They exploit the media by appealing to public cynicism. Consumers are always pictured as victims in a "we" vs. "they" scenario. Health behaviorists generally recognize that individual tastes and choices determine the healthfulness of people's diets. Food terrorists teach that some political solution is necessary."—William T. Jarvis, Ph.D., *NCAHF Newsletter*, Jan./Feb. 1988.

Author organizing referral list. Jack Z. Yetiv, M.D., Ph.D., author of *Popular Nutritional Practices*, has invited physicians, dietitians and other nutrition professionals who agree with his book's views to register with him for possible patient referrals. He has also invited victims of quackery to share their experiences with him. The book is now available in paperback for \$5.00 per book plus \$1.00 postage from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105. (Orders unaccompanied by payment will be returned.)

Drinking water hotline. The U.S. Environmental Protection Agency provides a toll-free hotline for general and technical information about the quality of drinking water. The number is 1-800-426-4791 (382-5533 in the District of Columbia).

Anti-irradiation bill vetoed. A bill to prohibit the sale or distribution of irradiated food in New Jersey was pocket-vetoed by the state's governor. Although the bill had passed the State Senate by a vote of 30-3 and the State Assembly by 62-3, the veto could not be overridden because the legislative session had ended. Food irradiation opponents plan to have the bill reintroduced.

Vitamin sales lagging? *Health Foods Business's* annual mail survey concluded that sales at about 7,000 health food stores totalled \$1.8 billion (down 10.2% from 1986), including \$441 million for vitamins and supplements (- 42.3%), \$119.6 million for bulk herbs (+ 58%), \$54.2 million for herb teas (+ 32%), \$22.4 million for macrobiotic foods (- 22%), \$10.8 million for grains and cereals (- 24%), and \$72.9 million for books (+ 8%). Despite the extraordinary drop in vitamin sales, the magazine's editorial director said that most people with whom he had talked felt that business had been good, that the number of responses to the survey had been fewer than usual, and that many of them had come from small stores. Thus, he cautioned readers "not to take the results too literally." In an interview in *Whole Foods*, Jerry Horn, president of General Nutrition Corporation said that GNC's 1,200 stores had grossed about \$350 million during 1987. Horn cited a Gallup Poll report that 14 million people stopped using supplements between August 1986 and August 1987, "primarily because these consumers felt they are eating better." But he suggested that this "drop" might have been due to overstatement of supplement sales in the past. Criticizing industry estimates of between \$2.6 and \$3.5 billion, he said, "No one can tell me how they gather the sales figures . . . I don't think it was ever over \$1.5 billion. As a matter of fact, it may not be a whole lot bigger than \$1 billion."

General Nutrition may be penalized. Under a proposed consent agreement with the Federal Trade Commission, General Nutrition Corporation will donate \$600,000 for nutrition research to settle charges that it engaged in unfair and illegal marketing practices. The proposed agreement would settle complaints filed during 1984 in which the FTC objected to GNC's promotion of Healthy Greens (a dried vegetable/vitamin/mineral product alleged to help prevent cancer—see *NF* 3:38) and six amino acid products alleged to help muscular development, extend life, or cause weight loss during sleep. GNC would be prohibited from making these claims or any other claim for any product that cannot be substantiated by scientific evidence. The research funds will be paid to the American Diabetes Association, American Cancer Society and American Heart Association to support research or fellowships in nutrition, obesity or physical fitness. Public comments will be accepted until May 23, 1988, after which the Commission will decide whether to accept or modify the proposed order. Once final, violations of FTC consent agreements can trigger penalties of up to \$10,000 per day. The address for comments is: FTC/Office of the Secretary, Room 136, 6th St. and Pennsylvania Avenue, Washington, DC 20580.

Victor Herbert on tape. Audiotaped discussions by Victor Herbert, M.D., Professor of Medicine, Mount Sinai School of Medicine, are available from Soundwords, 56-11 217 St., Bayside, NY 11364. The topics are *Understanding Nutrition* (2 tapes/\$25.90), *Nutrition Quackery & Fraud* (2/\$25.90), *Vitamins & Minerals* (\$12.95), *Vegetarian Diets* (\$12.95), and *Why Fad Diets Fail* (\$12.95). Shipping is 75¢ per order.

Fat substitute announced. The NutraSweet Company, a subsidiary of Monsanto Company, has announced plans to market a low-calorie, low-cholesterol fat substitute made of natural protein from egg white or milk. Called Simplese, the product is produced by a new cooking process that changes the protein into a substance that can be used to make products with the taste and texture of ice cream, butter, cheese spreads, creamy salad dressings and mayonnaise. In press releases, the company said foods made with Simplese would provide "all the pleasure and none of the penalty" of eating fat-laden foods and would lower the cost of some foods. Predicting that Simplese would be marketed within 12 to 18 months, the company claimed that since it is merely a change in the physical form of commonly used foods, it is like a recipe and does not need regulatory approval. However, the FDA responded that approval is needed, and the company has agreed to seek it. In 1986, the company sold \$700 million worth of aspartame (NutraSweet, Equal), but its exclusive patent expires in 1992.

"Health freedom" blasted. *The Unhealthy Alliance: Crusaders for "health freedom"* is available for \$3.00 from the American Council on Science and Health, 1995 Broadway, 18th Floor, New York, NY 10023. Written by Nutrition Forum editor Stephen Barrett, M.D., the 12,000-word report describes the purposes and activities of the National Health Federation (NHF), Health Alternatives Legal Foundation (HALF), American Quack Association (AQA) and Coalition for Alternatives in Nutrition and Healthcare (CANAH). The report also provides detailed background information on their leaders plus descriptions of many of the questionable methods they promote. Dr. Barrett concludes: "NHF, HALF, AQA and CANAH are antagonistic to accepted scientific methods as well as current consumer protection laws. Instead of supporting the rules of science and law, they want to destroy them. They want the right to market methods without the responsibility of ensuring that they are effective. In my opinion, the 'freedom' they espouse would be nothing more than a hunting license for quacks."

Nutritionist licensing update. In March Washington became the 18th state to regulate nutrition professionals with passage of a law certifying dietitians and nutritionists. The votes for passage were 96-0 in the state's House of Representatives and 97-1 in its Senate.

Information about sugar. A new videotape and other excellent educational materials designed to counter misinformation about sugar can be obtained by contacting Sarah Setton, Director of Public Affairs, The Sugar Association, 1101 15th Street, N.W., #600, Washington, DC 20005.

"Anti-aging" cosmetic claims should stop. The FDA has ordered 22 cosmetic firms to stop making claims that their skin cream products could influence cellular effects on the aging process. The Food, Drug, and Cosmetic Act defines cosmetics—which can be sold without FDA premarket approval—as products intended to cleanse or to superficially beautify. But any claim that a product changes the structure or function of the body or cures or treats a condition requires that the product's safety and effectiveness be demonstrated to the FDA before it is marketed. Last year the agency warned several major cosmetic companies to stop making claims that their products could counteract, retard or control the aging process, or to rejuvenate, repair or renew the skin. Some firms modified their labels, but claims unacceptable to the FDA continued for many products. The current order is intended to apply to all cosmetic firms, not just those to whom it was sent. Manufacturers were given 30 days to comply or face regulatory action.

Total food costs. According to the Food Institute, American consumers spent \$454.5 billion for food in 1987, up from \$438.8 billion in 1986. At-home food expenditure totalled \$305.8 billion, only \$7.5 billion more than in 1986. Food spending took 14.7% of after-tax income, continuing a slight downward trend.

Roger Williams dies. Biochemist Roger J. Williams, Ph.D., famed for his discovery of pantothenic acid, died February 20th at the age of 94. As a professor at the University of Texas and director of the Clayton Foundation Biochemical Institute, he was involved in additional scientific research. However, during his later years, he proposed a concept of "biochemical individuality" which encouraged above-RDA supplementation for everyone. He supported claims that megavitamins were effective against mental retardation and various illnesses, and he helped the health food industry gain passage of a law that weakened FDA jurisdiction over the dosage of vitamin products.

Kellogg modifies misleading ads. The National Advertising Division (NAD) of the Council of Better Business Bureaus has reported that ads for Kellogg Company's Special K cereal have been modified [NAD Case Report, 3/21/88]. Television ads had stated "Protein helps you keep the muscle while you lose the fat. That's what's special about Special K. It has the highest level of dietary protein of any cereal," while package labeling said, "Did you know the last time you starved yourself to lose fat, you might have lost muscle too?" Newspaper inserts made similar claims. When challenged, the company claimed that its messages were intended for people under severe calorie restrictions who could benefit by increasing protein intake. NAD agreed that Special K was a significant source of protein compared to other brands of ready-to-eat cereal and that a portion served with milk would be a useful component of a nutritionally balanced weight-loss diet. However, NAD also pointed out that people on severely restricted diets would benefit from supplementary protein of higher biological value and in more concentrated form than can be obtained from a cereal-based product. In continuing discussion, the company said that its advertising had been modified and now focuses on the contribution of a Special K breakfast to a nutritionally balanced diet and exercise program. *Editor's note:* This report illustrates two things: 1) financial penalties are needed to DETER companies from using misleading doubletalk in advertising; and 2) complaints to NAD can be effective against national advertisers. Its address is 845 Third Ave., New York, NY 10017.

SUNRIDER WARNINGS ISSUED

Stephen Barrett, M.D.

The FDA has warned consumers that Nutrien and Vitalite powdered drink mixes produced by Sunrider International of Torrence, California, should be avoided because testing has disclosed the presence of salmonella bacteria in a soybean extract used in the products. According to an FDA news release, the company has agreed to begin a nationwide recall but has refused to provide the FDA with specific distribution information. The release states that at least five reported cases were associated with an initial product recall earlier this year. Since then, three more complaints have been investigated with tests in two individuals indicating the presence of salmonella.

The California Department of Health Services has also issued a warning against public consumption of the products and has embargoed several lots of the extract from which they were made, while the Utah Department of Agriculture has barred further shipment of finished products made from the soybean powder extract.

Sunrider markets its products nationally through a multilevel network with more than 40,000 distributors and reported gross sales of about \$7 million per month. Anyone can become a distributor by completing an application and paying \$24 for a sales kit. Distributors can profit from retail sales and receive a percentage of the sales of other distributors that they sponsor. The company began operations in December 1982 in Orem, Utah, and moved its headquarters to California in July 1987. Its board chairman and current president is Tei Fu Chen, who was also the company's co-founder.

According to "The Sunrider Story," which appears in many company publications, ancient Chinese temple priests who were leading developers of the martial arts discovered special plant and herb combinations for increased endurance, energy and mental alertness and also discovered a balm to expedite healing of torn or bruised muscles. Chen's great-grandfather was able to obtain manuscripts containing the secrets of 5,000 years of research and became a prominent herbal physician. He and Chen's father began teaching them to Chen during his eighth year. Chen subsequently became a Taiwanese National Kung Fu champion, a medical doctor (in Taiwan), a licensed pharmacist (in the U.S.), a biochemist, and a "world renowned nutritionist."

"At the age of twenty," the story continues, "he became a Senior Research Scientist. He then spent 15 years in continued research, testing the principles taught in the manuscripts according to modern science and technology . . . As a young man, Dr. Chen was physically weak. He was small, underweight and over-

powered by physical allergies and illness. His own story of transformation was adequate proof of the legitimacy of the secrets on the pages of the manuscripts . . . The Sunrider Corporation is so named because of Dr. Tei Fu Chen's belief that we can 'Ride The Sun' to health and prosperity." ("If you can ride the sun, the day will never end.")

Sunrider literature claims that, "every disease is caused, retained, encouraged, or aggravated by a lack of nutrition." The company markets three product lines: Kandesn, Vitalite, and Sunergy.

Kandesn is a group of skin-care products said to "combine the finest herbal ingredients with the "Essence of Pearl" using ancient formulas to create products that enhance the health and beauty of the skin" and to "nourish the body . . . from within and without."

The Vitalite program promises "high energy level, manageable appetite, mental alertness, sustained well-being, effective metabolic pace, emotional stability, balance in body systems, and efficient cleansing processes." It includes supplement capsules, meal-substitute drinks that contain powdered protein and herbs, an herbal beverage, a vegetable soup mix, high-fiber cookies, and other low-calorie snacks. Kits containing a complete 2-week supply of Vitalite products wholesale for \$149.95.

The Sunergy line is composed of whole food concentrates, herbs, and supplements. The concentrates are listed in the table below. The herbs (goldenseal root, dandelion root, Korean white ginseng, white willow bark, Siberian ginseng root bark, and dong quai) are promoted with various claims that they help nourish, cleanse, purify and/or balance the body, increase hormone production, or enhance the power of the body. The supplements are Energy Plus (to provide energy and alertness), a stress formula ("to help the body resist the stresses of daily living"), and Metabalance 44 (said to include 15 vitamins despite the fact that only 13 exist for humans and the product contains only 12).

According to a notice in the company's bi-monthly magazine *Sunwriter*, "The Sunrider philosophy does not focus on disease, treatment, or cure . . . We are concerned with providing the body with the nutrition it needs to perform its miraculous functions. If the body needs to be healed, it has all the necessary equipment and procedures to accomplish the task, if it is given the essential nutrition. The Sunrider Corporation does not attempt to respond to specific illnesses . . . Prescribing treatment for disease is contrary to Sunrider philosophy to treat the body as a whole and give it the strength to heal itself. Instead of trying a specific treatment for a

specific ailment, Dr. Chen recommends the use of eight products in the Sunpack which address specific nutritional needs of the body."

Despite this disclaimer, Sunwriter invites distributors to submit letters and articles about how they were helped with health problems and offers a free \$145 Sunpack for those that are published. Most issues contain testimonials about weight-loss—including one claiming a loss of 67½ pounds in 59 days—and many contain success stories involving serious disease. Readers have reported that arthritis, ulcers, high blood pressure, lupus erythematosus, shingles, emphysema and pancreatitis have been helped, and one article even suggests that the products enabled a man to be removed from a kidney machine!

Although some Sunrider publications state that "a good nutritional program does not eliminate the need for health professionals," others imply that Sunergy products are superior to prescribed medications: "When you introduce a chemical substitute for an ailing organ or body system, that organ or system atrophies. The substitute may make a person feel better, but that feeling is nothing more than an 'illusion of health.' The organ or body system is still sick." But Sunrider products can "restore the body's capacity to regulate itself." The company claims that "nearly the entire medical philoso-

phy is based on substitution," whereas Sunrider works by "regeneration." According to a Sunrider cassette tape, there are plant combinations that will "support the genetic control of the body in all of the different body areas," and Sunrider products are "system-specific concentrated regenerative whole foods." *Product Bulletin #200*, distributed in 1984, advises readers that each Sunrider formula "favors a particular body system."

In 1983, the FDA sent Sunrider a notice of adverse findings which contains several criticisms of Nutrien Concentrate and Calli Tea. The company was ordered to stop claiming that Nutrien was adequate and effective to "produce energy, long life, and lasting health" and that Calli was "designed for health and beauty" and helps the user to be "slender, energetic, and full of life."

During 1984, the FDA obtained an injunction prohibiting Sunrider from marketing an unapproved sweetener extracted from the herb *Stevia rebaudiana* and sent the company a regulatory letter telling it to stop making more than 50 explicit claims that Assimilaid, Lifestream, Prime Again, and Concold (now marketed as Conco) could benefit specific organs or were adequate and effective against various disease conditions. Although these claims were stopped, I believe Sunrider is still violating the Food, Drug, and Cosmetic Act.

CLAIMS MADE FOR SUNENERGY PRODUCTS INCLUDED IN THE SUNPACK

Product	Number of Herbs	Stated Purposes*
Alpha 20 C (capsule)	5	Supplies nutrition used by the body to restore balance to the immune system; when the body has established genuine stability in the system, growths and distortions of cells are greatly prohibited
Assimilaid (capsule)	10	Gives the body the nutrition it needs to stimulate, lubricate, and equalize its digestive processes
Calli (tea)	5	Enhances the powers of the mind and heightens the ability to concentrate; helps body cleansing systems operate efficiently to reduce toxic waste and eliminate cholesterol and dangerous fatty substances
Conco (capsule)	6	Nourishes the body's ability to avoid and overcome illnesses
Lifestream (capsule)	8	Enhances the vital performance of circulatory and cardiovascular systems
Nutrien (drink mix)		Nourishes the body to improve cell-energy processes; supports the body in dealing with its challenges and addictions; helps create a sense of emotional wellbeing; provides nutrition the body needs to maintain stamina, strength, and beauty
Prime Again (capsule)	14	Nourishes glands that enhance the reproductive processes of both men and women; balances the nervous system, adrenal and hormone responses
Sunbreeze Balm (ointment)		Soothes tension, sore muscles, and abrasions; improves circulation, relieving pain as it accelerates healing; gives great relief in cases of arthritis, sore throat, toothache, ache, etc.; relieves congestion, motion sickness, sluggishness and tension, and increases mental alertness

*Source: Sunenergy Whole Food Concentrates Handbook (1985) in sales kit purchased during 1987.

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THE RISE AND FALL OF LAETRILE

Benjamin Wilson, M.D.

Laetrile is the trade name for *laevo*-mandelonitrile-beta-glucuronoside, a substance allegedly synthesized by Ernst T. Krebs, Jr., and registered with the U.S. Patent Office for the treatment of "disorders of intestinal fermentation." This compound is chemically related to amygdalin, a substance found naturally in the pits of apricots and various other fruits. Most proponents of Laetrile for the treatment of cancer use the terms "Laetrile" and amygdalin interchangeably.

Amygdalin was originally isolated in 1830 by two French chemists. In the presence of certain enzymes, amygdalin breaks down into glucose, benzaldehyde, and hydrogen cyanide (which is poisonous). It was tried as an anticancer agent in Germany in 1892, but was discarded as ineffective and too toxic for that purpose. During the early 1950s, Ernst T. Krebs, Sr., M.D., and his son Ernst, Jr., began using a "purified" form of amygdalin to treat cancer patients. Since that time scientists have tested substances called "Laetrile" in more than 20 animal tumor models as well as in humans and found no benefit either alone or together with other substances. Along the way its proponents have varied their claims about Laetrile's origin, chemical structure, mechanism of action, and therapeutic effects. Its place in history is assured, however, as a focus of political activities intended to abolish the laws protecting Americans from quackery.

Krebs, Sr. — Laetrile's "grandfather" — worked as a pharmacist before attending the San Francisco College of Physicians and Surgeons, from which he received his medical degree in 1903. During the influenza pandemic of 1918, he apparently became convinced that an old Indian remedy made from parsley was effective against the flu. He set up the Balsamea Company in San Francisco to market the remedy as Syrup Leptinol, which he claimed was effective against asthma, whooping cough, tuberculosis and pneumonia as well. During the early 1920s, supplies of Syrup Leptinol were seized by the FDA on charges that these claims were false and fraudulent. During the 1940s, Krebs, Sr., promoted Mutagen, an

enzyme mixture containing chymotrypsin, which he claimed was effective against cancer. He and his son also patented and promoted "pangamic acid" (later called "vitamin B₁₅"), which they claimed was effective against heart disease, cancer, and several other serious ailments. Krebs, Sr., died in 1970 at the age of 94.

Ernst T. Krebs, Jr. — Laetrile's "father" — has often been referred to as "Dr. Krebs" although he has no accredited doctoral degree. He attended Hahnemann Medical College in Philadelphia from 1938 to 1941, but was expelled after repeating his freshman year and failing his sophomore year. After taking courses in five different colleges and achieving low or failing grades in some of his science courses, he finally received a bachelor of arts degree from the University of Illinois in 1942. In 1973, after giving a 1-hour lecture on Laetrile, he obtained a "Doctor of Science" degree from American Christian College, a small, now-defunct Bible college in Tulsa, Oklahoma. The school, founded by evangelist Billy James Hargis, had no science department and lacked authority from Oklahoma to grant any doctoral degrees.

Laetrile's origin

Several versions of Laetrile's development have been published. In a 1962 book, Krebs, Sr., said that he had theorized that "cancer proteins" could be broken down by an enzyme he had prepared when he was a pharmacy student. When the substance proved too toxic in animal experiments, he boiled it and obtained better results. However, according to Michael Culbert, another prominent Laetrile promoter, Krebs ran a lucrative business analyzing smuggled whiskey for wood alcohol and developed Laetrile while working on a bourbon flavoring extract. During experiments with a mold growing on the barrels in which the whiskey was aged, he isolated an enzyme that he thought might have anti-tumor activity. When his supply of barrel mold was exhausted, he switched to apricot pits and used extracts (which he called Sarcarcinase) for various tests on animals and hu-

mans during the next two decades. In 1949, Krebs, Jr., modified his father's extraction process and named the result Laetrile.

Historian James Harvey Young has noted that Krebs, Sr., presented yet another version to FDA officials during an interview in 1962. Then he dated Laetrile's birth to 1951 and said he had tested it on patients but kept no records [Markle, G.E., and Petersen, J.C.: *Politics, Science and Cancer: the Laetrile Phenomenon* (1980), Westview Press, Boulder, Colorado]. Noting that this version was made public much earlier than the others, Dr. Young suspects that Laetrile's origin was backdated to try to evade new drug provisions of 1938 and 1962 FDA laws. In 1977, after thorough investigation, FDA Commissioner Donald Kennedy concluded, "While it appears that Dr. Krebs, Sr., was utilizing some substance, which apparently had the trademark Sarcasinase, before 1938, there is no evidence that the substance is identical . . . to the present-day Laetrile" [Laetrile: *The Commissioner's Decision*, H.E.W. Publication No. 77-3056].

Proponents' rationales

In 1902, a Scottish embryologist named John Beard theorized that cancer cells and cells produced during pregnancy called trophoblasts are one and the same. According to Beard, trophoblasts invade the uterine wall to form the placenta and umbilical cord. The pancreas then produces chymotrypsin, which destroys the trophoblasts. Beard postulated that if the pancreas fails to produce enough chymotrypsin, trophoblasts circulate through the body of both mother and infant, making them vulnerable throughout life to cancer.

In 1945, Krebs, Jr., founded the John Beard Memorial Foundation to "develop and apply" Beard's theories. In 1950, the Krebs published a version of Beard's thesis and stated that amygdalin kills trophoblast cells where trypsin has failed. They claimed that cancer tissues are rich in an enzyme that causes amygdalin to release cyanide which destroys the cancer cells. According to this theory, noncancerous tissues are protected from this fate by another enzyme which renders the cyanide harmless. After enforcement agencies began trying to ban Laetrile as a drug, the Krebs claimed that amygdalin is a vitamin ("B₁₇") and that cancer is caused by a deficiency of this vitamin. None of these theories is valid.

Claims for Laetrile effectiveness have also shifted. At first it was claimed to cure cancer. Later it was claimed to "control" cancer. When the "vitamin" theory was developed, it was touted as a cancer preventive. It has also been claimed to be effective in relieving pain associated with cancer and in facilitating treatment with chemotherapy.

Scientific review

One of the first practitioners to use Laetrile was Arthur T. Harris, M.D., who had trained in Scotland and

reportedly studied embryology under John Beard. Harris, who had been doing family practice in Southern California, renamed his office the Harris Cancer Clinic. Within a year he submitted a report to *Coronet Magazine* which claimed that he was "working on something out here that is going to be the answer to cancer if there will ever be one," but the magazine did not report what he was doing.

By that time, the California Medical Association was receiving inquiries about Laetrile. When members of its Cancer Commission approached Krebs, Sr., he claimed that "limited" trials of toxicity in animals had been performed with satisfactory results, but that the records had been destroyed. No human trials involving Laetrile had been undertaken, but the Commission was offered case reports of patients in which spectacular results had supposedly been observed. However, the details claimed by the Krebs team could not be confirmed by other sources. The Commission was able to obtain a small supply of Laetrile for animal tests at three medical centers — all of which produced negative results.

At one point, the Krebs' agreed to supply Laetrile for a controlled clinical investigation at Los Angeles County Hospital. But later they said they would do so only if a Laetrile advocate were put in charge — which was not acceptable to hospital authorities. The Commission then evaluated the records of 44 patients treated according to the Krebs' recommendations. Two years had elapsed since the first of these patients had been treated with Laetrile. Nineteen had already died and there was no evidence that Laetrile had helped any of the others.

Marketing increased

In 1956 Ernst T. Krebs, Jr., was introduced to Andrew R.L. McNaughton, who has been dubbed Laetrile's "godfather" by its supporters. McNaughton is the son of the late General A.G.L. McNaughton, commander of the Canadian Armed Forces during World War II. General McNaughton also served as president of the United Nations Security Council and the National Research Council of Canada.

Andrew McNaughton was educated at a Jesuit College and subsequently received training in electrical engineering, geology, mining, and business administra-

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tion. During the war he was the chief test pilot for the Royal Canadian Air Force. Subsequently, he made a fortune by converting cheaply obtained war surplus items into useful products for other nations. He provided arms for the emerging nation of Israel and was also a double agent for Fidel Castro, ostensibly working for the Batista government in Cuba but often arranging for purchases to be hijacked by Castro supporters. For his efforts, Castro made him an "honorary citizen of Cuba."

McNaughton met Krebs shortly after he had incorporated the McNaughton Foundation, which was seeking projects "on the outer limits of scientific knowledge." Intrigued by Krebs' account of the "Laetrile Wars," McNaughton began promoting and distributing Laetrile. In 1961, to facilitate distribution in Canada, he founded International Biozymes Ltd. (later renamed Bioenzymes International Ltd), located in the same building as the McNaughton Foundation. Eventually, he built factories in seven countries.

It has been alleged that a major Biozymes stockholder (under someone else's name) was a New Jersey mobster who was convicted of conspiring to bribe public officials in connection with gambling. In 1977, McNaughton told *American Medical News* that he had treated the man's sister with Laetrile and that the man was a "wonderful guy" who had given \$130,000 to the McNaughton Foundation.

During the 1970s, McNaughton experienced considerable difficulty in his financial dealings. In 1972 he was permanently enjoined from selling Biozymes stock in the United States as a result of a suit brought by the Securities and Exchange Commission. In 1973 he was charged by Italian police with having taken part in a \$17 million swindle involving purchasers of Biozymes stock who were under the impression that they were investing in an Italian Laetrile factory. In 1974, in a Canadian courtroom, McNaughton was found guilty of stock fraud involving a company named Pan American Mines. It appears that \$5 million had mysteriously disappeared. McNaughton was fined \$10,000 and sentenced to serve one day in jail. A warrant for his arrest was issued after he refused to pay the fine and left Canada without serving his sentence.

Publicity mounts

Besides overseeing production, McNaughton also sought publicity for Laetrile. He was able to convince a

Jersey City surgeon, John A. Morrone, to attend a presentation that Krebs, Jr., gave in Montreal. After having lunch with Krebs, Jr., Morrone reportedly went back to New Jersey a "convinced laetrilist," and began using Laetrile on his patients.

At McNaughton's request, Morrone wrote a report on ten patients he had treated with Laetrile, which was published in 1962 in *Experimental Medicine and Surgery*, a journal no longer being published. McNaughton also arranged for a freelance writer named Glenn Kittler to write two magazine articles and a book on Laetrile. Kittler, who had studied to become a priest before becoming a journalist, had been an associate editor of *Coronet* magazine in 1952. The articles were published in March 1963 in *American Weekly*, a Sunday supplement to the Hearst newspapers. Immediately afterward, Kittler's book, *Laetrile: Control for Cancer*, was rushed into print with an initial press run of 500,000 copies. The book carried a foreword by McNaughton — with his Foundation's Montreal address. According to Kittler, the book's publisher was so confident that publicity from the articles would boost sales that he didn't send prepublication advertising to book distributors. When sales lagged, Kittler claimed that pressures from the AMA and FDA were partially responsible.

Support groups

The efforts of McNaughton and Kittler were not fruitless, however. Cecile Hoffman was a San Diego schoolteacher who had undergone a radical mastectomy in 1959. After reading Kittler's book, she visited the McNaughton Foundation in Montreal and received Laetrile. Although she was unable to find an American physician who would administer her intravenous Laetrile injections, she did find Ernesto Contreras, M.D., just across the Mexican border in Tijuana. This was perhaps the most fortunate thing that ever happened to Dr. Contreras.

Contreras was a former Mexican Army pathologist who was in private practice in Tijuana. After he administered the Laetrile, Mrs. Hoffman became convinced that it controlled her cancer and saved her life. She remained a fervent Laetrile supporter until she died of metastatic breast cancer in 1969.

Hoffman's convictions led her to form the International Association of Cancer Victims and Friends (IACVF) in 1963. (The word Victims was later changed to

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Victors.) IACVF's purpose was "to educate the general public to the options available to cancer patients, especially terminal cancer patients." Joining forces with health food industry promoters, the association began holding annual conventions in Los Angeles that drew thousands of people. These meetings provided a forum for virtually anyone who either promised or sold a cancer remedy that was not recognized as effective by the scientific community. The Krebs spoke often at these conferences. IACVF also founded the Cancer Book House, which sold literature promoting unorthodox cancer treatments. In addition, it arranged for room, board and transportation to Contreras' clinic from a California motel near the border.

Contreras, meanwhile, expanded his clinic and added translators to his staff to accommodate the influx of American patients. Business was so brisk that in 1970 he constructed a new clinic — the Del Mar Medical Center and Hospital — which he promoted as "an oasis of hope."

In 1973, several leaders left IACVF to found the Cancer Control Society, whose activities are similar to those of IACVF. Another group promoting dubious cancer therapies is the National Health Federation (NHF), which supports a broad spectrum of questionable health methods. This group was founded in 1955 by Fred J. Hart, president of the Electronic Medical Foundation, a company that marketed quack devices. NHF sponsors meetings, generates massive letter-writing campaigns, and helps defend questionable methods in court cases. Four people who have served on its board of governors and the husband of its current president have been convicted of laetrile-related crimes.

Legal problems

The first seizure of Laetrile in the United States occurred in 1960 at the former Hoxsey Cancer Clinic, which was then being operated by osteopathic physician Harry Taylor, a former Hoxsey employee. Two months before the seizure, a federal court judge had ordered Taylor to stop distributing the various Hoxsey concoctions. The seizure was not contested by Taylor.

In 1961 Krebs, Jr., and the John Beard Memorial Foundation were indicted for interstate shipment of an unapproved drug — not Laetrile but pangamic acid. After pleading guilty, Krebs was fined \$3,750 and sentenced to prison. However, the sentence was suspended when Krebs and the Foundation agreed to terms of a 3-year probation in which neither would manufacture or distribute Laetrile unless the FDA approved its use for testing as a new drug.

In 1959 the California legislature had passed a law similar to the Federal Food, Drug, and Cosmetic Act, banning commerce of hazardous foods, drugs and cosmetics within California. The California Department of Public Health then formed a Cancer Advisory Council

which studied Laetrile and other dubious cancer treatments. The ten physicians and five research scientists carried out their investigation from 1960 to 1962 and issued their report in May 1963.

During 1962 and 1963, the Cancer Advisory Council examined more than 100 case histories submitted by various proponents and concluded that none provided any evidence that Laetrile was effective against cancer. The Council also reviewed the California Medical Association's 1953 report on Laetrile, as well as a "new synthetic" Laetrile purportedly developed by Krebs, Jr. In addition, medical records of 144 patients treated with Laetrile were reviewed from physicians in both the United States and Canada.

After the Council determined that the drug was "of no value in the diagnosis, treatment, alleviation or cure of cancer," it recommended that regulations be issued to ban the use of Laetrile and "substantially similar" agents for the treatment of cancer. Despite considerable opposition from Laetrile promoters, the regulation was issued under provisions of California's Cancer Law and became effective November 1, 1963.

The Krebs family returned to court several more times. In 1965, Krebs, Sr., was charged with disobeying a regulatory order forbidding interstate shipment of Laetrile and pleaded "no contest." The following year he pleaded guilty to a contempt charge for shipping Laetrile in violation of injunctions and failing to register as a drug manufacturer. He received a suspended 1-year sentence. In 1974 Ernst, Jr., and his brother Byron pleaded guilty to violating the California state health and safety laws. Each was fined \$500, given a suspended sentence of six months, and placed on probation. Byron had his osteopathic license revoked the same year for "mental incompetence", and died shortly thereafter. In 1977, Ernst, Jr., was found guilty of violating his probation by continuing to advocate Laetrile and was sentenced to 6 months in the county jail. He was jailed during 1983 after the appeals process ended.

Meanwhile, Howard H. Beard (not a relative of John Beard), who had worked with Krebs and Dr. Harris, suffered an unfavorable ruling from the California Cancer Advisory Council. For many years he had promoted various urine tests purported to measure the level of human chorionic gonadotropin (HCG). Both Krebs and Beard had claimed that all cases of cancer could be diagnosed on the basis of an elevated HCG test. In 1963 Krebs, Jr., stated that the "scientific implementation" of Laetrile relied upon Beard's test.

Beard had further claimed that an elevated HCG level was sufficient indication for treatment with Laetrile, even in the absence of clinical findings or a positive biopsy for cancer. A true believer in his test, he reportedly began taking Laetrile himself after noting that his urine test was not quite normal. Beard maintained a laboratory offering mail-order service, including measurement of the urinary HCG levels.

Beard developed at least three alleged cancer tests, the most notable of which was his Anthrone Color Test. He claimed nearly 100% accuracy if patients who were pregnant, had liver disease or diabetes, or were taking sex hormones were excluded. He also claimed that the test was so sensitive that it was able to detect the development of cancer within 2-3 weeks after malignant transformation took place.

During the early 1960s the California Cancer Advisory Council had provided Beard with 24-hour urine specimens from 198 patients, as well as two "urine" specimens which consisted of lactose dissolved in water. Simultaneous tests were performed at the California State Public Health Laboratories. Beard was unable to identify which urine came from patients with cancer and which came from patients with other conditions. The investigation also demonstrated that Beard's test results had nothing to do with cancer but depended mainly on the amount of lactose in the urine. Consequently, the test was banned in California as of August 1965. In 1967 Beard was indicted by a federal grand jury in Texas on nine counts of mail fraud related to the marketing of his test. After pleading no contest, he was given a 6-month suspended jail sentence and 1-year probation.

Further efforts toward respectability

The McNaughton Foundation persisted in trying to make Laetrile respectable. They commissioned the SCIND Laboratories in San Francisco to conduct animal studies involving a transplanted tumor system in rats. Although the Foundation had reported that weekly doses of 1 or 2 grams of Laetrile had produced "a brilliant response" in cancer patients and the rats received human equivalents of 30-40 grams, the results were negative.

Undaunted by the negative report, the McNaughton Foundation filed an Investigational New Drug application with the FDA. The FDA responded with a routine form letter giving permission — subject to further review — for investigational clinical trials involving Laetrile. However, eight days later, when the review was completed, the agency requested additional information from the McNaughton Foundation to correct "serious deficiencies" in the application. When this was not produced, the authorization for clinical trials was withdrawn.

While the McNaughton Foundation was attempting to have Laetrile recognized as a drug, Krebs, Jr., began claiming that it was a vitamin, which he called B₁₇. (It only took him about 20 years to come to this conclusion.) Krebs apparently hoped that as a "vitamin" Laetrile would not be subject to the "safety and efficacy" requirements for new drugs. He may have also hoped to capitalize on the popularity of vitamins.

By 1974 Dr. Contreras stated that he was seeing 100-120 new patients per month, with many more pa-

tients returning to obtain additional Laetrile. Patients typically were charged \$150 for a month's supply. Contreras acknowledged that few of his cancer patients were "controlled" with Laetrile. While admitting that 40% of the patients displayed no response, he claimed that 30% showed "most definite responses" to the drug. However, these statistics may not be reliable. In 1979 he claimed to have treated 26,000 cancer cases in 16 years. Yet when asked by the FDA to provide his most dramatic examples of success, Contreras submitted only 12 case histories. Six of the patients had died of cancer, one had used conventional cancer therapy, one had died of another disease after the cancer had been removed surgically, one still had cancer, and the other three could not be located.

The first "metabolic" doctor

John Richardson was a general practitioner who began practice in the San Francisco Bay area in 1954. In 1971, after discussions with Krebs, Jr., he decided to become a cancer specialist. He had not encountered overwhelming success as a general practitioner. His 1972 income tax return revealed that he had grossed \$88,000 in his medical practice, leaving a net of only \$10,400 taxable income.

Richardson's practice boomed as a result of his newly found status as a cancer "expert." He states that "Our office soon was filled with faces we had never seen before — hopeful faces of men and women who had been abandoned by orthodox medicine as hopeless or "terminal" cases." In 1974 he reported that his medical practice had grossed \$783,000, with a net income of \$172,981. By charging patients \$2,000 for a course of Laetrile, Richardson managed to increase his net income 17-fold in just two years. According to his income tax returns, Richardson grossed \$2.8 million dollars from his Laetrile practice between January 1973 and March 1976. The actual amount of money he received may have even been higher. In *Laetrile Case Histories*, he claimed to have treated 4,000 patients, with an average charge of \$2,500 per patient. Culbert states that by 1976 Richardson had treated 6,000 patients. If these figures are correct, Richardson would have grossed between \$10 and \$15 million dollars during this time.

Richardson's practice changed significantly after he began treating cancer patients with Laetrile. He also began treating what he termed "pre-clinical syndrome" patients with Laetrile. These were patients with no identifiable tumor or lesion who complained of feelings of "impending doom, malaise, unexplained or vague pains, headaches, bowel changes, loss of appetite, loss of energy, and depression." According to Richardson, cancer patients reported a reduction in pain, an improved appetite, return of strength, and an improved mental outlook. In addition, high blood pressure returned to normal.

In spite of these "dramatic improvements," Richardson admitted that most of his cancer patients died. In an attempt to overcome this, he increased the Laetrile dosage to nine grams, six days a week, and placed patients on a vegetarian diet and "massive" doses of regular vitamins. Richardson coined the phrase "metabolic therapy" to refer to this combination of diet manipulation, vitamins and Laetrile.

In June 1972, Richardson's office was raided and he was arrested for violating California's Cancer Law. He was convicted of this charge, but the conviction was overturned on a technicality and a new trial ordered. Two more trials followed which resulted in hung juries. Hearings before the California Board of Medical Quality Assurance in 1976 resulted in the revocation of his California medical license. He then worked at a Mexican cancer clinic. During the 1980s he practiced under a homeopathic license in Nevada until he had open heart surgery and entered an irreversible coma.

Political explosion

Dr. Richardson's arrest triggered the formation of the Committee for Freedom of Choice in Cancer Therapy (now called the Committee for Freedom of Choice in Medicine). The group's founder and President was Robert Bradford, a former laboratory technician at Stanford University. Michael Culbert, who at the time of Richardson's arrest was an editor at the Berkeley Daily Gazette, became a major spokesman for the Committee, editing their newsletter, *The Choice*, and writing two books promoting Laetrile: *Vitamin B-17: Forbidden Weapon Against Cancer* (1974) and *Freedom From Cancer* (1976).

Culbert was assisted in editing *The Choice* by Maureen Salaman, wife of Committee vice-chairman Frank Salaman. The Committee's legislative advisor was Georgia Congressman Larry McDonald, a urologist who used Laetrile. CFCCT's activities were closely allied with the John Birch Society, to which Richardson, Bradford, Culbert, the Salamans and McDonald all belonged. Soon after its formation, CFCCT established local chapters throughout the United States and used bookshops associated with the John Birch Society to hold meetings and distribute literature.

In May 1976 Richardson was indicted, along with his office manager, Ralph Bowman, and fellow CFCCT members Robert Bradford and Frank Salaman, for conspiring to smuggle Laetrile. A year later all were convicted of the charges. Bradford was fined \$40,000, Richardson \$20,000, and Salaman and Bowman \$10,000 each. During the trial it was disclosed that Bradford had paid \$1.2 million dollars for 700 shipments of Laetrile and that Richardson had banked more than \$2.5 million during a 27-month period.

The NCI scientist

Although facing problems on some fronts, the

Laetrile movement gained adherents. Dr. Dean Burk was a biochemist with a Ph.D. from Cornell Medical College who had joined the National Cancer Institute (NCI) in 1939 as a research fellow. After ten years he was appointed as Head of the Cytochemistry Section of the National Cancer Institute, which had a staff of four persons at the time of his retirement 25 years later.

At McNaughton's request, Burk did an experiment in which Laetrile was used to kill a tissue culture of cancer cells. He reported to McNaughton that he could "see the cancer cells dying off like flies." Eventually Burk concluded that Laetrile was the most effective treatment available for cancer, that it relieved the pain of terminal cancer victims, and that it might be useful in preventing cancer. He also claimed in Congressional testimony that Laetrile was less toxic than sugar. Burk became fast friends with Krebs, Jr., and was given a permanent room in Krebs' San Francisco mansion. He was soon on the "Laetrile circuit" and was given the Cancer Control Society's "Humanitarian Award" in 1973.

Burk also became active in opposing fluoridation and spoke against it in many cities throughout the United States and Europe. An inveterate tobacco user, he claimed in Congressional testimony that he had developed a safer cigarette.

The professor

In 1977, Harold W. Manner, Ph.D., chairman of the biology department at Loyola University in Chicago, achieved considerable notoriety by claiming to have cured mammary cancers in mice with injections of Laetrile and proteolytic enzymes and massive oral doses of vitamin A. What he actually did was digest the tumors by injecting digestive enzymes in amounts equivalent to injecting a woman with a pint of salt water containing about 1½ ounces of meat tenderizer every other day for six weeks. Not surprisingly, the mice developed abscesses where the enzymes were injected, the tumors were liquefied, and the injected tissue fell off. Since no microscopic examinations were conducted and the animals were observed for only a few weeks following treatment, no legitimate assessment of this type of therapy could have been made. But Manner announced at a press conference sponsored by the National Health Federation that a combination of Laetrile, vitamins and enzymes was effective against cancer. He reported his experiments in a chiropractic journal and wrote a book called *The Death of Cancer*.

Manner also founded the Metabolic Research Foundation whose stated purpose was research into "metabolic diseases," which — according to him — included arthritis, multiple sclerosis, and cancer. Sponsored by the Nutri-Dyn company, he held seminars throughout the country for chiropractors and unorthodox physicians. Nutri-Dyn manufactured processed animal glands ("glandulars"), which Manner said would

help the corresponding body parts of cancer patients. In 1982, a reporter from WBBM-TV Chicago became Metabolic Physician #219 by attending a seminar in Los Angeles and donating \$200 to the Metabolic Research Foundation. To indicate his "professional" background, the reporter used the initials "D.N.," which, he later explained, stood for "Doctor of Nothing." Manner promised to refer ten patients a year to him.

According to Manner, the Loyola University administration became upset with his activities and asked him to either give them up or resign from his position at the school — so he resigned. Today he performs public relations for the Clinica Manner in Tijuana, Mexico, and continues to solicit health practitioners to become "Metabolic Research Physicians."

The Rutherford case

Glen Rutherford was a 55-year-old Kansas seed salesman who was found to have a grape-sized polyp of the colon in 1971. When a biopsy revealed that it was cancerous, he was advised to have it removed. Fearful of surgery, he consulted Dr. Contreras, who treated him with Laetrile, vitamins and enzymes, and cauterized (burned off) the polyp. Although cauterization usually cures this type of cancer when it is localized in a polyp, Rutherford emerged from this experience claiming that Laetrile had cured him and was necessary to keep him alive. *People Magazine* reported that he also began taking 111 pills (mostly vitamins) costing \$14 per day. In 1975 he became lead plaintiff in a class action suit to force the FDA to allow "terminal" cancer patients to obtain Laetrile for their own use.

The case was heard before Judge Luther Bohanon in the Western Oklahoma United States District Court. Bohanon was extremely sympathetic to Rutherford's wishes. In 1977 Bohanon issued a court order permitting individuals to import Laetrile for personal use if they obtained a doctor's affidavit stating they were "terminally ill." Two years later, the U.S. Supreme Court rejected the argument that drugs offered to "terminal" patients should be exempted from FDA regulation. However, further efforts by Rutherford and his supporters plus defiant rulings by Bohanon enabled the affidavit system to remain in effect until 1987, when it was finally dissolved.

Legislative action

During the mid-1970s, Laetrile promoters portrayed themselves as "little guys" struggling against "big government" and began trying to legalize the sale of Laetrile. Eventually, 27 states passed laws permitting the sale and use of Laetrile within their borders. Federal law still forbade interstate shipment of Laetrile, and since it was impractical to manufacture it for use in just one state, these state laws had little or no practical effect. Proponents hoped, however, that if enough states legalized its use within the states, Congress would change

the federal law as well. Although bills were introduced to exempt Laetrile from FDA jurisdiction, they were unsuccessful and petered out with the death of Congressman McDonald in 1983.

In 1977, a U.S. Senate subcommittee chaired by Senator Edward Kennedy (D-MA) held hearings on Laetrile that developed interesting testimony. Dr. Richardson claimed that the FDA, AMA, National Cancer Institute, American Cancer Society, Rockefeller family and major oil and drug companies had all conspired against Laetrile. Robert Bradford said that he would welcome a test of Laetrile but that "orthodox medicine was not qualified" to do one. However, he, Krebs, Jr., and Richardson were unable to agree on the formula for Laetrile. Senator Kennedy concluded that the Laetrile leaders were "slick salesmen who would offer a false sense of hope" to cancer patients. *The New York Times* commented that the Laetrile promoters were regarded by the Senators "with a blend of amusement and contempt."

Victims in the news

As Laetrile became newsworthy, several cancer victims treated with it drew widespread media scrutiny. One was Chad Green, who developed acute lymphocytic leukemia at age 2½. Although he was rapidly brought into remission with chemotherapy, his parents started him on "metabolic therapy" administered by a Manner Metabolic Physician. When Chad developed signs of cyanide toxicity, Massachusetts authorities had him declared a ward of the court for treatment purposes only. His parents then brought suit to reinstitute "metabolic therapy." When the court ruled against them, they fled with Chad to Mexico, where he was treated by Dr. Contreras. Several months later Chad died in a manner suggestive of cyanide poisoning. Dr. Contreras stated that the boy had died of leukemia, but was a good example of the effectiveness of Laetrile because he had died a pleasant death! Chad's parents stated that he had become very depressed because he missed his grandparents, his friends and his dog.

Joseph Hofbauer was a nine-year-old with Hodgkin's disease. Unlike Chad Green's parents, Joseph's parents never allowed him to receive appropriate treatment but insisted that he receive Laetrile and "metabolic therapy." When New York State authorities attempted to place him in protective custody, his parents filed suit and convinced family court judge Loren Brown to rule against recognized treatment of Hodgkin's disease. Brown stated that "This court also finds that metabolic therapy has a place in our society, and hopefully, its proponents are on the first rung of a ladder that will rid us of all forms of cancer." Joseph died of his disease two years later. Acute lymphocytic leukemia and Hodgkin's disease both have a 95% 5-year survival rate with appropriate chemotherapy.

During 1980, movie star Steve McQueen attracted considerable attention when he was treated with Laetrile at another Mexican clinic under the supervision of William D. Kelley, a dentist who had been delicensed by the State of Texas after several brushes with state and federal law enforcement authorities. Although McQueen gave a glowing report when he began his treatment, he died shortly afterward.

NCI studies

In response to political pressure, the National Cancer Institute undertook two studies involving Laetrile. The first was a retrospective analysis of patients treated with Laetrile. Letters were written to 385,000 physicians in the United States as well as 70,000 other health professionals requesting case reports of cancer patients who were thought to have benefited from using Laetrile. In addition, the various pro-Laetrile groups were asked to provide information concerning any such patients.

Although it had been estimated that at least 70,000 Americans had used Laetrile — only 93 cases were submitted for evaluation. Twenty-six of these reports lacked adequate documentation to permit evaluation. The remaining 68 cases were “blinded” and submitted to an expert panel for review, along with data from 68 similar patients who had received chemotherapy. That way the panel did not know what treatment patients had received. The panel felt that two of the Laetrile-treated cases demonstrated complete remission of disease, four displayed partial remission, and the remaining 62 cases had exhibited no measurable response. No attempt was made to verify that any of the patients who might have benefited from Laetrile actually existed. The reviewers concluded that “the results allow no definite conclusions supporting the anti-cancer activity of Laetrile.”

Although the NCI mailing had not been designed to uncover negative case reports, 220 physicians submitted data on more than 1,000 patients who had received Laetrile without any beneficial response.

In July 1980 the National Cancer Institute undertook clinical trials of 178 cancer patients who received Laetrile, vitamins and enzymes at the Mayo Clinic and three other prominent cancer centers. The study included patients for whom no other treatment had been effective or for whom no proven treatment was known. All patients had tumor masses that could easily be measured, but most of the patients were in good physical condition. Since Laetrile proponents were unable to agree on the formula or testing protocol for Laetrile, NCI decided to use a preparation that corresponded to the substance distributed by the major Mexican supplier, American Biologics. The preparation was supplied by the NCI Pharmaceutical Resources Branch and verified by a variety of tests. The dosage of Laetrile was based on the published recommendations of Krebs, Jr., and the

Bradford Foundation.

The results of the trial were clear-cut. Not one patient was cured or even stabilized. The median survival rate was 4.8 months from the start of therapy, and in those still alive after seven months, tumor size had increased. This was the expected result for patients receiving no treatment at all. In addition, several patients experienced symptoms of cyanide toxicity or had blood levels of cyanide approaching the lethal range [*New England Journal of Medicine* 306:201-206, 1982]. An accompanying editorial concluded: “Laetrile has had its day in court. The evidence, beyond reasonable doubt, is that it doesn't benefit patients with advanced cancer, and there is no reason to believe that it would be any more effective in the earlier stages of the disease . . . The time has come to close the books.”

Bradford and American Biologics responded to the study with three different lawsuits against the National Cancer Institute, alleging that as a result of the study, they had sustained serious financial damage from a drastic drop in demand for Laetrile. All three suits were thrown out of court.

Epilogue

As long as there remain crippling and fatal diseases, there will undoubtedly be individuals eager to offer “alternatives” to scientific treatment and large numbers of desperate individuals willing to purchase them. The Laetrile phenomenon started with a pharmacist-physician who developed one concoction after another for the treatment of serious diseases, especially cancer. It continued with his son, a self-imagined scientist, who spent many years in college but failed to earn any graduate degree. A man who earned his fortune from gun-running and a catholic newspaper columnist promoted it as a persecuted drug that cured cancer. A cadre of John Birch Society members saw the repression of Laetrile as a sinister plot against their basic freedoms. After it was dubbed “vitamin B-17,” an army of health food devotees promoted Laetrile, along with vitamins and diet, as nature's answer to cancer.

After peaking in the late 1970s, the “Laetrile Movement” ran out of steam in the wake of the Supreme Court decision, the NCI study, the death of Steve McQueen, and other unfavorable publicity. But as the Laetrile fantasy faded, its prime movers added many other “miracle cures” to their arsenal and added AIDS, arthritis, cardiovascular disease and multiple sclerosis to the list of diseases they claim to treat. Although they appear to speak with sincerity, they still fail to sponsor the type of research which could persuade the scientific world that anything they offer is effective.

Dr. Wilson, who practices surgery in Dallas, Oregon, is a board member of the National Council Against Health Fraud.

BRIEFS

Diet patches banned. Meditrend International of San Diego is a multilevel company that has been marketing adhesive patches it claims can control appetite. Users have been instructed to place 1 or 2 drops of a "homeopathic appetite control solution" on a patch and wear it all day affixed to an "acupuncture point" on the wrist — so it can "bioelectrically" depress the appetite center of the brain. A 1,000-calorie low-fat diet is advised. Although company literature notes that "effectiveness is directly related to the degree in which you reduce your usual daily food intake," it has claimed that one user lost 63 pounds in 37 days. In February 1988, the company asked its distributors to destroy any product literature in their possession and said new literature was being developed "that is being approved by the legal department of the FDA." In May, the FDA issued a Talk Paper stating that (contrary to suggestions that diet patches meet FDA standards) no nonprescription skin patch has been approved by the agency for any use and that the FDA is reviewing the status of these products. A few days later, the Pennsylvania Department of Health said there is no evidence that diet patches work and banned the sale, within Pennsylvania, of patches marketed by Meditrend International and the Dermaline Corporation of Las Vegas.

Fit for Life update. Harvey and Marilyn Diamond, authors of *Fit for Life* and *Healthy Living*, are now publishing a bimonthly 4-page newsletter called *Keeping In Touch With FIT FOR LIFE*. The first six issues have attacked nutritionist licensing, food irradiation and immunization of children, and have advised women with suspected breast cancer to seek nutritional treatment rather than surgery. (The Diamonds regard most breast cancers as lymph glands filled with "toxic waste" that can be "cleansed" by eating fruits and vegetables.) The April/May 1988 issue states: "We have always had the dream that Fit for Life could be much, much more than just a book. We have shared visions of food emporiums where people would be able to sit down and enjoy wonderful Fit for Life meals or sip Date Shakes while they shopped. We have visualized Fit for Life resorts and healing centers and our own line of products in the supermarkets. We have dreamed about nationwide seminar tours which would allow us to meet our friends face-to-face, and our own radio show, allowing you to call in and talk to us. Over the last six months all of this has been formulated into the Fit for Life Enterprises business plan and we are now a health lifestyle corporation!" The address for subscriptions (\$15) is 2210 Wilshire Blvd., Suite 118, Santa Monica, CA 90403.

"Allergy" hoax. Concerned about unfair attacks on food additives, Caroline Richmond, a medical historian at London University, wrote a spoof manifesto for the Dye Research Allergies Bureau (DRAB), a spin-off of a larger group called the Food Additives Research Team (FART). According to the manifesto, the public was being put at risk by unscrupulous manufacturers who made clothes stuffed with unnecessary dyes solely to boost their profits. After sending a copy to the leading organization campaigning against additives on behalf of supposed allergy sufferers, Ms. Richmond was surprised that the group's newsletter reported on DRAB and people wrote to her that dye fabrics had caused them all sorts of problems. After the hoax was revealed, the allergy group maintained that dyes did cause allergies and that Ms. Richmond had unwittingly performed a public service by highlighting this problem.

Concern about urethane. According to FDA officials, urethane (ethyl carbamate) is carcinogenic for several species of animals and must therefore be considered a possible carcinogen for humans [FDA Consumer 22(3):16-17, 1988]. Since January 1986, the FDA and Bureau of Alcohol, Tobacco, and Firearms have sampled about 1,200 alcoholic products for urethane levels. They found some bourbons contained up to several hundred parts per billion (ppb), table wines generally varied from zero to 25 ppb, vodka contained little or none, and plum and cherry brandies varied from 200 to 12,000 ppb. Urethane forms during the fermentation of alcoholic beverages, especially when products are heated, and is not completely avoidable. In 1985, Canada set regulatory limits for table wines (30 ppb), ports and sherries (100 ppb), distilled spirits (150 ppb), and fruit brandies, cordials and liqueurs (400 ppb). During the past few months, the FDA has accepted voluntary plans to reduce urethane levels in American-made wines and whiskeys. But according to Richard Ronk, acting director of the FDA Center for Food Safety and Applied Nutrition, "the extent of the risk to the consumer is not clear. Until we have more information on the toxicity of the chemical and how much of it can be avoided in the manufacture of alcoholic beverages, it would be inappropriate to establish regulatory limits or to recall alcoholic products." At the FDA's request, the National Toxicological Program, funded by several federal agencies, has agreed to give urethane its highest priority for study in 1988. This research, to be completed in the next few years, is expected to yield the toxicological information needed to assess the risk posed by urethane in alcoholic beverages.

Chik-Chek flunks. Chik-Chek, manufactured by Diversified Diagnostics of Moraga, California, entered the mail-order marketplace in the spring of 1987 in the wake of national publicity about salmonella. It was claimed to be able to detect salmonella and other dangerous bacteria in raw meat, poultry, milk and eggs within 15 minutes. However, the U.S. Agriculture Department's Food Safety and Inspection Service tested 60 kits and concluded that Chik-Chek was neither reliable nor useful. The test results included both false negatives and false positives and even indicated that bacteria were present in sterile lab solutions. The test kit directed users to dip a cotton swab in raw chicken juices and then in two solutions provided with the kit. If results were positive, users were to thoroughly wash their hands and any utensils that had been in contact with the poultry or juice. But these precautions should be routine after handling any raw meat or poultry. Marketing of the test kits appears to have stopped [*Food News for Consumers* 5(1):13-14, 1988].

Eating habits deteriorating? A study by Pillsbury Corporation has concluded that 26% of Americans are now "Chase and Grabbits" who are most likely to subsist on fast food, frozen dinners, and carry-out pizza.

Alcohol warning labels? S. 2047 and H.R. 4441 have been introduced in the U.S. Congress to require alcoholic beverage labels to carry warnings similar to those on tobacco products. The bills are supported by a coalition of more than 50 national consumer, health and alcoholism organizations. The warnings would state: 1) The Surgeon General has determined that the consumption of this product, which contains alcohol, during pregnancy, can cause mental retardation and other birth defects; 2) Drinking this product, which contains alcohol, impairs your ability to drive a car or operate machinery; 3) This product contains alcohol and is particularly hazardous in combination with some drugs; 4) The consumption of this product, which contains alcohol, can increase the risk of developing hypertension, liver disease and cancer; and 5) Alcohol is a drug and may be addictive. Meanwhile, two suits have accused beverage manufacturers of negligence. In one case, a plaintiff has accused four beverage manufacturers of negligently failing to warn on their labels that alcohol intake during pregnancy can damage the fetus. In the other case, a man with cirrhosis of the liver contends that two manufacturers were negligent because they failed to: 1) warn that their beverages can damage health; 2) indicate how much alcohol could be safely consumed over long periods of time; and 3) test their products to determine what amounts could constitute a long-range hazard.

Food safety hotline. During June, July and August, residents of Florida, Illinois and Massachusetts will be able to dial 1-800-426-3758 to ask questions on any aspects of food safety. This is a pilot project of U.S. Departments of Agriculture and Health and Human Services, which hope to reduce the incidence of food-borne illnesses. The project's results will be used to determine whether a nationwide hotline will be set up.

"Organic" carrot scandal. The *San Francisco Chronicle* has reported that carrots packaged by Pacific Organics were removed from the shelves of area natural food stores amid reports they were ordinary carrots repackaged to look "organic." According to the article, the switch was documented by an employee of a competing firm who posed as a writer for an organics newsletter and was given a tour of Pacific's plant. She returned with a photograph of a dumpster full of emptied carrot bags from another supplier who normally handles non-organic produce and other photos showing workers stuffing carrots into clear cellophane. (Suspicion had arisen because Pacific Organics was able to provide large quantities of supposedly organic carrots after the harvest season had ended and other supplies had dried up.) California is one of a few states that legally defines "organic" as grown without pesticides or artificial fertilizers. Although violators of the law can be criminally prosecuted, the chief of the California health department's food and drug branch does not remember the state investigating or prosecuting any such case.

Dietary fat/breast cancer study scrapped. The Women's Health Trial, designed to see whether reducing dietary fat will prevent breast cancer, has been stopped. According to a report in *Medical World News*, the National Cancer Institute's board of counselors concluded there is little evidence supporting the hypothesis that dietary fat is a cause of breast cancer and judged the trial design inadequate to test the theory.

Defamation suit settled. West Publishing Company has agreed to settle a lawsuit under undisclosed terms and has issued a retraction and apology to Elie A. Shneour, Ph.D., Director of Biosystems Research Institute, San Diego, California. The retraction states that Dr. Shneour's book *The Malnourished Mind* had been inadvertently placed in a list of "not recommended" books in the third (1984) edition of *Understanding Nutrition*, by Eleanor Whitney, Ph.D., R.D. According to Dr. Shneour, the suit was filed because West had refused to correct the error when he pointed it out to them. The current (1987) edition of the *Understanding Nutrition* does not contain a nonrecommended book list.

Psychic health foods? Uri Geller has announced plans to market "health cosmetics" under the name Uri with a big ad in the *National Enquirer*. In the April *Whole Life Times*, he said that no claims would be made for these products, but they would have something "quite secret." Geller also plans to market health products, health foods, and perfumes with crystals to "energize" them. During the interview, Geller claimed he has turned lead into gold (a "very, very small" amount), destroyed cancer cells in laboratory flasks, and exerted "a tiny molecular influence" at the 1987 Geneva Peace talks. Geller became famous by claiming to use psychic powers to bend spoons, start watches, and read the contents of sealed envelopes. His claims to have psychic ability were thoroughly discredited by James Randi who duplicated Geller's feats and explained how they were done in *The Truth About Uri Geller* (Prometheus Books, 1982).

Kentucky blasts unaccredited degrees. It is now a misdemeanor in Kentucky for any "unlicensed health care practitioner" to use an academic title or represent in any other manner that he or she possesses an academic degree unless the practitioner actually has a degree accredited by an agency recognized by the U.S. Department of Education or the Council on Postsecondary Accreditation. The new law defines "unlicensed health care practitioner" as "any person who, for compensation or with expectation of compensation, offers or undertakes to provide advice, counseling, diagnosis, treatment, therapy, correction, or rehabilitation relating to: 1) physical or mental health in general; 2) particular ailments, diseases, injuries, infirmities, disorders or disabilities, or their prevention; 3) nutrition diet, weight control, fitness or smoking; or 4) aging, baldness, or sexual performance."

DR. ROBERT MENDELSON DIES

Robert S. Mendelsohn, M.D., a leading critic of scientific health and nutrition care, died April 5, 1988, at the age of 61. Although he had taught at several medical schools and had been chairman of the Illinois state licensing board, Mendelsohn considered himself a "medical heretic." His criticisms were invariably harsh and destructive. He opposed licensing of nutritionists as well as water fluoridation, immunization, and screening examinations to detect breast cancer. His opposition to whooping cough vaccination, widely publicized through Phil Donahue's TV program, probably persuaded thousands of parents not to vaccinate their children against this disease.

Mendelsohn's book *Confessions of A Medical Heretic* charged that "Modern Medicine's treatments for disease are seldom effective, and they're often more dangerous than the diseases they're designed to treat"; that "around 90% of surgery is a waste of time, energy, money and life"; and that most hospitals are so loosely run that "murder is even a clear and present danger. His other books were *Male Practice: How Doctors Manipulate Women* and *How to Raise A Healthy Child in Spite of Your Doctor*.

From 1981 to 1982, Mendelsohn was president of the National Health Federation, the militant lobbying arm of the health food industry. He spoke frequently at NHF conventions and produced a newsletter and a syndicated newspaper column, both called *The People's Doctor*.

Mendelsohn was also president of the New Medical Foundation, a tax-exempt organization formed in the late 1970s to support "innovative forms of medical

education of the public and the medical profession." At a meeting sponsored by this group in 1984, he said, "Doctors complain that quacks keep patients away from orthodox medicine. I cheer! Since all the treatments, both orthodox and alternative, for cancer, coronary heart disease, hypertension, stroke, and arthritis, are equally unproven, why would a sane person choose treatment that can kill the patient?"

During the past two years, Mendelsohn appeared in ads by Naturally Vitamin Supplements of Scottsdale, Arizona, advocating daily use of Bio-Strath, a product described as an herb and yeast mixture containing "10 B-vitamins, 19 minerals, 18 amino acids and important active enzymes." [There are only eight B-vitamins.] According to Mendelsohn, Biostrath "can help people who experience daily tiredness, fatigue and difficult concentration . . . may stimulate the immune system. And may actually help us to assimilate more natural fuel from the foods we eat." Such claims are illegal in advertising and labeling.

In 1986, the National Nutritional Foods Association (an association of health food manufacturers, distributors and retailers) gave Mendelsohn its annual Rachel Carson Memorial Award for his "concerns for the protection of the American consumer and health freedoms." During the past year, he was honorary chairman of NNFA's membership drive.

Vera Chatz, who helped Mendelsohn produce his newspaper columns, has announced that the *The People's Doctor* newsletter will continue publication as *The Doctor's People*.

BIOTECH TO BRING FOOD WONDERS?

Manfred Kroger, Ph.D.

Plump, tasty tomatoes all year long, increased supplies of scarce natural flavors and colors, breads that remain fresh indefinitely, and cheeses that "age" in days instead of months . . . All of these and much more lie within the vision—and possibly eventual reach—of food biotechnologists. But while the new knowledge can improve the quality and quantity of foods and save food dollars, the changes aren't likely to be obvious soon, according to the Institute of Food Technologists (IFT), the 23,000-member professional society of food scientists.

"With few exceptions, most short-term results of modern biotechnology applied to food production will be invisible to the consumer's eye," the IFT Expert Panel on Food Safety and Nutrition has pointed out. "However, indirect effects on existing products, such as cost savings and product improvement, will be far-reaching," the IFT panel says in its new 14-page scientific status summary on food biotechnology. The report's principal authors were Bruce P. Wasserman, Ph.D., and Thomas J. Montville, Ph.D., of Rutgers University and Edward L. Korwek, Ph.D., J.D., of Hogan and Hartson, Washington, D.C.

The term "biotechnology" embraces a number of techniques. Biotechnologists know how to transfer genes from one organism to another. For some applications, they can "program" microbes and plant cells to produce large amounts of now-scarce natural products such as food colors and flavors. These scientists can "custom-make" an antibody and target it to a tiny portion of a protein to change its properties.

The properties of all living things, plant or animal, are determined by their genes. In foods, these properties include form, texture, color, taste, nutrient value and resistance to environmental stresses that can ruin or spoil them.

Changing the genes of plants to resist stress can substantially increase the world food supply, a large fraction of which is lost to pests or spoilage, especially in less developed nations.

Genes are made up of strings of relatively simple compounds (nucleotides) linked in intertwined helical chains hundreds or thousands of units long, called DNA (deoxyribonucleic acid). The sequence of nucleotides in DNA provides a blueprint for arranging amino acids to reproduce proteins. During the last 20 years, biotechnologists have discovered how to chemically snip out specific nucleotides and replace them with others in the DNA chain, thus changing the associated protein and its function.

The IFT scientists believe new biotech techniques will be adapted to processes in the dairy, baking, brewing and enzyme industries. In cheesemaking, for example, the enzyme rennin is used to convert milk into cheese. Rennin used to be obtained from calves' stomachs. Calf rennin makes superior cheese but is scarce. Now food biotechnologists can produce rennin from yeast by cloning the gene for calf stomach rennin and transferring it to yeast.

Enzymes also play an important role in food processing and in the way foods spoil. The IFT scientists point out that "protein engineering" has recently come into use as a technology for improving the way enzymes work. For example, allowing them to operate at higher temperatures would greatly increase the efficiency of many enzyme-catalyzed reactions. Understanding how to regulate enzymes at the genetic level could lead to the development of fruits and vegetables that ripen more slowly and thus have a longer shelf life.

Another important area where biotechnology will be used is detection of food poisoning. Monoclonal antibodies are already being used to speed up detection of salmonella bacteria from four days to one or two.

Biotechnology is a fast-evolving field. As IFT points out: "In some instances, the needed breakthroughs will come rapidly. In others, they may never come. One turn of events is predictable, however. As more new products are developed, the emphasis will shift from the technical to the legal arena. Clear and rational policies are needed on the regulatory status of bioengineered products."

Dr. Kroger is professor of food science at The Pennsylvania State University. Single copies of the IFT scientific status summary on food biotechnology can be obtained for \$1.00 from the Institute of Food Technologists, 221 N. LaSalle St., Chicago, IL 60601.

CORRECTION

"Advice in Health Food Stores" in our January 1988 issue was followed with a note that the Allentown Morning Call had purchased an article from the author but not published it for legal reasons. We have subsequently learned that this is incorrect. We regret the error.—Stephen Barrett, M.D.

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SPORTS NUTRITION BASICS

Kathy King Helm, R.D.

Brian liked sports but didn't go out for a team because he couldn't keep up. Although he was tall and big for a 14-year-old, his looks were deceiving. His body was 26% fat, and he didn't have the strength or stamina to compete. He needed a nutrition-and-exercise program to lower his body fat level and improve his fitness.

Jennifer loved ballet—which required her to remain slender—but she also loved to eat. She lived in continuous conflict about her diet. When her weight rose after several days of thoughtless eating and heavy snacking, she would lower it by skipping breakfast, lunching on Coke and potato chips, and eating small portions at dinner. Bingeing and half-starving abused both her body and her mind. She needed education in sports nutrition.

Years ago a basketball coach changed his team's pre-game meal from steak to complex carbohydrate foods. He explained why, but the players really grumbled when it was served. Fearing they might blame the meal in case of a loss, the coach thought quickly. Right before the game, he said, "I know some of you are unhappy about the pre-game meal. So if anyone feels too weak to play, just let me know and you can sit this one out." No one complained again and fortunately, they won.

Although the basic guidelines for sports nutrition are clear to experts, fitting them to each athlete's or potential athlete's physical needs as well as to training and competitive schedules can be a challenge. Practice sessions often take place during family mealtimes, so an athlete's meals may be delayed, cold or caught-on-the-run. Most athletes have heard that complex carbohydrates are important, but many don't know how to use this information in a practical way. For example, they may realize that spaghetti, ice cream and orange juice contain carbohydrates, but may not be aware that fruits, vegetables and whole grain breads contain them too.

Many young athletes watch what the winners eat. Often they are influenced by others' food and bev-

erage choices or what the coach suggests—for better or worse. A coach or trainer who has a good grasp of sports nutrition may improve an athlete's eating habits when the parents can't.

General guidelines

Optimal endurance sports performance is strongly influenced by the availability of both carbohydrates and fats. Nutrition plays a central role in the storage and utilization of these fuels.

The ideal diet for an athlete should be high in carbohydrates (55% of calories), low in fat (30%), and moderate in protein (15%). This ratio is achieved not only by eating fruits, vegetables, grains and starches, but also by not eating large amounts of fattier meats, fried foods, and foods with added fat.

Glucose is the major fuel used during early minutes of exercise until fats can be metabolized for fuel. Glucose is stored in the liver and muscles in the form of glycogen, which consists of branched chains of glucose molecules.

The figures below show why carbohydrates are important in an athlete's diet. In this classic study, an athlete was fed a different diet each day for three days and then asked to ride a bicycle ergometer until totally exhausted. The times to exhaustion were:

High-carbohydrate diet	167 minutes
Normal mixed diet	114 minutes
Fat and protein diet	57 minutes

When a high-carbohydrate diet was compared to a normal diet and a high-fat diet, the carbohydrate diet produced a larger amount of stored glycogen in the exercising muscle and thus resulted in far more physical endurance [*Acta Physiologica Scandinavia* 71:140, 1967].

Sprint runners, swimmers and others who must exert near maximal muscle force for less than two min-

utes obtain nearly all of their energy from muscle glycogen. Fats must have oxygen available to be broken down for energy. In these events the flow of oxygen to the working muscles doesn't meet the demands for oxygen-dependent metabolism; therefore calories must be derived from the anaerobic breakdown of glycogen, which doesn't require oxygen.

Endurance training can increase the oxygen supply to working muscles and enhance the tissue's capacity to conduct oxygen-dependent metabolism. Consequently, the endurance-trained muscle is better able to burn fats for calories and thereby spare the use of glycogen. Fats provide most of calories for low- to moderate-intensity exercise (as well as "stop-and-start" sports) when oxygen is available.

Fat is stored in the body's fat cells and muscles as triglycerides, molecules that consist of glycerol and three fatty acids. Before fatty acids can be burned for calories, they must be carried to the exercising muscles and enzymes must release them from the triglyceride molecule. Since this process is slow to get started, the athlete may exercise for 30-40 minutes before the rate of mobilization of free fatty acids (FFA) equals or exceeds the rate of utilization in the exercising muscle fibers. However, small amounts of FFA contribute calories from the onset of exercise.

Proteins supply amino acids, the building blocks for muscle and other tissue growth and repair. During exercise, proteins usually provide 10% of the energy to fuel muscles, but this percentage can rise considerably when carbohydrate stores are depleted—as happens during marathon events, fasting, or severe dieting. When excessive protein is burned for calories, urea, a by-product, builds up in the body. As the body tries to excrete the urea in the urine, dehydration and loss of electrolytes and calcium may result. When more protein is consumed than the body needs, the excess is converted to fat and stored like all other excess calories.

The average athlete's diet usually contains more than adequate amounts of protein. For athletes, 1 to 1.5 grams of protein per kg of body weight is suggested. For adults, 0.8 grams of protein per kg body weight is adequate.

Young athletes may need 3,000 to 6,000 calories per day to cover their needs for sports, growth, and normal daily living. However, caloric needs of athletes can vary considerably from individual to individual. It is not

unusual to find a woman athlete who will gain weight on 2,000 calories per day. Or to find one athlete who eats 500 to 1,000 more each day than another even though both are similar in size, age, height and play the same sport. Recent reports suggest that what you eat may be more important than how much you eat and that a low-fat diet without total caloric restriction results in a loss of body fat.

Water/fluid replacement

Dehydration can debilitate an athlete quickly. A loss of only 3% of an athlete's weight due to dehydration (4.5 pounds in a 150-pound person) will affect motor movement. A loss of 10% in a short period of time could necessitate hospitalization.

Endurance athletes and others who exercise in hot climates or at high altitudes should realize that thirst isn't a reliable indicator of dehydration because it usually does not occur until after 2-4 pints of body water are lost. Athletes should drink a cup or more of water a minute or so before starting to exercise and another ½ to 1 cup every 15 minutes during exercise. (Keep in mind, however, that large amounts of water consumed 15-20 minutes before exercising can lead to a full bladder.)

To help avoid dehydration, some endurance athletes use a technique called hyperhydration or overhydration, which involves drinking 1-3 quarts of water before and/or during exercise. This added water helps maintain blood volume and body temperature. Although there may be some stomach discomfort, this possibility must be weighed against the negative effects and risks of dehydration.

Water is the best fluid to drink for events lasting less than an hour. However, athletes do use very dilute replacement beverages without apparent side effects. Cold drinks (40-50°F) leave the stomach faster than icy or warm liquids and haven't been shown to cause abdominal cramping.

Most drinks—including juices and soft drinks—contain 10% sugar because that concentration of sugar tastes best. At the recent meeting of the American College of Sports Medicine, Dave Costill, Ph.D., an exercise physiologist at Ball State University and a leading researcher on sports drinks, astounded the audience by stating that undiluted drinks can be absorbed rapidly

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during exercise. Twenty years ago he had concluded that undiluted drinks were absorbed very slowly, but these studies were done while the athletes were resting. However, his recent research, done in heavily exercising athletes, showed that undiluted drinks leave rapidly from the stomach of athletes during heavy exercise and are absorbed rapidly when they reach the intestines. Evidently, exercise jostles the stomach and facilitates its emptying.

It is seldom necessary to add electrolytes like sodium and potassium. A 2-pound water loss results in an average sodium loss of 1 gram, which can easily be replaced by salting food. (A half-teaspoon of salt contains 1 gram of sodium.) Even less potassium is lost, and it is readily available in common foods.

Alcoholic and high-caffeine beverages act as diuretics and therefore tend to deplete an athlete's body of fluids, especially if only these beverages are consumed.

Pre-game meal

Athletes usually determine what to eat before the game by trial and error. The key points are timing (so food isn't left in the stomach), comfort, and blood sugar control. Some athletes use only beverages like water, dilute fruit juice, or a blenderized drink. Others feel a good meal at least 2-4 hours before competition will give them an edge. Either approach can be successful for a given individual.

The pre-game meal can greatly influence an athlete's blood sugar level which in turn can make an athlete feel in or out of control. Complex carbohydrates are ideal for maintaining the correct blood sugar level because they are absorbed more slowly than sugar but more quickly than proteins and fats.

The guidelines most athletes agree on for pre-game meals are:

- Eat complex carbohydrates (fruits, juices, breads, cereals, pancakes, pasta, rice, potatoes, other vegetables)
- Drink plenty of fluids, but avoid sugar and carbonation
- Avoid fats and high-fat foods because they delay digestion
- Avoid large amounts of roughage (tossed salad)

and gas-forming foods (some vegetables and dried beans), which may cause discomfort

- Eat only small portions of protein foods because they delay digestion

- Don't eat less than two hours before competition begins

Two sample meals of about 500-600 calories:

8 ounces orange juice	1 cup spaghetti
1 cup cold cereal	1/2 cup spaghetti sauce
2 slices whole wheat toast	1 slice French or Italian bread
2 T. apple butter	1 peach
8 ounces 2% milk	8 ounces 2% milk

Modified carbohydrate loading

That feeling when the body can't physically continue exercising—often called "hitting the wall" by athletes—occurs when muscle glycogen is depleted. Fat may still be in ready supply, but without glycogen the athlete's body can't utilize the fat efficiently. Endurance training itself stimulates the body to store 1½ to 3 times more glycogen than that stored in an untrained person's body. This increase in muscle glycogen is a biological adaptation to cover the daily exercise. Carbohydrate-loading supersaturates an athlete's muscles with more carbohydrate fuel (in the form of glycogen) than the muscles normally store. This extra supply can benefit an endurance athlete because it provides added glucose fuel.

Dr. Costill, who is also an expert on carbohydrate loading, has found athletes can ensure very large muscle glycogen storage simply by eating a carbohydrate-rich diet (at least 50% of the calories) during the 48-72 hours before an endurance event, provided they rest during that period. Glycogen loading has little influence on events lasting less than 90 minutes but is crucial to athletes in longer events, such as marathon runs.

"Bulking up"

For some sports—notably football—athletes are asked to gain weight and strength. The added muscle power and weight can be an advantage on the playing field. To increase muscle size, and thus strength, an athlete must stimulate muscle growth by exercising against increased resistance.

Protein is the building block for the muscle tissue. However, it's estimated that in the early stage of training only 5-8 grams of additional protein are needed. One cup of milk or an ounce of meat contains that much protein. As the athlete becomes stronger and is able to do more exercise, 10 grams of extra protein should be sufficient. However, most athletes already consume more than enough protein each day to cover this added requirement.

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The recommended gain in muscle mass is about two pounds a week. For most people, this can be accomplished by eating an additional 1,000 calories per day, especially in the form of carbohydrates, which provide fuel for the added exercise and spare the protein needed for muscle growth.

Adequate rest (allow a day between exercise bouts of a muscle group) and sleep are also necessary for bulking up. They allow an athlete's body to recover from the exercise and resultant tissue breakdown, and to synthesize the added muscle tissue.

It's important to note that as young men mature, they first grow taller and then—about 12-18 months later—increase the size and strength of their muscles. Weight training with heavy weights shouldn't be started prematurely, especially in very young or very tall boys.

Staying strong while losing weight

Sports such as wrestling, rowing, boxing and karate require weigh-ins. Others such as gymnastics, figure skating and ballet encourage athletes to have slim bodies and yet be strong.

If an athlete's body is heavier than desired, it is important that the weight be lost correctly:

- Allow adequate time to lose weight. A good rate is 8-10 pounds per month. When weight is lost too

quickly, lean muscle and fat are burned for calories and strength and endurance may be lost.

- Use a percent body fat measurement, not just scale weight to determine an athlete's ideal body weight. Although experts don't agree on the exact numbers, it is usually suggested that male athletes measure 5-13% body fat and female athletes 12-22% body fat. Of course there are exceptions to all standards, but eating too little and exercising too much to become excessively lean will not improve performance.

- To lose fat but maintain muscle, an athlete should eat smaller portions of nutrient-dense food (300 or so calories fewer each day) and add 30-60 minutes of aerobic exercise to the daily routine.

Starvation diets can cause muscle loss, slower metabolic rate, tiredness, mood swings, and loss of strength and endurance. Weight loss through dehydration is even more debilitating and potentially dangerous. Athletes who eat properly while losing weight will feel like exercising and have the nourishment to do so.

Ms. Helm is a registered dietitian in private practice in Lake Dallas, Texas, and is a former board member of the American Dietetic Association.

BRIEFS

Weight loss in adolescent wrestlers. A study of 27 adolescent wrestlers found that the resting metabolic rate and resting energy expenditure of those who repeatedly lost and regained weight were lowered [JAMA 260:47-50, 1988]. The authors think that repeatedly "cutting weight" for competitive reasons can cause difficulty in weight control and other adverse effects. However, they state that further research is needed to confirm this.

Reliable information source. The Council for Agricultural Science and Technology (CAST), 137 Lynn Avenue, Ames, IA 50010, is a nonprofit educational organization representing food and agricultural science and technology. It publishes information on the scientific aspects of important issues in agriculture, food processing, nutrition, and health. It has about 5,000 members and an annual operating budget of about \$600,000. Membership costs \$20/year, which includes copies of special reports on diet and health, pesticides, food irradiation and many other subjects. Its quarterly magazine, *Science of Food and Agriculture*, costs \$5/year additional.

Videotape on carcinogens. A videotaped lecture entitled "Carcinogens, Anticarcinogens, and Risk Assessment" can be borrowed without charge from the Council on Agricultural Science and Technology. In the lecture, Bruce Ames, Ph.D., Chairman of the biochemistry department at the University of California, Berkeley, discusses: 1) how scientists learn about what causes cancer; 2) that the world is full of cancer-causing agents; 3) why life expectancy will continue to get longer; and 4) that cancer prevention will improve. The tape can be borrowed by sending your name, address and phone number to Mary K. Adams, CAST, 137 Lynn Ave., Ames, IA 50010. Copies can be purchased for \$15 from the Council for Chemical Research, One Bethlehem Plaza, Suite 911, Bethlehem, PA 18018.

Diet patches seized. After the FDA warned that "diet patches" were being illegally marketed [see NF 5:41], several companies began voluntary recalls. But San Diego-based Meditrend International did not. Consequently, in June, U.S. marshals seized patches and related materials with a retail value of more than \$22 million from the company and two of its suppliers.

Help wanted with special cancer study. A major evaluation of questionable cancer therapies is being done by a prominent medicolegal team led by attorney Grace P. Monaco. The initial subjects for study include herbs, teas, botanicals, DMSO, laetrile, Manner metabolic therapy, Hoxsey therapy, Gerson therapy, the Greek Cancer Cure, and the methods of Virginia Livingston Wheeler, Stanislaw Burzynski, and Lawrence Burton. The research team is particularly interested in seeing medical records, insurance claims and personal observations of any patient who has been treated with any of these methods. (Patients do not have to be identified; it is sufficient to provide medical records of any standard treatment and questionable methods, if available.) Court cases and newly introduced legislation involving questionable method are also of interest. The information should be sent to Mrs. Monaco at 1901 Pennsylvania Ave., Suite 1001, Washington, DC 20006 (202-835-0367).

Recommended publication. *Current Diet Review*, written by registered dietitians, is now in its third year of publication. Each issue provides detailed evaluations of three or four diet books or other sources of nutrition information. The book reviews usually include the results of a computer analysis of the diet as well as comments on accuracy, health considerations, comprehensiveness, readability, and the author's credentials. The editor and publisher is Lisa Teresi Harris, R.D., a school nutrition specialist. Subscriptions are \$18/year from *Current Diet Review*, P.O. Box 1914, Rialto, CA 92376.

New artificial sweetener approved. On July 27 the FDA approved the marketing of acesulfame K (the K stands for potassium) in the United States in such products as powdered drinks, puddings, chewing gum and tabletop sweeteners. The substance is about 200 times sweeter than table sugar and is chemically unrelated to aspartame and saccharin. It was discovered in 1967 by researchers of the West German company, Hoechst, which is represented here by Hoechst Celanese Corporation, Somerville, New Jersey. It is already sold in 20 countries for the dry uses just approved by the FDA. In some countries it is also used in soft drinks and baked goods. Acesulfame K passes through the body unchanged. Unlike saccharin, it leaves no aftertaste. Unlike aspartame, it is not broken down by heat, and there is no population group that needs to abstain from it (as phenylketonuric patients must do with aspartame). Acesulfame K will be test-marketed under the trade name Sunette, but general marketing is not expected until next year. Hoechst plans to seek FDA approval to use it in soft drinks and baked goods.

Alcohol labeling. The Bureau of Alcohol, Tobacco and Firearms has proposed to shorten the labeling requirement for whiskey and brandy treated with wood. Currently, a label on the front of the bottle must state that these products are "colored and flavored with wood chips [or wood slabs, etc.]" The proposed message would simply read "treated with wood" and could be placed anywhere on the front or back label. The purpose of the labeling is to inform consumers that the character of the product is not entirely derived from aging in a barrel.

Alcohol and breast cancer. Researchers who conducted a thorough analysis of the scientific literature of the past two decades have concluded that women who consume 1 ounce of alcohol daily are "slightly" more likely to develop breast cancer than those who do not [JAMA 260:652-656, 1988] and that greater alcohol intakes increase the risk further. However, the researchers caution that the data do not prove that a cause-and-effect relationship exists. They also point out that any increased risk should not be considered separately from a possible protective effect of alcohol against cardiovascular disease that has been suggested by other studies. Reprints of the report are available from Thomas C. Chalmers, M.D., Harvard School of Public Health, Technology Assessment Group L-7a, 677 Huntington Ave., Boston, MA 02115.

New "food freshener". The Monsanto Company has announced an alternative to sulfites, the "freshener" of fruits and vegetables now barred by the FDA for use on most foods. The new product—Snow Fresh—is said to be ideal for use in salad bars and other applications such as peeled potatoes, sliced apples, chopped broccoli and cauliflower, sliced green peppers, and shredded lettuce, cabbage and carrots. Untreated, these products quickly turn brown and become unappetizing. With treatment, the fresh color keeps for several days. The preservation effect results from delaying the onset of oxidation and enzymatic browning. Snow Fresh is simply a blend of four widely used food additives which are GRAS (generally recognized as safe): citric acid, ascorbic acid (vitamin C), sodium acid pyrophosphate, and calcium chloride. The product, a white powder, is dissolved in tap water, 1½ to 4 ounces per gallon, to make a solution used for dipping. A salad manufacturer in St. Louis has tested the new sulfite substitute and found it very satisfactory. Monsanto has not indicated when Snow Fresh will be marketed or whether FDA would first have to give a go-ahead for the blend, which seems unnecessary since all of its components appear safe.

FTC stops diet scam. The marketers of Dream Away and Advanced Dream Away have agreed to settle FTC charges of false advertising. The pills, which contain small amounts of amino acids and cost \$19.95 for a 21-day supply, were claimed to produce weight loss during sleep and without exercising or dieting. Under a court-approved settlement, Nutri Marketing, of Scottsdale, Arizona, has agreed to put \$1.1 million into an escrow account, which the FTC can use to repay buyers of the products. The settlement agreement also names Kingsbridge Media & Marketing Inc. and Frank E. Robinson, of Van Nuys, California, and Highcliff Inc., Vista Advertising, Mel Korey and Steve Corey, of Scottsdale, any of whom can be liable if Nutri Marketing defaults on its promise to pay. Consumers who think they are eligible for refunds should write to Nancy Warder, FTC, Washington, DC 20580.

Vitamin ad blitz planned. *PR Week* has reported that the Council for Responsible Nutrition (a group representing major supplement manufacturers and distributors) plans to spend \$4 million on a "consumer PR program centered around a "why-buy-vitamin" theme. A spokesperson for one of the ad agencies involved says the focus of the campaign will be to convince "healthy people" that they can benefit from vitamins and that supplements are not strictly for people with specialized nutritional needs. According to CRN president J.B. Cordero, the first goal will be "to get users (who have stopped taking vitamins) back into the fold."

Muscle stimulators used improperly. The *FDA Enforcement Report* of March 9, 1988, has warned that prescription-only electrical muscle stimulators are being improperly used by health spas and figure salons. These devices cause muscles to contract by passing electric current through electrodes (contact pads) applied to the skin. They are properly used under medical supervision to relax muscle spasms and to re-educate muscles after a stroke. However, claims that the devices can produce weight loss, "cellulite" removal, spot reducing, bust enlargement, wrinkle removal or nonsurgical facelifts are invalid.

Magazine sabotaged. *Whole Life*, a magazine catering to "New Age" and "health food" devotees, was forced to stop publication last winter for financial reasons. According to editor/publisher Marc Medoff, trouble developed when the magazine blasted leaders of the "Airplane Game," including some of his own advertisers, for preying on New York City's "New Age" community. (The game is an illegal pyramid scheme in which people are induced to buy \$1,500 tickets on an imaginary airplane with the hope that sales to other "passengers" will advance them into "pilots" who collect \$12,000 within a few days.) Medoff says that as soon as the issue containing his exposé was distributed, organizers of the scheme stole stacks of copies from health food stores by posing as representatives of the magazine. He hopes to resume publication later this year.

BOGUS CLAIMS FOR H₂O₂ STOPPED

A U.S. Postal Service Judicial Officer has ordered Kurt W. Donsbach, founder of DRK Supplements, and his nephew, Richard Donsbach, the apparent owner since 1985, to stop representing in mail order sales that a 35% solution of hydrogen peroxide is effective against cancer and arthritis. (The hydrogen peroxide commonly used to clean wounds is a 3% solution.) The California-based company had been selling peroxide products while Kurt Donsbach promoted their use for health purposes in publications and in lectures at health fairs throughout the U.S. According to a Postal Service news release, DRK operated booths at some of these fairs and referred prospects for treatment at a Mexican hospital administered by Kurt Donsbach.

The cease and desist order, issued July 20, 1988, forbids DRK and the Donsbachs from falsely representing that: 1) hydrogen peroxide used orally or intra-

venously is effective in preventing the onset or spread of cancer or ridding the body of cancer; 2) hydrogen peroxide used topically, orally or intravenously is effective against the pain and inflammation of arthritis; and 3) food-grade (35%) hydrogen peroxide is fit for human consumption. They are also prohibited from making unsubstantiated representations that hydrogen peroxide is effective against any other condition or that any other unproven remedy is effective against cancer or arthritis.

Earlier in the case, a federal court judge had issued a temporary restraining order permitting the Postal Service to stop mail to DRK containing remittances for hydrogen peroxide sales. Without acknowledging fault, the Donsbachs then agreed to the issuance of the cease and desist order rather than contest the charges further. [For information about Kurt Donsbach's many other activities, see the October 1987 *Nutrition Forum*.]

CRACKDOWN ON FISH OILS ANNOUNCED

The FDA has notified its field organization that "there is no general recognition of the therapeutic role of omega-3 fatty acids in human nutrition and health at the present time." The notice [*Health Fraud Bulletin* #7, revised 3/25/88] also indicated that although the role of various fish oils is a subject of research, "advertising and labeling claims for omega-3 products are based on interpretation of preliminary data by commercial interests." According to an article in *The New York Times*, more than 90 companies marketed fish oil capsules during 1987.

Interest in omega-3 products began soaring in mid-1985 after *The New England Journal of Medicine* published several articles suggesting that fish oils could have a role in preventing heart disease. However, most experts believe that even if such a role exists, nobody knows what dosage is appropriate and whether supplements are safe for long-term use. Instead, experts suggest eating fish several times a week (preferably broiled, baked or poached), not only to provide omega-3 fatty acids but also to replace meats that are high in saturated fats.

In April 1987, all FDA districts were asked to identify marine lipid products and submit labels and advertising for medical and regulatory review. Claims were found for the prevention or treatment of arthritis, atherosclerosis, cancer, diabetes, eczema and psoriasis, heart disease, high blood pressure and migraine headaches, as well as for effects on the immune system, platelet aggregation, prostaglandins, blood cholesterol or triglyceride levels. After medical review, FDA officials concluded that products marketed for any of these purposes are considered "prescription drugs," since the conditions involved are unsuitable for self-diagnosis and self-treatment by laypersons.

The FDA notice was distributed with a "model regulatory letter" that had been sent on April 11, 1988, from the Dallas District Office to Shaklee Corporation president David M. Chamberlain. According to the letter, Shaklee promotional material was suggesting that Shaklee EPA Natural Marine Lipid Concentrate is useful in the prevention or treatment of atherosclerosis and the lowering of cholesterol and triglycerides. The letter asked for a reply within ten days stating that Shaklee will discontinue the marketing of this product.

The Health Fraud Bulletin said that FDA district officials should continue to collect evidence of labeling violations and to send regulatory letters to violators whose actions have been reviewed and judged illegal by the FDA's Health Fraud Staff. The agency has also asked the Federal Trade Commission to review the advertising of fish oil products.

The National Nutritional Foods Association, which represents health food industry retailers, distributors and producers, has expressed "grave concern" about the FDA's actions.

Jack Z. Yetiv, M.D., Ph.D., has reviewed the status of fish oils in the August 5, 1988 *Journal of the American Medical Association* [260:665-670]. He believes that taking fish oils under medical supervision may benefit cardiovascular health and that preliminary observations suggest a possible future role in the treatment of autoimmune diseases such as psoriasis and rheumatoid arthritis. However, he warns that therapeutic amounts of fish oil (15-30 capsules) contain enough calories to cause significant weight gain and that side effects must be considered too. He also cautions that current data are insufficient to recommend fish oil supplements to the general public and that the dosage suggested on product labels (3-6 capsules) is low and has not been tested in long-term studies.

QUESTION BOX

Q. Does the color of egg yolks or egg shells have any nutritional significance?

A. No. Egg shell color is directly related to a bird's species, breed or strain. Edible eggs may be white, brown or blue. Some individuals are willing to pay more for eggs of one shell color or another in the mistaken belief that the color indicates higher quality or better nutritional value.

Yolk color is determined by such pigments as xanthophyll, lutein and zeaxanthin. These pigments are derived from what a hen eats. Knowing this, breeders can deepen egg yolk color by feeding fresh vegetable matter (such as yellow corn) or using feeds that are rich in pigments. Free-roaming hens eat more grass and therefore produce yellower yolks than do hens raised indoors. The major pigment of egg yolk is xanthophyll, which has a deep yellow color. Extracts of marigold petals—which are rich in xanthophyll—are commonly added to chicken feed.

It is erroneous to assume that more deeply colored yolks contain more carotene, vitamin A or riboflavin. Any color these nutrients contribute is totally masked by the plant pigments. Reference tables give the riboflavin content per average hen egg as 0.144 milligram, and the vitamin A content as 250 international units. Egg color, inside or outside, is also unrelated to cholesterol content.

BOOK REVIEW

Title: *Health from God's Garden* (1986)
 Author: Maria Treben
 Publisher: Thorsons Publishers, Inc., Rochester,
 Vermont
 Price: \$10.95
 Reviewed by: Varro E. Tyler, Ph.D.

Maria Treben, the world's best-selling herbal author, has compiled 128 more pages of fairy tales for her vast audience of natural-medicine enthusiasts who value fantasy and hope more highly than facts. Her 1980 book *Gesundheit aus der Apotheke Gottes*, translated into English as *Health through God's Pharmacy*, has sold over 4 million copies in editions published in 7 languages. Her current volume appeared in English last year under the title *Health from God's Garden* and is well on the way to becoming another best seller.

Does the new book contain any significant information not present in the former? Does it discuss new scientific or clinical studies to render it a more valuable reference? Does it cover many plants not previously discussed? Are valuable new remedies suggested for the promotion of "Glowing Health and Well-Being," as the book is subtitled? Unfortunately, the answer to all these questions is "No!" The 1986 book is little more than a rearrangement of its predecessor.

Following the pattern of most herbals, Treben's first book was primarily an alphabetical consideration of the various herbs. There was, to be sure, a minor section on advice for both minor and serious illnesses, but the bulk of the book was composed of monographs about individual herbs. To see what remedies were recommended for health problems, it was necessary to refer to the index for a list. Under sleeplessness, for example, you would find chamomile, cowslip, lady's mantle, ramsoms, St. John's wort, yellow dead nettle, and Swedish Bitters.

The new volume has a much more convenient format for those who wish to self-medicate. Most of it is devoted to a listing of disease states or conditions to which the reader can quickly turn and find the remedies conveniently grouped under the appropriate heading. The monograph on insomnia now lists most of the above-cited herbs plus some additional ones, such as hawthorn and meadowsweet.

Treben does divide her suggested remedies into two sections, one for minor health problems, and the other for serious illnesses that "can only be diagnosed by a doctor." This arrangement was probably chosen for legal reasons. The same may be said for the "Publisher's Note" which admonishes the reader not to regard the information provided as a substitute for professional medical treatment. Apparently, neither the author nor

the publisher wants to be held responsible if readers are harmed by taking the book too seriously.

Unfortunately, this late-20th century rendition of a 19th century home-health book contains a great deal of really bad information. Although I recognize that some herbs have useful therapeutic properties, I also know that many are potentially harmful. Maria Treben seems totally unaware of this latter potential. Apparently oblivious to modern scientific and clinical findings, she recommends such proven carcinogens as calamus (for underweight), comfrey root (for indigestion), and coltsfoot leaf juice (for asthma). And Swedish Bitters—which she characterizes as useful against almost everything including angina pectoris to gout—is a potent laxative composed of aloe, senna and rhubarb.

Treating arthritis with horsetail or nettle tea may not cause direct harm, but substituting them for prompt, effective treatment can lead to trouble. In the same vein, applying calendula ointment to a breast lump (despite the admonition to seek professional advice) could be disastrous. Since it isn't useful, why recommend it? Willow-herb tea is still listed as a cure for diseases of the prostate even though no scientific or chemical evidence and no folkloric history (except that created by Treben herself) support any efficacy in such conditions.

Many herbal enthusiasts now recognize that the only way their field of interest can gain appropriate recognition is to place it on a scientific, factual basis and to separate it completely from magic, superstition and wishful thinking. This book does nothing to advance that cause; indeed, because the author is well known, its impending popularity will prove to be a giant step backward for herbs and herbalism. If the book stimulates any questions, don't seek answers from the author. For, as she states in the introduction, "All you need to do is to read the book—it contains everything I know!" Regarding rational use of plant drugs, that is little indeed!

Dr. Tyler, Vice President for Academic Affairs at Purdue University, is an expert in pharmacognosy (the science of medicines from natural sources) and is author of *The New Honest Herbal* (1987), published by the George F. Stickley Company, Philadelphia.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

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ORGANIC GERMANIUM: ANOTHER HEALTH FOOD STORE JUNK FOOD

James A. Lowell, Ph.D.

Fans of "Li'l Abner" may recall when one of his teeth started receiving radio signals after he got a dental filling. Well, watch out health food fans. If you start swallowing germanium, the latest cure-all nutrient, there's no telling what might happen!

Germanium is a rare greyish-white metallic element of the carbon family (Atomic No. 32). At one time (inorganic) germanium crystals were widely used to make transistors. Their popularity in electronics gradually waned as better semiconductors and integrated circuitry became available. However, germanium still plays a role in both the electronics and space industries.

During the past few years various organic (carbon-containing) germanium compounds have been promoted as "miracle drugs." Health food manufacturers, writers and publishers have jumped on the bandwagon, along with some "research" institutes, ostensibly formed to study germanium's healing effects. Germanium compounds are actually being tested in scientific laboratories as immune system stimulants and anticancer agents. But the medical claims made by germanium promoters go far beyond what researchers are likely to find.

The patriarch

The current promotion of germanium products began after publication in 1980 of the book *Miracle Cure—Organic Germanium* by Kazuhiko Asai, Ph.D. Asai, born in Japan in 1908, was trained in mining and metallurgy in Berlin during World War II. In 1945 he returned to Japan and established the Coal Research Institute. According to the biographical sketch in his book, he discovered germanium in coal and developed a process to extract it from coal gas waste liquid. In the preface, Asai attributes his connection with germanium to "a working of some supernormal inevitability," states that his germanium compound was "divinely con-

ferred," and says his continued research into the properties of germanium seemed to be commanded from some outside source that transcended his own will. Later he describes germanium as a "health-giving substance—i.e., a substance which restores a condition of health to those afflicted with disease, and which sustains a condition of health in those who are healthy."

Asai says he began studying biologic sources of germanium after realizing that the woody sections of coal contain the highest amounts. He soon concluded that plants containing high amounts—including shelf fungus, boxthorn seed, wisteria, garlic, aloe vera, ginseng, chlorella algae, and comfrey—were "without exception those valued as Chinese medicinal herbs." (Some of these, most notably chlorella and comfrey, can cause serious illness in regular users.) Asai also attributed the alleged healing power of the water at Lourdes, France, to its germanium content.

By the mid-1960s, Asai's income from the coal industry had declined and his personal funds were nearly exhausted. However, he continued to operate his coal product lab until his first germanium product was synthesized in 1967. This was bis-carboxyethyl germanium sesquioxide, $(\text{GeCH}_2\text{CH}_2\text{COOH})_2\text{O}_3$, the water-soluble "organic germanium" most commonly sold in health food stores today. Asai dubbed it "Ge-132."

Asai says he tested it on himself by curing his "severe polyrheumatism complicated by arthritis, for which doctors had given little hope of improvement." After taking "large doses" for a few weeks, he was satisfied that it was not harmful. Then he did animal experiments from which he concluded that his wonder drug could cure virtually all animals of all conditions. Furthermore, he reasoned, the product was not a medicine because no amount he gave the animals was lethal. After additional toxicity tests in animals were conducted at "an authoritative research institute," he

opened the Organic Germanium Clinic near Tokyo, where no drugs were used except germanium. In 1969 he founded the Asai Germanium Research Institute. Asai died in 1984 at the age of 76. Friends attribute his death to a bleeding ulcer which he treated with germanium rather than undergoing standard medical treatment.

Oxygen Deficiency

Asai ascribed all diseases to "deficiency of oxygen." He stated that "cancer, heart disease and mental disease each undeniably strike when oxygen deficiency within the body occurs." He theorized that organic germanium worked by providing the "missing" oxygen to the body. He said that three things are required for successful treatment: 1) the individual must have a firm belief that recovery will occur; 2) a balanced diet must be maintained to prevent "blood acidity caused by excessive intake of hydrogen ions"; and 3) excessive mental stress must be avoided. Germanium will only work, Asai wrote, if lifestyle is adjusted to balance diet and eliminate stress. The germanium will then enrich the oxygen in the body and "expel pernicious pollutants from the body or at least decompose them into harmless substances."

Asai claimed that his germanium regimen was effective against all sorts of diseases, including cancers of the lung, bladder, larynx and breast, neurosis, asthma, diabetes, hypertension, cardiac insufficiency, inflammation of the maxillary sinus, neuralgia, leukemia, softening of the brain, fibroids of the uterus, cirrhosis of the liver, and some forms of blindness. Asai also claimed his germanium could regulate cholesterol and prevent birth defects, and that in children it can cure various brain diseases and relieve earaches, toothaches, nephritis, emphysema and dozens of other conditions. Oral doses along with topical applications can even cause extensive burns to heal with "hardly any scar." Although it doesn't cure muscular atrophy and mongolism (Down's syndrome) in children, germanium inhibits their progress. Moreover, Asai says, it confers immunity against influenza and German measles.

Other promoters have claimed that germanium can stop the damage of radioactivity, produce superoxides inside the body to help prevent aging, cure AIDS, prevent children's violence and autism, decrease the sensation of pain, eradicate allergies, destroy warts and corns, remove deeply imbedded splinters, improve circulatory disorders, restore sexual function and help people with hepatitis, osteoporosis, and cataracts.

Scientific studies

Germanium dioxide was tested as a cure for anemias and as a "blood purifier" as long ago as the early 1920s but was found to be ineffective. Later it was im-

plicated in kidney failure in patients who took doses over prolonged periods of time.

Today, legitimate researchers studying germanium-containing compounds are focusing on their efficacy as antitumor agents. The most thoroughly tested germanium compound is spirogermanium. Phase I trials in 1980 showed a partial response in a patient with a lymphocytic lymphoma. Phase II trials for antitumor activity were carried out against a wide spectrum of solid tumors and malignant lymphomas. Little noteworthy antitumor activity was reported. Although some research groups are still studying the efficacy of spirogermanium, it does not appear that it will play a significant role as a chemotherapeutic agent.

Two other germanium compounds similar to the health food store variety have been studied for antitumor activity. In mice neither compound was useful against most types of tumors on which they were tested, so they are not being widely studied as potential chemotherapeutic agents for humans.

Asai's "Ge-132" has been tested against several conditions. In 1980 it was found that injections of about 100 mg/kg of body weight had antitumor effects on mice and seemed to induce interferon activity. Subsequent studies indicated that oral doses (100 mg/kg) also had antitumor effects. Last year a Japanese research group suggested that Ge-132 works by causing T cells, which are part of the immune system, to produce gamma interferon which activates macrophages to destroy tumor cells. Promoters of germanium claim it works by causing the body to produce interferon, an anti-viral and anti-tumor agent. (They even claim this makes it effective against AIDS.) However, the only type of interferon currently being tested as an anti-tumor agent in clinical trials is alpha interferon, not the gamma interferon induced by Ge-132 in mice. It remains to be seen whether germanium sesquioxide will be effective in human trials.

Much of the data pertaining to the effectiveness of germanium as a therapeutic agent contained in a 65-page report entitled *GE-132 Outline*, published by the Asai Germanium Research Institute. In addition to claiming that germanium is effective against tumors, the report summarizes studies on germanium for treating

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collagen disease, deafness, osteoporosis and a few other conditions. Since most of these studies were done in animals, their results should be considered preliminary. Additional work would be necessary to determine whether germanium has any practical use in treating these conditions.

Current manufacturers

Ge-132 is the trademarked name for germanium made under approval of the Asai Germanium Research Institute of Tokyo, Japan. Their Japanese patents have expired, but they hold current U.S. patents on the manufacturing process. After Asai's death, a group of businessmen took over the Institute. They now reserve Asai supplies for medical testing and use and have retained an attorney who specializes in government relations to apply to the U.S. Food and Drug Administration to test Asai germanium as an investigational new drug.

The other major Japanese manufacturer is Tokai Sangyo Co, Ltd., of Tokyo. According to Karl Loren, author of *The Report on Germanium, Has the Cure for Cancer and AIDS Finally Arrived?*, Sangyo manufactured about 95% of the Japanese Ge-132 formulated in 1987 and is the only current foreign supplier of "real" germanium to U.S. companies. Ads from the company state that its "100% pure" germanium is authorized by the Japanese government and that export of non-authorized organic germanium is illegal. However, some U.S. distributors claim to be obtaining it from other Japanese sources.

The major brand of germanium being marketed in the U.S. is GeOxy-132™ distributed by Global Marketing Associates, Inc., of San Francisco. According to company vice president Richard A. Merriam, GeOxy-132™ is the best possible product. Although it was originally imported, Merriam says, it is currently being manufactured domestically for Global by a New York subcontractor whose name is not public information. A Global brochure distributed to retailers calls GeOxy-132™ "the Electro-Nutrient" and states that it "optimizes life force" and that "life force wires your nerves to your brain and flows from one organ to the next in currents that are independent of the nerve paths." Global supplies GeOxy-132™ to 20 supplement companies which repackage and supply it to health food

stores. Some sell it as a single-ingredient product while others combine it with other ingredients popularized by the health food industry.

Another germanium manufacturer is Monarch Nutritional Laboratories of Ogden, Utah. According to Barry Johnson, an owner of the company and the chemist who formulates their germanium sesquioxide, their product is the highest grade, approaching 100%. He told me the company makes no other claim for the product and relies on word of mouth as a promotional tool.

A relative newcomer to the germanium manufacturing scene is Grow Company, Inc. of Hackensack, New Jersey. According to company representative Bob Koetzner, they grow a yeast (*Saccharomyces cerevisiae*) on a medium to which germanium dioxide has been added. After the yeast is harvested the cell walls are broken open and the product is freeze-dried. As a result, he says, their germanium is at least 97% bonded to yeast proteins—which, he states, makes it more of a food and more "natural" than other germanium products. He claims Grow Company's studies show that none of the common forms of germanium is toxic, but that Grow Co.'s product is better absorbed, primarily by the liver, and is retained for a longer period of time. Grow Co. sells its yeast to various distributors but prohibits blending, mixing or dilution of their products.

It also appears that at least one German manufacturer is producing germanium products for both the European and American markets.

How germanium is promoted

Misinformation about organic germanium is being spread through several sources, not the least of which is the Germanium Institute of North America (GINA). GINA's founder and executive director is Paris Kidd, Ph.D. Dr. Kidd, whose Ph.D. in zoology is from the University of California at Berkeley, described GINA as a "for-profit clearinghouse for information on germanium" whose goal is to promote safe, scientific, responsible and effective use of germanium-containing compounds.

GINA provides literature and advice to consumers and to health food retailers, manufacturers and distributors. It also assays products. Kidd told me he believes that the promotional "hype" on germanium has

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gotten out of hand. He acknowledged that germanium has not been proven to cure any human disease and said that his organization will not distribute lay articles that tout unsubstantiated claims for germanium. Nevertheless, much of the information provided by Kidd, including some in his newsletter, *Gina Speaks*, is not the sort encountered in the scientific literature. Instead, articles are written for the lay public and contain anecdotes and testimonials suggesting that germanium can help everything from AIDS to zits. Much of the information included in germanium advertisements comes from a 1986 monograph by Kidd entitled *Ge-132: Research Breakthrough from the Orient*.

Articles in health food industry publications touting germanium as a cure-all also cite the writings of Kidd and members of his Institute. For example, the August 1987 issue of *Whole Foods* extolled the miracle properties of germanium in its "Consumer Bulletin." This is a monthly page that contains a box for the retailer's business card and is intended for photocopying and distribution to customers.

Kidd himself touts germanium for chronic Epstein-Barr disease and candidiasis. These are controversial conditions that many fringe practitioners diagnose excessively in patients who suffer from general malaise or symptoms common among healthy individuals.

GINA's advisory board has included several practitioners who are not representative of mainstream science or medicine. One is Alexander Schauss, "Ph.D.," author of *Diet, Crime and Delinquency*. The book claims that normal people can be turned into criminals if they eat such foods as chocolate, eggs, corn, peas, citrus fruits, tomatoes, wheat and other small grains, cinnamon, dairy products, or artificial food colors. During lectures Schauss sometimes says, "As a physician I might tell you . . ." but he is not a medical doctor. In fact, a recent expose in the *Vancouver Sun* revealed that Schauss has been a "Ph.D. candidate" since 1981 at unaccredited California Coast University but had not completed the work needed for the degree.

GINA's lay research advisor is Betsy Russell-Manning, an advocate of dubious cancer therapies who has also written a book vilifying mercury amalgam fillings. One of the four members of the GINA's board of directors is Michael Rosenbaum, M.D., president of the Orthomolecular Medical Society, a group of physicians who believe that numerous diseases and conditions can be treated with megadoses of vitamins, minerals, and other "food supplements."

Kidd told me he recently disassociated himself from Schauss and certain other board members who he feels are not advancing the scientific study of germanium. Notable among these is Steven A. Levine, Ph.D., an Institute founder who is another prolific promoter of health food store variety germanium. Levine, who obtained his degree in genetics at the University of

California, Berkeley in 1976, is the Director of Research of Nutri-Cology, Inc., which does business as Allergy Research Group. Nutri-Cology, which is located in San Leandro, California, designs and sells "hypoallergenic" minerals, vitamin and glandular supplement products. Levine's major articles on germanium have been published in the *Journal of Orthomolecular Medicine* and the *Journal of Orthomolecular Psychology*, neither of which generally reflects the opinions of practitioners of scientific medicine. He has also presented papers on germanium to symposia sponsored by the Orthomolecular Medical Society and similar groups.

Another major germanium promoter is Karl Loren, who is associated with the Life Extension Educational Service of Glendale, California, and lectures regularly at conferences where questionable health products are promoted. Loren (whose real name is Loren Troescher) graduated from Harvard Business School in 1959. He is a minister in the Church of Scientology and, until recently, hosted a talk show on KIEV cable radio. He was fired from the show for promoting the dubious cancer therapy administered in Tijuana, Mexico, by James Keller—who is wanted by the FBI in connection with similar activities in Texas [see NF 2:36].

The competition for germanium sales among the various manufacturers is, to put it mildly, fierce. All claim their own products are extremely pure and that competitors' products may be adulterated or contaminated with toxic substances. Levine and Global have even filed suit against Loren because they objected to his implication that their products may be contaminated and of questionable origin.

Another book promoting germanium is *Germanium, A New Approach to Immunity*, by Betty Kamen, Ph.D. The book's back cover includes a testimonial from Michael Rosenbaum, M.D., president of the Orthomolecular Medical Society and board member of GINA. Kamen, whose Ph.D. in nutrition education was obtained at Columbia University, speaks at health food industry conventions and writes for several health food magazines. Her book on germanium calls oxygen "Vitamin O: the oxygen nutrient," and says it fits the definition of a vitamin because it is a substance found in food that is necessary for life but not usually manufactured by your body. This, of course, is not the proper definition of a vitamin. Kamen says that complex carbohydrates are the foods highest in oxygen, and that since we eat too few of these, we are often deficient in cellular oxygen. She also says that since water contains 85% oxygen, older people should drink more of it if they want to live longer.

Kamen calls germanium an "adaptogen," which she defines as a nontoxic, nonspecific compound that doesn't directly cure disease but enhances the body's ability to cope with any stress as needed. An adaptogen

can supposedly make low blood pressure higher, high blood pressure lower, normalize glucose levels, adjust cholesterol levels and correct acid/alkaline values.

Kamen also claims that external applications of germanium can be helpful. According to her book: ointment prepared with organic germanium "works wonders on skin rashes"; tablets placed on band-aids and applied to acupuncture points can relieve eyestrain, headaches and muscle soreness; women can relieve PMS by lining their underpants with the tablets; and supporters containing germanium may be the "prescription for tomorrow" for the relief of muscle pain and stress.

Kurt Donsbach, D.C., a health food industry leader, includes germanium in his unorthodox treatment of cancer patients at his Mexican clinic. He has also written a booklet about germanium that reiterates the claims of others.

Freedom of the press gives authors the right to make virtually any claim for any product. However, without FDA approval it is illegal for sellers to claim that germanium is effective against any disease. The claims by germanium manufacturers vary considerably. Whereas some make explicit therapeutic claims, others focus on purity and depend upon outside sources to make the therapeutic claims.

Natrol, a California firm that markets Germax germanium tablets, advertises that "Between six and ten million Japanese citizens use Organic Germanium. THEY CAN'T ALL BE WRONG. Twenty-seven Japanese hospitals, clinics and universities are currently researching Organic Germanium. Studies already conducted show an amazing versatility: 1) reduces chronic arthritis; 2) restores sexual function; 3) heals burns without scarring; 4) improves circulatory disorders; 5) oxygenates cells; 6) stimulates energy level."

Futurebiotics, of Brattleboro, Vermont, has advertised that germanium strengthens immune protection, restores and improves energy, promotes interferon production, fights "blues" and "blahs," and enhances total well-being. Its most notable such ad appeared in the July 21, 1987 issue of the tabloid newspaper *Globe*, which also contained an article headlined "Miracle health pill banishes pain and combats all ills." The ad contained a coupon offering a \$1 per bottle discount on Futurebiotics germanium products at any health food store. A few weeks before the ad appeared, the company contacted retailers by mail and telephone to suggest that they stock up.

Recently I purchased a bottle of Ultra Plan Germanium Immune Complex tablets, "certified natural" by Hi Health, the Scottsdale, Arizona health food chain for which they were "exclusively formulated." These contain GeOxy-132™. The label recommends "one tablet a day as a food supplement." Although the label makes no claims, the product's name suggests that it helps the

immune system, and literature I picked up at a Hi Health store reiterated many of Asai's claims. The pills also contain vitamins A, E and C, and selenium in a base of garlic, watercress and ginseng. Garlic and ginseng are herbs identified by Asai as high in natural organic germanium.

The Vitamin Shoppe, a New Jersey-based mail-order discount house that carries Nutri-Cology products, states in its current catalogue that, "Reports from the medical community indicate that germanium . . . has broad clinical applications . . . and appears to promote immune function by the dose-dependent stimulation of gamma interferon. It is non-toxic, and, individuals are encouraged to experiment with dosages in order to determine their own optimal protocol."

The most subtle promotion I have seen is in GNC's mail-order catalogue, which merely suggests that you may not be getting enough in your diet: "You've read about it . . . now germanium is available to you from General Nutrition . . . It is found very sparingly in the foods we eat. Order your germanium today!"

Profit potential

Currently, large quantities (e.g., 100 kg) wholesale for as little as \$2/gram, down about half since a year ago. Smaller quantities run about \$4/gram. The retail prices of tablets, which contain 5, 10, 25, 100 or 150mg, vary considerably from company to company. Most sell in the range of \$15 to \$66 per gram, but Nutri-Cology sells "sublingual tabs" containing 25 mg of pure germanium for \$10.25 each, which is \$410/gram.

One sublingual tablet per month would not be particularly expensive, but suggested dosages vary. The lowest recommended dose I have found is 10 mg a day for Ultra Plan Germanium. But, as Loren points out, small doses are not in keeping with Asai's (or other major promoters') recommendations. In fact, Asai regularly recommended 100 to 500 mg/day for many conditions. Moreover, clinical trials of efficacy for some conditions require doses of 30 mg/kg body weight per day. A 70-kg (154-pound) adult undergoing such a treatment would require 2.1 grams of germanium a day. Even using Nutri-Cology's 1-gram powders at \$5.75 each, treatment would cost over \$12 a day for an indefinite period of time for a regimen previously tested only in mice.

I doubt whether most health food faddists would spend this kind of money on "food supplements" recommended at a health food store or by an ad. However, some who consult "orthomolecular" doctors might be more willing to follow their advice to take large quantities of germanium.

FDA action

On June 28, 1988, the FDA determined the germanium products from Japan were entering the United

States illegally and issued an Import Alert stating that they were unapproved food additives and "new drugs" for which no new drug application had been filed. Specific products mentioned were Germanium Sesquioxide, Organic Germanium, Ge-132 and GeOxy-132. The notice pointed out that these products were being "repacked as health foods or as over-the-counter drugs with claims for use in severe medical conditions such as AIDS and cancer." The notice also referred to literature that "promotes germanium products for use in treating or preventing serious disease conditions under the following names: Germanium, Organic germanium sesquioxide, Pro-Oxygen, Immune Multiple, GeOxy-132, Vitamin O, Nutrigel 132, and Germax."

According to the FDA Alert, germanium products will no longer be allowed into the United States

unless they are genuinely intended for use in the semiconductor industry. It remains to be seen whether the FDA will stop the illegal marketing of organic germanium products produced within the United States.

Curiously, if scientific tests ever prove germanium useful for treating a human disease, germanium products would probably become prescription drugs that the health food industry could not legally sell to the public.

Dr. Lowell, who has graduate degrees in botany and genetics, is Professor of Life Sciences at Pima Community College in Tucson, Arizona, and is vice-president of the National Council Against Health Fraud. His recently revised book, *Health Hoaxes and Hazards*, is available for \$13.50 from the Nutrition Information Center, 255 N. Granada, #2058, Tucson, AZ 85701.

BRIEFS

Victor Herbert honored. The American Dietetic Association has awarded honorary membership to Victor Herbert, M.D., J.D., for "outstanding contributions to nutrition research" and "tireless and selfless dedication to stopping the proliferation of nutrition fraud."

Bogus nutritionist fined. Gary Pace has agreed to pay \$12,000 in penalties and costs and \$20,000 in restitution to settle charges brought by New York State Attorney General Robert Abrams that he had induced hundreds of clients to pay for "improper physical examinations, worthless laboratory tests, bogus nutrition advice, and unnecessary vitamin, mineral and herbal supplements." Pace had represented himself as a doctor, based on a "Ph.D. degree" in nutrition from Donsbach University, an unaccredited correspondence school [see NF 2:70-71, 4:24]. In December 1985, a state court permanently enjoined Pace from doing further "nutritional counseling" unless he obtained proper credentials or posted a \$150,000 bond.

Public concern about food safety. The Food Marketing Institute's sixth annual survey of consumer attitudes involved interviews with 1,019 shoppers. When asked what factors were "very important" when shopping for foods, they listed taste (88%), safety (83%), nutrition (72%), price (65%), storability (51%), and ease of preparation (39%). However, many of the safety concerns were unjustified: 75% of those interviewed considered pesticides and antibiotics to be "serious hazards," 61% felt that way about antibiotics and hormones in poultry and livestock, and 43% felt that way about irradiated foods.

Notable quote. When syndicated columnist Ann Landers was asked whether a new "diet pill" could cause people to lose fat while they sleep, she replied, "If it worked, you would be reading about it in the headlines of every newspaper in the country."

Coolers blasted. An article in the Center for Science in the Public Interest's August 1988 *Nutrition Action Healthletter* has charged that coolers are a threat to children and adolescents and will add to the nationwide problem of alcohol abuse. Although coolers average 6% alcohol by volume (beer averages 4% and most table wines range from 10% to 14%), their alcohol content is deemphasized in marketing. The marketing of coolers conveys a "healthful" image with added sex appeal. They are packaged to resemble sodas or juices, may not have an alcohol taste, are inexpensive, and in many states are sold in groceries and general merchandise stores where youngsters can obtain them easily. The article suggests: 1) coolers should be sold only with other alcoholic beverages; 2) the federal government should help schools mount educational campaigns to warn young people that coolers contain more alcohol than beer and most table wines; 3) cooler labels should clearly indicate that they are alcoholic beverages and should not be sold to anyone under age 21; 4) alcohol content in coolers should be limited to 2-3%; 5) warnings about alcohol abuse and information about calorie, ingredient and alcohol content should be required on all the labels of *all* alcoholic beverages, not just coolers; 6) excise taxes on alcoholic beverages should be raised; and 7) the media should be required to give equal time and space for health messages to balance alcohol ads.

Beech-Nut officers sentenced. Niels J. Hoyvald, former president and chief executive, and John F. Lavery, vice president of manufacturing of Beech-Nut Nutrition Corp., have each been sentenced to a year and a day in jail and fined \$100,000 for their roles marketing a beverage falsely labeled "apple juice." So far the company has been assessed nearly \$10 million in federal and state fines for making the imitation mixture, labeling it as pure apple juice, and selling it in 19 states and several foreign countries between 1978 and 1983 [see NF 3:91]. The \$2 million federal fine is by far the largest ever paid under the Food, Drug, and Cosmetic Act. Additional charges against the company are pending.

Licensing update. Since 1982, laws to regulate nutritionists have been passed in 21 states, Puerto Rico and the District of Columbia. Some make it illegal for unqualified persons to call themselves dietitians and/or nutritionists, while others define nutrition practice and who is eligible to do it.

Chiropractors and supplements. Seventy-four percent of chiropractors who responded to a survey by *Dynamic Chiropractic* (a newspaper sent free to all chiropractors) reported using nutritional supplements in their practice. The survey was conducted by inviting readers to complete a questionnaire printed in the newspaper. The editor reported that "6% of the 41,000+ DCs in the USA" had responded.

Egg caution. Scientists from the U.S. Centers for Disease Control have reported outbreaks of Salmonella food poisoning traced to the use of Grade A eggs or foods containing them. After sampling eggs from four egg-producing areas of the country, they found contamination in eggs produced in the Northeast. The U.S. Department of Agriculture is now investigating whether the eggs are contaminated before or after laying. In the April 8, 1988 *Journal of the American Medical Association*, the CDC scientists caution consumers to avoid raw or lightly cooked eggs and products made from them, such as Caesar salad, hollandaise sauce, and homemade ice cream. To be on the safe side, eggs should be boiled for seven minutes, poached for five, or fried for three on each side, until the yolk is not runny and the white is firm. Symptoms of Salmonella poisoning include abdominal cramps, diarrhea, fever, and sometimes nausea and vomiting. The symptoms which usually begin 5-72 hours after eating contaminated food and last from 24 hours to several days. There is greater risk of serious or even death in infants, the elderly, and the chronically ill.

Revici placed on probation. New York State authorities have revoked the medical license of 92-year-old Emanuel Revici, M.D., a physician who has claimed to be able to treat cancer and AIDS with "nutritional" methods. However, the revocation was stayed and Revici was placed on five years' probation on condition that he shall not treat patients for cancer unless: 1) the diagnosis was made by a physician unaffiliated with Revici; 2) before signing a consent form, the patients are urged to consult a board-certified cancer specialist and a psychiatrist or psychologist; 3) patients are informed that Revici's treatment approach is not sanctioned by the medical mainstream; and 4) patient records are available for inspection by employees of the New York State Department of Health's Office of Professional Medical Conduct. Revici is also forbidden to dissuade any patient from seeking other treatment elsewhere or using any treatment that is illegal.

Recipes modified. The Iowa Affiliate of the American Heart Association has published *The Healthy Holiday Cookbook*, a 127-page "collection of traditional holiday recipes modified to reduce the sodium, fat and sugar in our festive diets." The book briefly discusses dietary guidelines and contains 70 recipes with information on their carbohydrate, fat, protein, sodium and caloric content, and diabetic exchanges. Copies are available for \$7 from the American Heart Association, Iowa Affiliate, 1111 Office Park Road, West Des Moines, IA 50265.

Garlic/black seed product seized. On June 29, 1988, the FDA filed a seizure action charging that Conigar capsules, sold by Wellness Products, Inc., of Lewisville, Texas, were misbranded by claims of effectiveness against cancer and AIDS. Ads for Conigar had depicted newspaper articles with such headlines as "Eating Garlic May Save Your Life," "Scientist Finds Basis for Folklore's Claim that Garlic Can Prevent Cancer," "Garlic Can Fight Cancer," and "Use of black seed in fight against cancer, AIDS probed." The ads also contained an endorsement by A. Elkadi, M.D., medical director of the Akbar Clinic, Panama City, Florida, and pictured a Conigar bottle labeled "Clinically Approved by the Akbar Clinic." The advertised price was \$28.50 for 200 capsules—a month's supply. [According to *Third Opinion*, a recently published directory of "alternative therapy centers," the Akbar Clinic offers "a unique, comprehensive nontoxic metabolic therapy program designed to enhance or restore the body's immune system." The program is said to include "nutritional adjustment; nutritional supplementation with certain vitamins, minerals and enzymes; several natural immune enhancers; acupuncture; hyperpyrexia (fever therapy); bio-feedback; counselling; exercise; and focus on chronic infections."]

DEMAND GROWS FOR ANASAZI BEANS

Stephen M. Voynick

The Anasazi bean, a "heritage" variety of the common bean *Phaseolus vulgaris*, is carving a modest but growing niche in the dried bean market traditionally dominated by pinto, kidney, black and white beans. The reasons Anasazi beans are becoming increasingly popular are that they taste sweeter, take much less time to cook, and may not cause flatulence, the common problem associated with other dried beans.

Anasazi beans are as versatile in the kitchen as are the more familiar types and are only slightly more expensive. They are the size and shape of pinto beans, but have a distinctive, mottled purple-white coloration. The mottling of the skin is due to an anthocyanin pigment.

Beans are actually the seeds of certain legumes. Because of ease of cultivation and storage, low cost, acceptable taste, high nutritional value and cooking versatility, dried beans have been dietary staples since antiquity. Dried beans are high in protein and complex carbohydrates and contain little sodium or saturated fat. They are good sources of iron, thiamin, riboflavin, niacin, potassium, phosphorus and fiber.

AmerIndian cultures of Mexico have grown common bean varieties for at least 5,000 years. The Anasazi Indians of the American Southwest began cultivating the variety now named for them about 130 A.D. Cultivation continued until the Anasazis mysteriously vanished about 1200 A.D. Anthropologists believe the bean contributed to the longevity of the Anasazi culture.

The bean survived in the wild in the Four Corners region and was finally "rediscovered" near Indian ruins by white homesteaders in about 1900. In 1956, botanists excavated and identified the bean in numerous ruins of Mesa Verde National Park near Durango, Colorado. Believing the beans might have commercial potential, entrepreneurs Ernie Waller and Bruce Riddell founded the Adobe Milling Company, Inc., in Dove Creek, Colorado, in 1983. After collecting seed beans from Indian ruins and the gardens of long-time local residents, they planted the first commercial crop.

First-year sales totaled only 846 pounds, mostly to local or regional customers; lesser amounts were purchased by tourists as novelty or gift items. In 1985, as annual sales jumped to 37,000 pounds, mail from consumers revealed what may become a major selling point: Anasazis seem to produce relatively little "gas" when eaten.

Anasazi beans share the general nutritional composition of pinto and other dried beans, which, when

raw and dried, contain approximately 22% protein, 64% carbohydrate, 1% fat, and 11% moisture, with the remaining 2% composed of ash, fiber and minerals. However, significant differences have been found in their carbohydrate makeup. Anasazis contain about 30% more sucrose, fructose and glucose than do pintos, which accounts for their sweeter taste.

More important, the amounts of raffinose, stachyose and verbascose in Anasazi beans are only about 20% of those found in pinto beans. Joseph A. Maga, Ph.D., Director of the Food Research and Development Center at Colorado State University's Department of Food Science and Human Nutrition, notes that these sugars are the main causes of flatulence from dried beans. He emphasizes that their presence in Anasazi beans would still cause distress in some individuals and that the minimum level required to cause distress in the general population is not known. Nevertheless, he believes that Anasazis should generally cause less "gas" than pintos.

In 1987, Waller and Riddell trademarked the name "Anasazi beans" and sales reached 350,000 pounds. Thanks mainly to word-of-mouth promotion by satisfied consumers, 1988 sales are projected to exceed 1 million pounds. While the sharp increase is impressive, the current level hardly compares with that of the better-known dried beans. Americans annually consume about 500 million pounds of pinto beans alone.

The Adobe Milling Company, the only commercial source of Anasazi beans, now has 500 acres under cultivation near Dove Creek, Colorado. The high elevation (7,000 feet) and semi-arid climate (12-inch annual rainfall) allow the beans to be produced without chemical protection—which means they can be grown "organically." Yet few Anasazi beans are sold through "health" or "natural" food outlets. Most are sold through a limited retailer network in the Southwest or by mail order with United Parcel Service delivery to 44 states. (A 10-pound bag of Anasazis costs \$6.00 plus \$3.00 to \$6.50 for shipping and handling.) Recently, several western supermarket chains have begun stocking the beans.

Additional information can be obtained from Adobe Milling Company, P.O. Box 596, Dove Creek, Colorado 81324.

Mr. Voynick, a freelance writer who resides in Leadville, Colorado, majored in food technology at Rutgers University.

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THE MANNER SEMINAR

Jeff South

Several months ago, Harold W. Manner, Ph.D., a former biology professor who directed a laetrile clinic in Tijuana, Mexico, was still recruiting patients desperate for cure and "alternative" health practitioners hungry for profits. On June 25-26, Manner spoke in Irving, Texas, hoping to expand his network of "qualified metabolic physicians," which he said included nearly 600 practitioners in the U.S. and several foreign countries. At a hotel near the Dallas-Fort Worth International Airport, the 63-year-old Manner touted his "break-throughs" both in treating diseases and in billing insurers. About 30 people attended the seminar, most of them chiropractors and naturopaths, from as far away as North Carolina and Oregon.

The seminar resembled a medicine show, with a bit of a pop-psychology thrown in. At one point the Manner Clinic psychologist dimmed the lights, played "When You Wish Upon A Star," and said that positive thinking is crucial to curing cancer. But a recurring theme was money. The clinic was making lots of it, and those attending the seminar were invited to share in this windfall. The silver-haired Manner, who resembled actor Jason Robards, promised them a \$200 "consulting fee" for each patient they referred to his clinic. That's just the beginning, he said, of an arrangement that "can substantially increase your annual income."

From the start, Manner admitted his treatment program was unconventional. He called it "metabolic therapy," which he defined as the use of natural food products and vitamins to prevent and treat disease by building a strong immune system.

Manner's background

Manner was born in 1925 in New York and grew up in rural New Jersey. He received his bachelor's degree in science from John Carroll University in 1949, a master of science degree from Northwestern in 1950, and a doctorate in biology from Northwestern in 1952. He taught biology at Utica College of Syracuse University, serving as chairman of the division of science and

mathematics from 1963 to 1969, and then chaired the biology department at St. Louis University until 1972. From 1972 to 1978, Manner was chairman of the biology department at Loyola University in Chicago. He continued to teach biology there until 1982, when he resigned under pressure from the school for his unconventional theories.

Manner established the Metabolic Research Foundation in Glenview, Illinois, in 1979, with himself as president, but later moved it to San Ysidro, California, across the border from Tijuana. He used to conduct four seminars a year, but now holds only two. Before teaming up with the Tijuana clinic, he operated another facility, the Emerald Isle Clinic, in Montserrat, West Indies.

"It is not a copper bracelet," Manner said of his treatment program. "It is good, solid science . . . I am an orthodox scientist. I use the scientific method." But on "God Still Loves Me," one of his instructional tapes, Manner says his theories are the product of divine inspiration. He said he would lie in bed at night pondering the problems of cancer and other diseases. "That beautiful Father in heaven would give me the answer. We'd try it, and it would work. Every part of our therapy comes from God's teachings." Even the use of laetrile is suggested in the Bible, Manner said.

On the tape, he calls himself a born-again Christian. Newspapers have quoted him saying he found religion in 1968 after years as an agnostic. He says his parents were Sunday school teachers and that evangelist Jimmy Swaggart converted him. He also says that fellow professors ridiculed him for carrying a Bible, preaching the gospel and other religious practices: "My fellow faculty members used to laugh at me because before examinations, I would pray with my students."

Manner's enterprises

The clinic and the Metabolic Research Foundation have been as enterprising in their financial affairs as in their pseudomedical procedures. The clinic rakes

in about \$1.5 million a year from insurance claims and an undisclosed amount in direct payments from patients, according to Manner's consultants. Additional income comes from book and vitamin sales and seminar and membership fees.

The Texas workshop cost \$200 in advance or \$250 at the door. Concessionaires offered cookbooks (Manner preaches the importance of diet); books on various cancer therapies, including *The Death of Cancer* and several others written by Manner; and tables of vitamins, mineral orotates, enzymes and other concoctions retailed by Manner Metabolic Products Inc. for as much as \$192.50 per bottle.

A flyer for the seminar promised instruction on how to recoup the cost of the seminar tenfold by becoming a "paid consultant" to the Manner Clinic. The participants received three tapes on Manner's treatment methods and religious beliefs. They also received several newsletters, brochures, and even a certificate that they had "successfully completed the Advanced Course in Metabolic Therapy," which Manner said might be useful in claiming educational credits. During the workshop and in subsequent mailings, participants were urged to order additional items, including audiotapes of the sessions (\$50) and a videocassette of the Foundation's 1987 meeting in Pennsylvania (\$23).

The bulk of the Manner organization's income comes from the Tijuana clinic, which can house up to 44 patients at a time. Manner's Metabolic Research Foundation became affiliated with the facility in 1982, when it was called the Cydel Clinic, according to its owner, Sergio del Rio. By offering Manner's therapies, "we began to see improvements in our patients which in many cases bordered on the miraculous," del Rio said. But he became worried after Manner "expressed concern that once he left us through retirement or death, everything he had worked for would be lost and forgotten." Vowing that "this would never happen," Cydel officials provided a laboratory for Manner; and on June 1, 1984, the Cydel Clinic was renamed in his honor. "In this way, patients far into the future will know that there is a Manner Clinic where the Manner therapies are practiced," del Rio said in a statement circulated at the seminar.

The clinic brochure calls the Manner Clinic the "World leader in disease prevention" and promises treatment based on "the latest scientific and medical information." Clinic employees meet patients at the San Diego airport and take them in a white van across the border into Mexico. Patients do not need passports, but are asked to bring their medical records.

The cancer, arthritis and multiple sclerosis programs each last 21 days. The cancer program costs \$7,500; the arthritis program, \$5,500; and the multiple sclerosis program, \$7,250. In addition, the clinic offers a 7-day "prevention program" for \$1,600 and a 7-day "cellular therapy" program in which the cells from unborn

or very young sheep are injected into patients to "reverse the aging process." The cellular therapy program costs \$3,500 if used alone, \$1,300 if taken simultaneously with another program, or \$2,750 to former clinic patients who return for it.

"While the U.S. health care delivery costs have been rising rapidly, our charges at the Manner Clinic have never risen over \$7,500 for the complete 21-day program including room and board," Manner said. He said the clinic has served about 4,000 patients and operates at capacity, with about a 2-week waiting list.

The clinic asks that payment be made in dollars or by credit card. "Due to international clearance problems, personal checks are not accepted," the brochure says. However, it urges prospective patients to "obtain insurance forms from your agent. We will assist in their completion. Most insurance companies will honor your claims." But he warns patients not to ask their company whether they are covered for his treatment. "All they have to do is call up and say, 'I'm thinking of going down to the Manner Clinic for laetrile . . . A flag is going to come up and that person will never get it.'" Instead, Manner refers them to the company that does his clinic's billings.

Creative billing

The clinic has retained a Houston-based firm, North American Health Insurance Coordinators Inc., to file the insurance claims. "It has been a godsend for us," Manner said, noting that without insurance coverage, many patients would be unable to stay at the clinic. "We get complete coverage for our patients from most insurance companies," he said. Some insurance firms pay even for the patients' airfare to and from San Diego and for the costs of their accompanying spouses, he said.

North American Health Insurance Coordinators Inc. "specializes in filing insurance claims for alternative health care," said Ronnie King, the company's claims supervisor. The firm files for several Mexican clinics, including Ernesto Contreras' Del Mar Medical Center in Tijuana, as well as some clinics in the United States, Germany and Greece. When claims are denied, King said, he routinely appeals "over and over, whatever's necessary to get the claim paid . . . everything short of litigation." The result: The company recovers at

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least 90% of the clinics' charges and nearly all the claims it files on its behalf, King said.

"We recover \$100,000 to \$160,000 a month for the Manner Clinic," he told the seminar. "It's not so much what is on the claim as how it is presented." For example, on claim forms he refers to the facility as the Cydel Hospital; and for live cell therapy, "we list it as therapeutic injections," he said. The key is using the proper form from the American Medical Association and the right codes, King said. His company has succeeded in getting payments not only from insurers, including Blue Cross of Southern California, but also from some government programs, he said. Manner said his clinic has "a Blue Cross provider number, which gives us clearance right straight across the United States" and that the Canadian Medicare program has paid for Canadians treated at the clinic. Although U.S. Medicare refuses to pay for treatment outside the United States, many people have secondary health insurance that may have to pay when Medicare doesn't, King said. His company also seeks reimbursement for the supplements prescribed by the clinic, King stated. Manner said that patients are sent back to the United States with laetrile, vitamins and other medication, and the clinic prepares the forms required to export the products.

King said he frequently can persuade insurers to cover unconventional treatments by explaining that the patients have exhausted the standard therapies. He also stresses that the Tijuana clinics' fees are much lower than standard hospital bills. King said his service "opens new avenues to patients who never thought they could receive alternative treatment because they didn't think they could afford it."

In a solicitation to patients, King's company says: "We will prepare a standardized claim from the information provided by your doctor's office, using the numerical coding and terminology specific to your treatment. We will mail the claim to your insurance company and follow up on it with telephone calls to ensure it has been received and is being processed. Most claims are paid within 3-4 weeks . . . Out-of-pocket expenses such as travel, hotel, etc., may also be covered by your insurance policy. If so, we will file a claim for these after payment has been made for your medical treatment."

The company charges 16% of the amount it recovers. "If your insurance carrier denies payment after we have done everything possible to collect for you, you will owe us nothing," the solicitation says. But the Manner Clinic does not let the company's fees cut into its revenues. When billing insurers, Manner said, "We take that 16% and add it as administrative costs."

Manner's network

The clinic maintains a steady stream of referrals from its associates throughout the United States and other countries, Manner said. Chiropractors and other

health care providers can become associates by joining the Metabolic Research Foundation for \$100 (or \$25 after attending a Manner seminar). Manner said he realizes that associates lose money when they refer patients. "It's going to cost you money . . . It's not fair to you." So for every referral, "we'll automatically send you a check for \$200." And when the clinic discharges patients, it sends them back to its associates for follow-up. "What you charge, how many times you want to see the patient, that's your decision," Manner said.

He asks that the associates continue prescribing the supplements given at the clinic. This is another source of income for the associates, who can buy products from Manner Metabolic Products Inc. and resell them to patients at a 100% profit.

The associates have a symbiotic relationship with the clinic, Manner said. He said the clinic provides free advice to participating physicians. Manner himself offered to do blood tests for associates' patients at no charge: Associates could send the blood vials to him at his home in Hollywood, Florida. "I do 30-40 pieces of blood work a night," Manner said. He said he had a toll-free telephone number and carried a beeper. "You always want to feel free to call the doctors at the clinic or me," he told the seminar participants. Associates have been invited to visit the clinic at least once a year, especially when the Metabolic Research Foundation holds its annual meeting.

Manner said the clinic and its insurance consultants were trying to get insurance companies to cover follow-up treatment by the associates. "This would also include the reimbursement for all supplements and medications," Manner said. "Although the details of this new program have not yet been worked out, you can imagine the enthusiasm this generated in the minds of our physicians and nutritional consultants."

Besides making initial referrals, the associates can send patients back to the clinic for what Manner described as a "booster shot" of his intravenous cocktail. So if their patients' health appears to decline during the follow-up care, "you might suggest they spend another week at the clinic," Manner told the seminar participants. Patients get a discount on their return visits.

At last February's annual meeting of the Metabolic Foundation, members were welcomed by Francisco Diaz Martinez, chief of medical services for Tijuana. He stated "how proud the Mexican government was to have our clinic located in Tijuana," Manner recalled in a subsequent newsletter. "He also promised the continued support of the government and the health department. I wondered, as he was speaking, if we ever will be afforded the same hospitality by our own government and the health departments in the United States."

Manner was painfully aware of how the U.S. medical establishment views him. On March 12, he wrote a letter to U.S. Rep. Morris Udall, who chairs

Congress' Technology Assessment Board. "One of my concerns is that the U.S. medical and scientific community has not had the opportunity to read about or explore the work that I and the physician members of the Foundation have accomplished in the area of nutritional metabolic therapy," the letter states. "This metabolic therapy is not patented and could be administered by every primary care physician in even the smallest communities in the United States. I am asking your help in getting the Office of Technology Assessment to develop a clinical protocol that is identical to what we use in Tijuana, Mexico. It is imperative that a clinical protocol be released by OTA, so that our health professionals can begin immediately to implement human clinical trials."

Manner contends that the "American Cancer Industry" has tried to suppress his accomplishments. "I was and still am a respected scientist," he said in his letter. But after advocating metabolic therapy, "I was immediately branded as a 'quack' by the United States cancer establishment."

Manner's theories

At the Texas seminar, Manner frequently cited the work of John Beard, who published a book on the enzyme treatment of cancer in London in 1911, and of Ernst T. Krebs Sr. and his son, Ernst Jr., who embraced Beard's ideas and advocated laetrile therapy. Manner said that when he began using laetrile in his research, he was skeptical, but in 1977 he announced he had cured cancer in mice with injections of laetrile, vitamin A, and enzymes. A chiropractic journal published this research and Manner touted his results through press conferences and public lectures. In a 1978 interview in *Mother Earth News*, Manner claimed he had been harassed by the FDA and that he had stored copies of 17 patient records "in a locked bank vault in Canada . . . known only to me and a few friends. When I have 100 of these files, I'm hoping to put them in a package, to take them to Washington, D.C., and I think the whole laetrile controversy will be over." However, the alleged files and Manner's intent to send them to Washington were not mentioned again in any of the dozens of subsequently published materials distributed at the Texas seminar.

Manner has given contradictory opinions of conventional treatment for cancer and other diseases. One of his brochures says, "The cancer patient should not exclude from consideration other forms of cancer therapy such as radiation, chemotherapy and surgery. Fortunately, the nature of metabolic therapy permits its use in conjunction with conventional therapy." But at the seminar, he bitterly attacked standard therapies as ineffective and dangerous. Manner's claimed success rates for cancer were also contradictory. On a tape recording, he said 74% of the clinic's patients "will never have to worry about that cancer again." But a brochure refers to "a success factor of 68%," with success defined

as elimination of either the cancer or its threat to life.

Manner claimed that in recent years a significant reassessment of the nature and causes of cancer has taken place: "Cancer was formerly believed to be a localized disease, characterized by a lesion, usually in the form of a growth, which appeared at some specific part of the body. This localized lesion was thought to be the result of activity produced by an invading virus, carcinogenic agent, or some form of trauma such as a blow. Today, there is a growing conviction among researchers and physicians that cancer is a complex disease that is the end result of a disturbed metabolism (body chemistry) . . . The frequent recurrence of a malignancy after treatment with the conventional methods of surgery, radiation and/or chemotherapy results because the basic underlying metabolic cause of the cancer is rarely considered and consequently remains uncorrected."

The human body is under constant bombardment by carcinogenic chemicals in our food, water and air, Manner said. "Each day, in every human being, large numbers of normal embryonic cells become cancerous." Fortunately, he added, most people have an immune system strong enough to neutralize or destroy the cancerous cells. "If the immune system, however, is weakened from poor nutrition, excessive environmental pollutants or a continuing debilitating stress, the cancer cells are uninhibited and will multiply rapidly, forming the symptomatic 'growth' of cancer," Manner contended. "One of the primary objectives of all metabolic therapy is to revitalize the body's immune system, to restore it to a fully functional condition . . . We can remain healthy if we supply the individual cells of the body with the proper amounts of oxygen, nutrients, enzymes, minerals, amino acids and other essential nutrients from both our diet and nutritional supplements. Of equal importance is the ability of the body to eliminate the waste products of cellular metabolism through proper bowel movements, efficient breathing, normal excretion, etc. Treatments must be provided which will help the body detoxify itself by eliminating harmful pollutants."

Conventional treatments, such as radiation and chemotherapy, cause a "complete depression of the immune system" and can "turn a normal person into a zombie," Manner said. "You don't depress the system you need to fight a disease, and that's exactly what they're doing."

Cancer treatment at the Manner Clinic

Manner said his patients undergo a series of tests, including a blood count, a SMAC-24 and a hair analysis, which he contended "will tell us whether metals are present in deficient or excessive amounts" in the body. The SMAC-24 is a standard test, but Manner rejected the laboratory norms of the medical establishment. These represent an average for the population, and "if the population becomes sicker, the ranges become

greater," Manner said. Therefore, he recommended that his associates use narrower "optimum" ranges he had devised. On the basis of these tests, Manner would recommend supplements to correct supposed mineral excesses and deficiencies.

Upon entering the clinic, patients are put on a two-day juice fast. Manner also believed they must achieve two bowel movements a day; if the fast does not stimulate the bowels, patients receive an herbal laxative and a soapsuds enema. The goal is to achieve "a bowel transit time of 12 hours," The protocol for Manner's cancer therapy states: "Anything longer than this is dangerous, for it allows chemical reactions to occur in the digestive system. End products of these reactions can be carcinogenic (e.g. nitrosamines)."

Patients also receive a daily coffee enema which Manner called "a coffee retention implant": "One cup of coffee (not instant) should be brewed and allowed to cool to body temperature. It is then injected into the rectum with a rectal syringe and retained for 15-30 minutes. The caffeine-stimulated secretion of bile is an important part of the detoxification plan as it helps to restore the alkaline condition of the small intestine." At the seminar, Manner acknowledged that he had been ridiculed for advocating coffee enemas. But he said, "When we talk about a coffee implant, we're talking about something that is solid science." When patients return home, Manner recommended that they continue one or two coffee enemas a week.

Patients also receive "digestive aids" and "pancreatic enzymes" with every meal. "These compounds contain hydrochloric acid, pepsin and enterically coated pancreatic enzymes," the cancer protocol states. "This will insure the proper digestion of ingested food." Manner told the workshop, "Most patients we see do not have a good digestive system." The regimen also calls for "anti-neoplastic enzymes" to remove protective shields so the tumor can be recognized by the immune system, the protocol states. Manner added that the enzymes help remove a fibrin coat that surrounds tumors, making them vulnerable to the other components of his treatment.

One of those components is vitamin A. "This should be given in an emulsified form to minimize liver involvement," the protocol states. "Two drops of Emulsified A are given in the morning juice and two drops in the evening juice to increase the number of circulating lymphocytes. This total of four drops will give the patient 60,000 International Units daily. Every second day an additional two drops should be added morning and evening. Classical signs of vitamin A toxicity should be watched for both by the patient and the physician. If any occur, discontinue vitamin A for one week. Return after one week with a two-weeks-on, two-weeks-off routine, employing a dosage 100,000 units lower per day than that which caused the toxic reaction."

"When we first started using vitamin A, people

thought we were mad," Manner told the Texas seminar. The clinic increases patients' daily doses of vitamin A from 100,000 International Units to 1 million. "That's enough vitamin A to kill," Manner noted. "How can we ever support these massive doses of vitamin A?" Because, he answered, in its emulsified form, the vitamin A bypasses the liver and does not poison the patients.

Benjamin Wilson, M.D., a surgeon in Dallas, Oregon, who has tracked Manner's activities for many years, states that Manner is dead wrong and that these vitamin A dosages can build up to toxic levels. In 1983, Charles and Paulette Peters of Midlothian, Illinois, sued Manner, the Metabolic Research Foundation, a Texas physician and two Illinois "nutritional consultants." According to the suit, Manner advised Mrs. Peters that it was safe to give large amounts of vitamin A to her 8-year-old son Charles, Jr., who had been diagnosed as having leukemia. After taking 120,000 IU of vitamin A daily for about a year, he developed headaches, extreme sensitivity to light, severe bone pain, headaches, mental confusion and a 10-pound weight loss caused by vitamin A poisoning [see NF 1:10]. The suit was settled out-of-court for an undisclosed sum.

At the seminar, Manner said that the vitamin A stimulates production of white blood cells, which can attack the tumor. His protocol adds that "lymphocytes are stimulated by the addition of thymosine. This hormone is present in raw thymus gland." Consequently, the clinic gives patients two thymus tablets three times a day.

The buildup of white blood cells has a drawback, Manner claimed. He said it causes a change in the oxygen in the bloodstream. An atom of oxygen normally has eight electrons in its outer ring, Manner said; however, a concentration of white blood cells causes two of the electrons to be thrown out, creating what he called an oxide radical. This oxide radical also is caused by ultraviolet light, microwave ovens, color television sets, x-rays and other radiation, Manner said. "We are being constantly bombarded with these rays." The resulting oxide radicals cause arthritis, rheumatism, lupus, sickle cell anemia and other diseases, he contended. So, three tablets of superoxide dismutase (SOD) should be given to "enable the body to convert any superoxide radicals present to water and pure oxygen."

Although enzymes taken by mouth are digested and don't actually enter the body, Manner told the Texas seminar that the SOD causes the oxide radicals to combine with hydrogen in the bloodstream, forming hydrogen peroxide, which boosts the blood's oxygen level. "Cancer cells thrive on carbon dioxide and die in an atmosphere of oxygen," he said.

The next part of Manner's therapy involves vitamin C "to inhibit tumor growth," the protocol says. "Start with five grams daily and increase by one gram per day until an acute diarrhea occurs. At this point,

drop back two grams and continue at this level throughout the treatment.

The protocol then calls for administration of amygdalin (laetrile) by mouth and later intravenously in a "Manner cocktail" containing 9 grams of amygdalin, 10 cc of DMSO, and 25 grams of vitamin C over 2-3 hours. Manner claimed that in the blood the amygdalin breaks down into: glucose, which gives patients a burst of energy; benzaldehyde, which alleviates their pain; and cyanide, which he said kills just cancer cells. However, according to the American Cancer Society, laetrile is toxic and cannot attack cancer cells selectively.

Manner's approach also calls for supplementation with selenium, zinc, spleen tablets, multivitamin/mineral tablets, and numerous other products. "There is no supplement which cannot be taken safely with the aforementioned plan," the protocol says. "In fact, one should supplement twelve tablets daily of the gland or organ tissue primarily affected." The clinic also puts cancer patients on a "natural food" diet which includes 32 ounces of raw vegetable juice a day. "A juice extractor should be purchased by the patient, and most of the vegetables in the diet should be juiced," the cancer protocol says. "In this way, all of the naturally occurring enzymes, minerals and vitamins will be present."

The clinic has whirlpools and Jacuzzis. Patients take "hydrotherapy," followed by a 45-minute massage, to stimulate the lymphatic system, Manner said. He said the clinic also holds inspirational sessions for its cancer patients. "If you believe that you only have three months to live, there is no treatment," Manner said. "When we begin to think we're going to make it, the body responds." The clinic tries to convince its patients that they can beat their cancer, said Miguel Lanzagorta, the clinic psychologist, who attended the Texas seminar. "As you think, so you become," he said. He touted "the power of thought," saying, "All power comes from within."

Seminar participants also received information on the "Manner 5" program, which Manner said was intended to augment the basic program with 21 days at the clinic plus 69 days of treatment at home. Its components include laetrile, various enzymes and supplements, an "anti-viral compound in the same class of interferon," a "lysing agent . . . designed to dissolve, decompose and disintegrate cancer cells," orange capsules to add oxygen to the blood, white-and-brown "antifermentation" capsules to "keep the carbon dioxide level in the blood low," and white-and-blue "anti-fibrinator" capsules that "strip cancer cells of their protective cocoon." Although literature referred to Manner 5 as "a new program that we feel will revolutionize cancer therapy," Manner said the program has been used for about five years and that the clinic's medical director, Gilberto Alvarez, recommends it for all cancer patients.

A testimonial

One of Manner's biggest boosters has been 51-year-old Ginny Davis, of Franklin, Wisconsin, whose testimonial story was distributed at the seminar. A pathology report attached to the testimonial indicates that in April 1985, a diagnosis of "infiltrating adenocarcinoma" was made in a polyp that was removed from Ms. Davis's large intestine. According to her testimonial, the surgeon advised Ms. Davis's family doctor that part of her large intestine should be removed, but she refused and chose instead to go to the Manner Clinic.

"It was a beautiful experience," Davis said in the testimonial. "I saw so much . . . Norma, with brain tumors, had been in a wheelchair for five months—walking with a cane in two weeks. Mike, with bone cancer, had been given only two weeks before he'd be flat in bed—and things were supposed to get worse from there. Instead, in two weeks he walked around the San Diego Zoo for four hours!"

"Now it is three years later. My latest colonoscopy report reads, 'Conclusion: normal colon' by my same specialist I original saw." Davis is more than a supporter of Manner; she is also listed on a map given out at the meeting as one of 12 distributors of Manner products. [Editor's note: The average layperson looking at Ms. Davis's story would probably conclude that her surgeon had wanted to remove part of her colon because her cancer had infiltrated into the colon. But the term "infiltrating carcinoma" merely meant that the cancer had infiltrated below the surface layer of the polyp—so that removal of the polyp would very likely cure the patient. The purpose of further surgery would have been to prevent new cancers from forming. Thus it is probable that Ms. Davis had been cured of her cancer before going to the Manner clinic.]

Arthritis regimen

The Manner Clinic also offers treatment for arthritis, including rheumatoid arthritis, gout and osteoarthritis. Contrary to the assertions of conventional physicians, "there is a known cause and there is a known cure," Manner said at the Texas seminar. He claimed that arthritis occurs when trauma from a fall, sprain, or everyday wear and tear injures a joint and the body's white blood cells rush to the area to clean up the damage. These white cells produce oxide radicals, which restrict movement in the joints, Manner contended. His arthritis patients go on a two-day juice fast, receive coffee enemas, follow a mainly vegetarian diet that includes numerous minerals and enzymes, receive 600,000 IU daily of emulsified vitamin A and 15 grams of vitamin C, and take other supplements such as thyroid, adrenal and liver tablets. Patients also get a slow-drip infusion containing 25 grams of vitamin C and 10 cc of dimethyl sulfoxide (DMSO), administered daily over 2-3 hours. They also receive 5 tablets a day of superoxide

dismutase, Manner said.

This therapy, he claimed, eliminates the oxide radicals that attack the lubricating fluids in the joint. But to eliminate the inflammation and prevent recurrence of arthritis, patients must take additional supplements, which he called Homeopathic Formulas No. 1, 11, 30 and 46. Each formula comes in a 1-ounce bottle that retails for \$8. Patients are told to continue these formulas along with SOD, digestive enzymes and other supplements for at least three months after returning from the clinic, Manner said. He also recommended that DMSO be diluted 1:1 with distilled water and patted gently on affected joints. "DMSO penetrates every cell in the body," he said. "It travels into and out of synovial cavities and, in so doing, removes toxic elements which may be present."

"As soon as we eliminate the inflammation, the arthritis should be gone and out of the body for the rest of the patient's life," although ingestion of red meat can retrigger the disease, Manner said. On the arthritis tape, he says the clinic has been using this therapy since 1984 and has a success rate of more than 80%. But no data to back this up were distributed at the seminar.

Multiple sclerosis regimen

Manner said the medical establishment is in the "dark ages" about multiple sclerosis, but he believed it is caused by a virus which produces (you guessed it) oxide radicals in the blood. "The treatment plan, based on this hypothesis, is a three-fold plan," the clinic's protocol for multiple sclerosis therapy states. "First, the virus must be removed from the body. This will be accomplished by using interferon stimulants and immunoglobulins. Secondly, the superoxide radical must be removed, utilizing the dismutation reaction. Thirdly, the physiological condition of the organ systems of the body must be restored to an optimum level."

The clinic's patients with multiple sclerosis do not receive a slow-drip infusion. However, along with the fast, coffee enemas, five SOD tablets three times a day, and a diet that includes "digestive aids," the patients take: two daily tablespoons of Imu-Gen, which Manner said is a colostrum from cows and is rich in immunoglobulins; 15 grams a day of vitamin C; 60,000 IU a day of emulsified vitamin A; 9 capsules a day of Prometal, which Manner said contains octacosanol, a wheat germ oil product that assists the neuromuscular system. After the patients leave the clinic, the Imu-Gen is administered on a three-weeks-on, three-weeks-off schedule; vitamin C is reduced to 5,000 mg per day; and vitamin A is cut to 25,000 units a day.

"Within a short time, they begin to feel a change, they begin to feel stronger," Manner said. "The results in some instances are unbelievable." He said the clinic has been treating multiple sclerosis for about two years. [Editor's note: In a 1984 TV broadcast he said he had been treating multiple sclerosis and claimed a 90% success

rate. However, since most patients with multiple sclerosis undergo several spontaneous remissions, no therapy for this condition can be evaluated without long-range controlled studies. Although Manner claimed high success rates for all of the conditions he treated, I have seen no evidence that he actually kept track of how his patients did after leaving his clinic. I believe that at least some of Manner's claims were outright lies.]

The clinic also offers two one-week programs, Manner told the Texas recruits. One is a "prevention program," which he said "also is covered by all the insurance policies." The program consists basically of the first week of the cancer therapy, but laetrile is omitted from the slow-drip infusion.

Cellular therapy (live cells therapy)

In October 1986, the clinic began offering "cellular therapy," based on the research of a German professor named Niehans, Manner said. In this therapy (which is on the American Cancer Society's "unproven methods" list), cells from an unborn or very young sheep are injected into the buttocks to revitalize the body's memory, sex drive and other characteristics. Manner claimed that the therapy has also been effective in reversing arteriosclerosis, Parkinson's disease, premature menopause, impotence, bronchial asthma, chronic indigestion and a long list of other problems. "Even in cases of chronic diseases which have persisted for many years and no longer respond to conventional medication, cell therapy can be beneficial because it activates the endogenous powers of resistance and revitalizes patients," Manner said. He recommended this treatment every five years for people between age 35 and 45 and every five years for older people. "This program is so well accepted that many American insurance companies may reimburse the complete cost of your treatment," a Manner brochure says.

Because of Manner's emphasis on strengthening the body's immune system to fight disease, several participants at the seminar asked whether he intended to develop a therapy for AIDS. Not surprisingly, he said yes, he had been thinking about opening an AIDS clinic in the Caribbean. He said he had been reluctant to treat AIDS at his Tijuana clinic because the thought of rubbing shoulders with AIDS patients might drive other patients away.

Throughout his presentation, Manner exuded optimism, self-confidence, and apparent sincerity—traits that enabled him to sell his bill of goods to many people. Calls to the toll-free number (1-800-433-4962) of Manner's public relations director, Nadine Rogers, are still answered with a recorded offer of a free information packet. But Manner himself shall quack no more. On October 11, he died of a massive heart attack.

Jeff South is a reporter for the Dallas Times-Herald.

BOGUS CLAIMS FOR H₂O₂ STOPPED

A U.S. Postal Service Judicial Officer has ordered Kurt W. Donsbach, founder of DRK Supplements, and his nephew, Richard Donsbach, the apparent owner since 1985, to stop representing in mail order sales that a 35% solution of hydrogen peroxide is effective against cancer and arthritis. (The hydrogen peroxide commonly used to clean wounds is a 3% solution.) The California-based company had been selling peroxide products while Kurt Donsbach promoted their use for health purposes in publications and in lectures at health fairs throughout the U.S. According to a Postal Service news release, DRK operated booths at some of these fairs and referred prospects for treatment at a Mexican hospital administered by Kurt Donsbach.

The cease and desist order, issued July 20, 1988, forbids DRK and the Donsbachs from falsely representing that: 1) hydrogen peroxide used orally or intra-

venously is effective in preventing the onset or spread of cancer or ridding the body of cancer; 2) hydrogen peroxide used topically, orally or intravenously is effective against the pain and inflammation of arthritis; and 3) food grade (35%) hydrogen peroxide is fit for human consumption. They are also prohibited from making unsubstantiated representations that hydrogen peroxide is effective against any other condition or that any other unproven remedy is effective against cancer or arthritis.

Earlier in the case, a federal court judge had issued a temporary restraining order permitting the Postal Service to stop mail to DRK containing remittances for hydrogen peroxide sales. Without acknowledging fault, the Donsbachs then agreed to the issuance of the cease and desist order rather than contest the charges further. [For information about Kurt Donsbach's many other activities, see the October 1987 Nutrition Forum.]

BRIEFS

"Fit for Life" update. Plans have been announced to market food items, personal health products, housewares, and other "natural items" based on the notions of *Fit for Life* authors Harvey and Marilyn Diamond. The products will be developed and promoted by the Howard Marlboro Group and its subsidiary, HMG Licensing of New York City. Although the book is filled with nonsensical ideas about nutrition [see NF 3:57-59], it has sold millions of copies.

Oat bran and cholesterol. Oat bran, the ground inner husk of the grain, has become popular as a means of lowering blood cholesterol levels. After reviewing the experimental evidence, *The Medical Letter* [December 2, 1988] has concluded: 1) limited short-term data indicate that large amounts of dietary oat bran, beans and possibly other sources of soluble fiber can lower serum cholesterol concentrations, including HDL-cholesterol; 2) small amounts of soluble dietary fiber may have little or no effect on cholesterol levels; 3) long-term effectiveness and safety of eating large amounts of soluble fiber have not been established; and 4) large amounts of oat bran and other dietary fiber can cause bloating.

Misleading ad endorsed. The Council of Better Business Bureau's Children's Advertising Review Unit (CARU) has concluded that a Kellogg Company television commercial linking breakfast cereal and athletic prowess was not misleading. The commercial featured a young boy talking to the animated character, "Tony the Tiger," on a basketball court. As the commercial opens, the boy is upset because he is unable to compete with the other basketball players. "Tony" consoles him and says, "What you need is a complete breakfast including my vitamin-packed Frosted Flakes. They bring out the tiger in you." While the boy practices baskets, voice-overs sing similar messages. Later the boy is shown shooting baskets and being carried off the court by other players as a hero. CARU expressed concern that the commercial implied that eating Frosted Flakes can directly lead to becoming a champion and that the benefits are attributable to its high vitamin concentration. Kellogg responded that the commercial's principal message was to believe in yourself and that another part of the message was to eat a balanced breakfast that includes Frosted Flakes. Kellogg also claimed that the commercial encouraged children to believe that practice and self-assurance can help them achieve their goals. *Editor's note:* Since eating Frosted Flakes has nothing whatsoever to do with basketball success, I fail to see how the commercial was anything but misleading.

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NUTRITION, CHOLESTEROL AND HEART DISEASE PART I: RISK FACTORS

Mark A. Kantor, Ph.D.

The National Heart, Lung, and Blood Institute is coordinating an aggressive national campaign aimed at focusing public and professional attention on blood cholesterol levels. Participants in this campaign—called the National Cholesterol Education Program (NCEP)—include the American Heart Association, the American Medical Association, and other prominent medical groups as well as organizations from business and labor. These groups estimate that one out of four adults—about 40 million Americans—have cholesterol levels high enough to warrant further evaluation and possible medical intervention.

At the heart of this campaign is the belief that large numbers of Americans are at risk for heart disease and that dietary changes can lower their risk. During 1989, *Nutrition Forum* will explore this subject with a series of articles on the relationships between coronary heart disease, blood cholesterol, and diet.

Coronary Heart Disease (CHD)

Coronary heart disease is a condition of the heart and blood vessels in which the coronary arteries—the major arteries supplying blood to the heart—become clogged with a fatty, fibrous, cholesterol-laden deposit called plaque. The build-up of plaque over time gradually thickens the artery walls and narrows the channel inside. This condition, which is the chief cause of CHD, is called atherosclerosis, a term derived from the Greek words *athere* (gruel or paste) and *skleros* (hard).

While most Americans have some degree of atherosclerosis, the disease becomes dangerous when enough plaque accumulates to impede the flow of oxygen-rich blood through the arteries. Inadequate blood supply to the heart (ischemia) can cause chest pain (angina pectoris), which typically radiates to the left shoulder or arm during physical exertion. Although angina is an early indicator of CHD, it usually doesn't occur until the passageway through a coronary artery is reduced by at least 50%.

A heart attack occurs when one or more of the coronary arteries is abruptly sealed off by a blood clot, bleeding

into an atherosclerotic plaque, or coronary artery spasm. This kind of heart attack is called a myocardial infarction. When it occurs, part of the heart muscle may die from oxygen deprivation, or the heart may undergo a severe or fatal disturbance in rhythm (arrhythmia).

In most people, the process of atherosclerosis begins during childhood when “fatty streaks”—early cholesterol deposits that are nearly ubiquitous in the American population—begin developing within the arteries. Although these streaks don't always give rise to atherosclerosis later in life, they probably are forerunners of more advanced stages of atherosclerosis.

The early stages of coronary heart disease can be difficult to detect because they produce no symptoms. In many cases, the first indication is a heart attack, which may be fatal. In others, angina with exertion provides a warning that more serious problems loom ahead. The heart can also be damaged by ischemia that occurs without symptoms. The goal of the National Cholesterol Educational Program is to prevent heart attacks by identifying and treating individuals at risk for CHD before they suffer irreversible heart damage.

The death rate from cardiovascular disease has been declining steadily in the United States, especially since 1970, but it is still the nation's leading killer. Each year, about 1.5 million Americans suffer a heart attack, resulting in close to 760,000 hospitalizations. Coronary heart disease causes more than 500,000 deaths per year—nearly one per minute. It is responsible for more deaths than all forms of cancer combined and accounts for 30% of deaths beyond age 75. The economic cost is also staggering: about \$39 billion per year, a figure that includes physician and nursing services, hospital and nursing care, medications, and lost productivity from disability.

Risk Factors

Ten major risk factors for CHD are generally recognized. Most of these are considered “controllable” because they may be reduced or eliminated through medication or changes in lifestyle. The three most important controllable risk factors are cigarette smoking, high blood pressure (hyperten-

sion), and high blood cholesterol level (hypercholesterolemia). The other principal risk factors are obesity, diabetes, lack of exercise, stress, family history CHD, being male, and increasing age.

The risk factors for CHD are cumulative: the more risks an individual has, the greater the danger of having a heart attack. For example, a person who smokes and has high blood pressure and a high blood cholesterol level is eight times as likely to develop CHD as an individual with none of these risk factors. If the blood pressure and blood cholesterol level are very high, the risk may be 20 times as high.

Blood Cholesterol

Evidence has been accumulating for nearly a century that an elevated plasma cholesterol level is a major risk factor for CHD. As early as the 1920s, scientists observed that cholesterol was a principal component of the atherosclerotic plaque in rabbits. Over the years, metabolic studies using a variety of animal species consistently have shown a link between high blood levels of cholesterol and the pathogenesis of CHD.

Much of the research in humans has focused on individuals having genetic defects in cholesterol metabolism. Patients with abnormal cholesterol or triglyceride levels provide convenient models for studying the relationships between blood lipid and lipoprotein levels and the risk of CHD. For example, about one out of a million people is afflicted with a rare genetic defect in cholesterol metabolism called "homozygous familial hypercholesterolemia." Individuals born with this disease have extremely high levels of blood cholesterol, and inevitably succumb to CHD. Sometimes their first heart attack occurs by the age of two.

Numerous epidemiological studies, including the well-publicized Framingham Heart Study, have shown that as blood cholesterol levels rise, the heart attack rate also increases, especially at levels greater than 240 milligrams per deciliter (mg/dl).

The importance of cholesterol as a risk factor is illustrated by comparing the average cholesterol levels in American and Japanese men. The typical Japanese has a cholesterol value of about 150 mg/dl, nearly 70 mg/dl lower than his American counterpart. Accordingly, the incidence of CHD in Japan is one-tenth that of the United States. Although many Japanese smoke cigarettes and have high blood pressure, these risk factors—when not accompanied by a high blood cholesterol level—do not seem to significantly increase their risk of CHD. Therefore, a certain minimum level of cholesterol in the bloodstream is probably required for CHD to develop

even when other important risk factors are present. When the Japanese migrate to Hawaii or San Francisco and adopt American eating habits, their plasma cholesterol levels typically rise, as does their incidence of CHD.

Scientists had long suspected that if the blood cholesterol level in a population could be reduced, the CHD death rate also would come down. They had no direct proof for this so-called "cholesterol hypothesis," however, because of the difficulties in designing and implementing an appropriate experiment. Conducting a long-term diet study is extremely arduous because of problems with double-blinding and compliance. To achieve statistical validity, such an experiment requires large numbers of subjects and is extremely expensive.

Despite these inherent difficulties, a large-scale clinical trial was conducted by the National Institutes of Health (NIH) between 1973 and 1982. Called the Lipid Research Clinics-Coronary Primary Prevention Trial (LRC-CPPT), it provided the strongest evidence ever obtained for the importance of lowering cholesterol. The results of this study suggested that for each 1% reduction in the blood cholesterol level, the risk of CHD was decreased by 2% [*JAMA* 251:351-374, Jan. 20, 1984].

Although considered a landmark study, the LRC-CPPT has still generated considerable controversy. Since the study was performed only in male subjects who were at high risk for CHD because they had elevated cholesterol levels to begin with, the conclusions may not be valid for women or for individuals with lower cholesterol values. Furthermore, the drug cholestyramine was used together with diet to lower cholesterol levels. Therefore, the effectiveness of diet alone in reducing the incidence of CHD is uncertain. However, NIH experts believe that the results can be extrapolated to other segments of the population and that diet alone should be valuable in reducing heart disease risk.

Despite the overall success of the LRC-CPPT, a disturbing note emerged from the study. While the trial clearly demonstrated that lowering plasma cholesterol levels helped reduce the risk of CHD, the overall death rate was similar in both the experimental and control groups. The failure for mortality to decline as the incidence of CHD decreased was troubling because this same trend has been observed in other clinical trials as well. Researchers have no good explanation for this anomaly. Nevertheless, a nationwide effort is underway to persuade Americans to become aware of their cholesterol level and to take action if it exceeds recommended guidelines.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service, and a regional communicator for the Institute of Food Technologists. His postdoctoral research was in cholesterol and lipoprotein metabolism.

BOOK REVIEW

Title: Complete Guide to Vitamins, Minerals & Supplements

Author: H. Winter Griffith, M.D.

Publisher: Fisher Books, Tucson, Arizona

Price: \$9.95, softcover

Reviewed by: Stephen Barrett, M.D.

The author is a former practitioner and family practice educator who devotes most of his time to writing medical-information books for the general public. He describes himself as taking a middle ground between the traditional medical establishment that usually cries, "Eat a well balanced diet and you'll get all the nutrients you need" and people who view supplements as miracle cures. He promises "no personal opinions . . . only the consensus of the majority of experts, presented as impartially as possible."

The book covers general advice (4 pages), vitamins (53 pages), minerals (122 pages), amino acids and nucleic acids (24 pages), other supplements (29 pages), "medicinal herbs" (202 pages), toxicity ratings for herbs (19 pages). It also includes a 10-page glossary and 7 pages listing the ingredients in brand-name supplement products. For each substance, the book contains 1-3 pages listing basic information, natural sources, reasons to use, unproved speculated benefits, who needs additional amounts, deficiency symptoms, unproved speculated symptoms, lab tests to detect deficiency, dosage and usage information, warnings and precautions, overdose/toxicity, adverse reactions or side effects, and in some cases, interactions with other substances.

Although the author's views are generally aligned with the scientific community, the book is mostly composed of lists with inadequate perspective. Under "reasons to use" it lists biochemical tidbits that have little or no practical value but might inspire readers to take unnecessary supplements. For example, "restores normal function of nerve cells, heart cells, skeletal muscle cells, kidneys and stomach juice secretion" is given as a reason to use potassium bicarbonate/chloride.

The passage on vitamin E contains a long list of deficiency symptoms and recommends "additional amounts" for people over 55; but it fails to mention that vitamin E deficiency on a dietary basis has never been reported in an American adult.

Even worse, the book contains many errors which suggest that the author does not understand the fine points of many of his topics or has failed to do his homework. For example, he describes the Recommended Dietary Allowances as "average amounts needed per day to maintain good health in the average healthy person" rather than the

amounts "adequate to meet the known nutritional needs of practically all healthy people."

The publicity for the book is particularly obnoxious. An ad in *Publishers Weekly* claims that, "No other book on the market covers this subject as completely, in an appealing, easy-access format." The ad also suggests that the reading public is hungry for information on "which vitamins and minerals will prevent, cure and relieve their problems." However, such information is listed only in the sections on "unproved speculative benefits." Although the ad says the book contains 600 pages, I can find only 516, including front matter.

It is possible that with appropriate expert review the book could be transformed into a useful reference for professionals. However, I don't see how it could be made useful to the general public in its present form, even if purged of its errors.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 22 books including *Vitamins and "Health" Foods: The Great American Hustle*.

QUESTION BOX

Q. A product called Sweet Away is being marketed with claims that it causes a large percentage of the sugar you consume from being absorbed into the body. Company literature states that the product contains *Gymnema sylvestre*, which, when chewed, will make sweet things taste sour. According to the literature, a similar process takes place in the intestine to block absorption of sugar—with possible benefit to people with diabetes, obesity, hyperactive children, alcoholism, and hypoglycemia. The product is supposed to be taken with water "so, your taste buds are not affected; but the results are, while having wonderful meals and desserts, while the effect of sugar intake into the body is considerably reduced." Are any of these claims true?

A. It has been known since 1887 that chewing the leaves of *Gymnema sylvestre* can prevent one from experiencing the taste sensation of sweetness. However, we are aware of no reliable studies showing that *Gymnema sylvestre* blocks absorption of sugar into the body.

IRIDOLOGY: DO THE EYES HAVE IT?

By C. Eugene Emery, Jr.

The eyes are sometimes called the window to the soul. We watch them to determine whether a person is sincere or lying. When we encounter people, we usually notice their eyes first. So perhaps it's not surprising that some people believe that eyes provide a window to a person's health as well.

Signs of a few diseases—most notably atherosclerosis and Wilson's disease (a disorder of copper metabolism)—can appear in the colored portion of the eye (the iris). But iridologists profess that the iris can be used to diagnose virtually any disease. They claim that examination of eye markings can reveal not only current health problems but indications of past problems. Typically, they consider themselves "holistic" and recommend dietary supplements to correct whatever problems they see.

I first heard of this practice when a local television station aired a story featuring claims by a local iridologist who, according to the TV reporter, had successfully diagnosed someone's back problems. Another iridologist, in nearby Westerly, Rhode Island, was getting coverage in the New London Day newspaper. Subsequently, I discovered that a medical doctor also was dabbling in the field. I decided to investigate.

My first stop was an interview in Westerly with Joseph M. O'Reilly, Jr., a former judo and yoga teacher who called himself a "registered nutrition consultant" and said he had a "Ph.D." in nutrition from Donsbach University (an unaccredited correspondence school). Before getting into the nutrition field, O'Reilly said, he had been a parole officer in Florida and a certified sex educator.

O'Reilly told me that iridology could detect cancer with 99% accuracy. He said the shape of the eye and pupil could reveal psychological problems and be used to determine when a person is near death. He also reported that he discourages the use of drugs because "when you put drugs in the body, it just drives the illness deeper into the tissues and cells. You're just masking the symptoms. You're not getting to the cause."

When he examined my eyes, O'Reilly saw "caffeine spots from too much coffee," but said the spots could also be caused by too much alcohol. (I never drink coffee and, at most, drink one can of beer per month.)

The iridologist featured in the TV broadcast, Rosemary Hill, also taught at a local holistic health center. During her interview, she stressed that she doesn't diagnose diseases but "reads conditions in organs that could be construed as a weakness for a disease." But if you have a heart condition, she said, it would be obvious in the eyes. She also reported that she was in the process of changing her eye color from an unhealthy brown to a healthy blue.

When Hill examined my eyes, she reported some constipation (wrong), cardiovascular problems (nope), a high mucus and acid body (I have no idea how to measure this), stress in the foot area (not that I know of) and fatigue (sorry). She did say correctly that I ate lots of dairy, flour, red meat and sugar products, but that assessment would probably fit most Americans. Next I arranged a test with the help of Dr. Robert Bahr of the Rhode Island Ophthalmological Society, who took slides of the eyes of eight people with various medical

problems, such as lung disease, headaches, deafness, and a history of cancer. When I asked Hill to match the slides to the health problem, she declined, explaining that "I don't work that way." Instead, she suggested that I try to match her readings to the slides.

Working under those rules, Hill—who had said that iridology was accurate at least 75% of the time—missed the affected organs or body parts in 6 out of 8 slides. That's surprising if you consider the fact that each of her readings included many organ systems. For example, in the case of a nearsighted person with a history of fainting and a pulse of 54 when the slide was taken, Hill noted "severe acidosis," "not digesting proteins," "intestinal tract is a little depressed," "there is a difficult lung problem there," "probably tonsils in there too," "mucus throughout the system," "congestion in the head," "not absorbing nutrients," "esophageal, leg problems," "shoulder problem" and a "somewhat spastic colon."

In the two cases where Hill named an organ or body part that actually might be related to the patient's problem, she was still quite inaccurate. In the slide of a woman with daily headaches, Hill saw "toxins from the bowel dumping into the head area" and blamed "parasites" for the problem. For a woman with hypoglycemia, Hill cited an undefined "glandular problem," but she also reported a "possible thyroid problem" and "a lot of toxins in the blood stream."

The second person to take my test was Robert S. Carson, M.D., medical consultant for the holistic health center. "You can come out with some uncanny diagnoses by looking at the iris," he said. "The scientific evidence for this is very solidly based."

Unlike Hill, Carson did attempt to match the eye slides to the medical records. Despite at least two guesses in each case, he missed the fact that one woman had had a mastectomy and hysterectomy, that another had broken both arms and a leg, that another suffered from headaches and stomach prob-

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lems, and another had hypoglycemia. He correctly matched the person with severe lung disease—on his second try.

My test also included a pair of slides showing a glass eye against a black background. Although the eye had no lashes and fingerprint ridges of one of the fingers holding it up to the camera were visible, neither of the iridologists mentioned anything amiss.

Bernard Jensen, D.C., the leading American iridologist, claims to have worked with over 350,000 patients during almost 50 years of active practice. He states that "Nature has provided us with a miniature television screen showing the most remote portions of the body by way of nerve reflex responses." He also claims that iridology reveals "tissue strengths and weaknesses" as well as "nutritional and chemical needs." His booklet, *Iridology Simplified*, relates more than 30 diseases and conditions (including arthritis, biliousness, gallstones, obesity and tuberculosis) to "mineral deficiencies." It also contains an "Iridology Nutrition Chart" for determining what vitamins, minerals and herbs to give "after determining those areas of the iris which show a need."

Jensen and two other practitioners were tested in a study published in the September 28, 1979 *Journal of the American Medical Association*. In this study, the iridologists were shown iris photographs of 143 patients, some with severe kidney disease and some with no evidence of kidney problems. The assessment of kidney problems was based on the levels of creatinine in the blood. When asked to identify the people with problems, all three iridologists failed the test.

Five Dutch iridologists failed a similar test last year when they tried to detect gallbladder disease by looking at slides of the iris of 39 patients with gallstones (proven by surgery the day after the slides were made) and 39 patients without gallstones (proven by ultrasound examination). The iridologists were correct only half the time (the result expected by chance), and did not agree among themselves about which patients had gallstones and which did not [*British Medical Journal* 297:1578-1581, Dec. 17, 1988].

Iridologists use detailed charts relating the location of various eye markings to problems in various parts of the body. In 1981, the AMA Council on Scientific Affairs noted that such charts are similar in concept to those used years ago in "phrenology," the pseudoscience that related protuberances of the skull to the mental faculties and character of the individual. Russell S. Worrell, an assistant clinical professor at the School of Optometry of the University of California, Berkeley, has noted that at least 19 iridology charts exist but that all have differences in the location and interpretation of many of their iris signs.

Despite all this, iridology apparently persists for some of the same reasons psychic practices and astrology remain popular.

First, since most ailments are self-limiting, most people who consult iridologists are likely to feel better with the passage of time. So if symptoms resolve while following an iridologist's advice, the iridologist will get the credit.

Second, iridologists are probably helped by feedback from their patients, and patients often take the iridologist's musings and fit them to events in their life.

Third, many of their claims are difficult or impossible for laypersons to evaluate. Hill, for example, contended that the iris not only reveals information about your present medical problems, but can reflect past and future problems as well. Thus, if she sees a back problem in your eyes, she can claim credit whether your back bothers you now, has bothered you in the past, or bothers you in the future. She also claimed that the structure of the iris can provide information about the health of your ancestors.

But from a practical standpoint—the ability to detect virtually any disease in the iris—the eyes clearly don't have it.

Mr. Emery is a science writer for the *Providence Journal*.

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NEW FDA REPORT ON PESTICIDE LEVELS IN FOODS

Data from FDA's pesticide monitoring programs indicate there is no factual basis for widespread public concern that pesticides present a health hazard in the American diet.

Three federal agencies share the responsibility for monitoring pesticide levels in foods. The Environmental Protection Agency registers or approves the use of pesticides and establishes tolerances for those whose use may lead to residues in foods. The FDA is responsible for enforcing these tolerances for foods shipped in interstate commerce, except for meat and poultry, which are the responsibility of the U.S. Department of Agriculture. A tolerance is the maximum amount of residue expected in a food when a pesticide chemical is used according to the label directions, provided that the level does not present an unacceptable health risk. In 1987, there were 320 pesticide chemicals with established food and/or feed tolerances in the United States.

According to the latest FDA report—published in November 1988—data from over 25 years of monitoring show that above-tolerance levels are rarely found and indicate that pesticide chemicals are generally used according to label directions. Some violations result from misuse, unusual weather conditions, or poor agricultural practices. However, most violations involve foods that contain small amounts of pesticides for which no tolerance has been set. For example, if a pesticide registered for use in lettuce but not cabbage is found in cabbage, any amount is illegal even though it may not present a health risk.

Under its regulatory monitoring program, the FDA collects samples from individual lots of both domestically grown and imported food and analyzes them for pesticide residues. When violative residues are found, the agency can

stop the food from being marketed.

The FDA also does a Total Diet Study (also called a Market Basket Study) designed to estimate the dietary intakes of pesticide residues for eight age/sex groups from infants to senior citizens. Industrial chemicals, heavy metals, radionuclides and essential minerals are also measured. To obtain the samples, FDA personnel purchase foods from local supermarkets or grocery stores four times a year throughout the United States. Each market basket contains 234 individual items judged through nationwide dietary surveys to represent what Americans eat. The foods are prepared for eating and then analyzed for pesticide residues. The results of these analyses are combined with data on food consumption to estimate the actual amounts of pesticide residues in foods as they are usually eaten.

During Fiscal Year 1987, the FDA's regulatory monitoring program analyzed 14,992 samples, 6,503 produced in this country and 7,989 imported from 79 other countries. Residues were found in 42% of domestic samples and 44% of imported samples, but the levels involved were usually insignificant. Fewer than 1% of the samples contained residues that exceeded regulatory limits, but 81% of these were cases in which no tolerance had been established for a specific pesticide/commodity combination. These findings were supported by the Total Diet Study data, which showed that the dietary intake of pesticide residues was only a small fraction of acceptable limits.

Free copies of the FDA's report, *Residues in Foods—1987* are available on request from Norma J. Yess, HFF-420, FDA Division of Contaminants Chemistry, 200 C St., S.W., Washington, DC 20204.

BRIEFS

What's in a name? Currently, ice cream must contain at least 10% milkfat, while ice-cream products with 2-7% milkfat must be called "ice milk." Public Voice has petitioned the FDA to create a new standard for a "lite ice cream," which would be similar to ice cream but would contain 4-6% milkfat, while the name "ice milk" would be reserved for products containing less than 4% fat. (Whole milk contains 3.25% fat). Recently, in response to a Public Voice petition, the U.S. Department of Agriculture agreed to change the name of the lower-fat "good" grade of beef to "select."

FDA regulatory activity increased. According to a recent statement by NNFA attorney Scott Bass in *Health Foods Business*, the FDA has issued more regulatory letters and made more seizures involving health food industry products during the past year than during the previous six years. These actions charge that products are misbranded or are being marketed with illegal therapeutic claims. The products have included evening primrose oil, black currant oil, fish

oils, orotates, germanium, coenzyme Q₁₀, garlic, wheat grass and superoxide dismutase (SOD).

Drinking age raised. All 50 states now require that a person be at least 21 years old before buying or consuming alcoholic beverages. The impetus for this—in some states—was passage of the National Drinking Age Act (1984), which forced state officials to meet this standard or lose federal highway funds. Figures from a 13-state survey taken between 1975 and 1982 by the National Highway Traffic Safety Administration indicate that fatal accidents involving drivers under 21 years of age fell 13% after those states raised the drinking age to 21.

"Safe food" petition. Ralph Nader, former Senator George McGovern, and Americans for Safe Food (ASF) have launched a "safe food petition drive" calling for government promotion of food grown without the use of pesticides and synthetic fertilizers. The drive seeks to gather at least

250,000 signatures by early 1989 calling for "organic food" standards, help for "organic" farmers, taxes on farm chemicals to pay for low-chemical farming, and efforts by food retailers to test food for chemicals and bacteria. ASF, a coalition of over 80 groups, is a project of the Center for Science in the Public Interest (CSPI). CSPI has also published a guide to 85 "organic food" mail-order suppliers.

"Organic" certification laws. Although "organically grown" foods are not significantly different from conventionally grown foods, eleven states have established legal criteria for "organic" foods and six additional states are considering certification laws.

True believers. The degree of irrational belief related to nutrition that people can hold is illustrated in the January 1989 issue of *Bestways* (a health food magazine). One woman described how a clinical ecologist has been treating her for four years after telling her she was "allergic to all foods." Another woman said she had started the Coalition Against Sugar Abuse to educate the public about hypoglycemia, which she had gotten because she "wasn't absorbing anything" she ate.

Naturopath arrested. Gregory E. Caplinger of Blowing Rock, North Carolina, has been charged with practicing medicine without a license. According to local press reports, Caplinger claims to be a naturopath and has framed certificates from the N.C. Board of Naturopathic Physicians (although no such board exists), the American Nutritional Medical Association, the British Guild of Drugless Practitioners, and 20 other questionable sources. Caplinger told a reporter that his clinic has been operating for about four years and has treated more than 2,000 people.

Health food group wants nutrition center. The National Nutritional Foods Association (NNFA), the major trade organization for health food manufacturers, distributors and retailers, has announced plans to press for creation of a federal agency called the National Center for Nutrition and Health. The new agency would be responsible for setting standards and protocols for research into the role of nutrition in health, including the relationship between the consumption of specific nutrients and the occurrence or non-occurrence of disease. It would also operate a clearinghouse for research, disseminate information to professionals and the general public, and present nutrition and health information to government policymakers. The idea's originator, Richard Merriam of Global Marketing Associates (a germanium distributor) believes that establishment of such a center will gain "official recognition" of the health food industry from the federal government. NNFA plans to have bills introduced into both houses of Congress on or about March 1st. It also plans to distribute samples of natural food products with a questionnaire asking Congressmen where they receive information on nutrition and health.

NNFA petition denied. On October 14, 1988, the FDA denied a petition by the National Nutritional Foods Association to end FDA's program of collection reports of adverse reactions to vitamins and minerals.

"Organic" promoter honored. Garth Youngberg has been named a recipient of a \$150,000+ MacArthur Foundation fellowship award. He is a former U.S. Department of Agriculture official who promoted organic farming when he was with the agency. Since 1981 he has been executive director of the Institute for Alternative Agriculture, a nonprofit organization established "to encourage and facilitate low-cost, resource-conserving, and environmentally sound farming methods."

Advertising rule amended. The Federal Trade Commission has voted 3-2 to amend its Food Store Advertising Rule to permit grocers to offer rainchecks or comparable substitutes when they run out of advertised items. Compliance can also be achieved by advertising that items are available only in limited quantities or only at some stores. The current rule, adopted in 1971, required grocers to stock advertised items in sufficient quantities to meet reasonably anticipated demand. The purpose of the rule is to prevent grocers from luring customers by offering bargains that are actually not available or available in such small quantities that very few customers can obtain them.

Classic text revised. The fourth edition of the college textbook *Consumer Health—A Guide to Intelligent Decisions*, by Harold Cornacchia, Ed.D., and Stephen Barrett, M.D., had just been published by Times Mirror/Mosby (St. Louis). The 570-page book contains extensive information about nutrition and nutrition quackery. The book is available for \$28.95 postpaid from LVCAHF, P.O. Box 1747-N, Allentown, PA 18105.

Vitamin scams. Consumer protection officials in several states have warned consumers to be wary of expensive-sounding "gifts" or "prizes" offered in connection with vitamin sales. The typical sales pitch begins with a letter, post card or phone call announcing that the recipient has won one of several prizes or is entitled to a gift. To actually get the award, the recipient must pay several hundreds or even thousands of dollars for vitamins, using a credit card or paying for a COD delivery. Consumers have been offered such items as \$2,500 in cash, a fur coat, a new truck, or a 1988 Cadillac Seville. However, they either receive nothing or get the vitamins plus an item that is either worthless or worth far less than the cost of the vitamins. For example, a "Yamaha electric organ" turned out to be a 12" battery-powered toy.

Vitamin production. General Nutrition Corporation's latest mail-order catalog states that the company produces more vitamins than any other organization in the world: 6 billion tablets and capsules a year.

Nasal B₁₂ seized. In October 1988, a quantity of Ener-B was seized at Nature's Bounty, Bohemia, New York, on charges that the product was being illegally marketed. The product is a vitamin B₁₂ gel administered inside the nose, from which it is absorbed into the body. It was marketed with misleading claims that B₁₂ is "hard-to-get" and that "nutritional authorities have described vitamin B₁₂ as having the ability to restore or increase energy levels." In February

1987, a few months after marketing began, the FDA notified Nature's Bounty that Ener-B is an unapproved new drug that is illegal to market without agency approval. The company, which claimed it is a food, then petitioned the FDA to issue a regulation or guideline relating to food classification and methods of consumption and to refrain from enforcement action until the matter was resolved [NF 4:61]. In May 1988, the FDA denied the petition, noting that: 1) it knew of no food that is eaten through the nose; 2) people who eat normal diets don't need B₁₂ supplementation; and 3) claims for Ener-B suggested that it was intended for use as a drug.

Super carrot. The United States Agriculture Department's Agricultural Research Service has announced development of Super Carrot, a new carrot variety which contains 3-5 times the usual amount of beta-carotene.

Vitamins and birth defects. An epidemiological study has concluded that mothers who used vitamin supplements from three months before conception through the first three months of pregnancy gave birth to fewer infants with spinal bifida and other malformations of the nervous system [*JAMA* 260:3141-3145, 1988]. However, the authors cautioned that it is not yet possible to say whether this difference is the direct result of vitamin use or the result of other characteristics (such as a more healthy life-style) of women who use multivitamins. A randomized trial to test this is under way in Great Britain. Reprints of the study can be obtained from Joseph Mulinare, M.D., Division of Birth Defects and Devel-

opmental Disabilities, Centers for Disease Control, Atlanta, GA 30333.

Diet scam snuffed. The Iowa Attorney General has secured a consent judgment which it says will lead to the return of close to one million dollars to 28,000 consumers nationwide who responded to mailings for Neutralizer G.H. diet pills. The 4-page solicitation entitled "Obesity Eliminated in 1988" had represented that the pills would cause effortless and permanent weight loss. The defendants in the case were Austral Eagle Services, Ltd., also known as Calex and Pharmacal America, a Bermuda corporation owned by Irwin Dickstein a.k.a. Rudolph Klein. The defendants must pay \$18,000 to the Attorney General's Office and are permanently enjoined from claiming: 1) Neutralizer G.H. or any similar product can eliminate dieting, calorie counting, and strenuous exercise; 2) any such product can render calories fat-free; or 3) medical science has isolated the hormones that tell your body whether to be fat or thin. The Attorney General's action was brought under the Iowa Consumer Fraud Act.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

NUTRITION

Forum

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NUTRITION, CHOLESTEROL AND HEART DISEASE PART II: STRUCTURE AND FUNCTIONS OF LIPOPROTEINS

Mark A. Kantor, Ph.D.

Last issue we discussed the risk factors for coronary heart disease, one of which is the blood cholesterol level. The cholesterol level in blood plasma (the fluid part of the blood) is determined partly by heredity and partly by the overall content of the diet. Other factors such as obesity and exercise level can also play a role. This article describes what happens to cholesterol within the body.

How Cholesterol Is Packaged

Cholesterol is found only in foods of animal origin and is part of every animal cell. It is essential to life, as the body uses cholesterol to make cell membranes, hormones, and bile acids, as well as for other functions. Because cholesterol is a fat-like substance and cannot mix with water, the body wraps it into protein-containing packages that can flow smoothly throughout the blood stream. These packages are called lipoproteins.

Lipoproteins are composed of various amounts of cholesterol, triglycerides (fats), phospholipids, and special proteins called apolipoproteins or apoproteins. They have two main sections: a hydrophobic ("water-hating") inner core and a hydrophilic ("water-loving") surface coat. The inner core is composed of triglycerides and cholesterol esters (cholesterol attached to fatty acids), while the surface layer is composed of phospholipids, free cholesterol, and apoproteins.

The phospholipids, and to some extent the apoproteins, serve as "detergents," enabling lipoprotein particles to remain suspended in the blood. The apoproteins serve three other functions as well: they impart stability to the lipoproteins, assist various metabolic reactions involving lipoproteins, and direct lipoproteins to specific cells and organs.

Apoproteins are designated by letter-number names, e.g., A-I, A-II, B-48, B-100, C-I, C-II. Evidence is accumulating that the levels of certain apoproteins in the blood stream may provide a better indication of coronary heart disease (CHD) risk than the concentrations of the entire lipoproteins. Thus apo A-I and apo A-II appear to protect against CHD, while apos B-48 and B-100 increase the risk.

Plasma lipoproteins are classified according to their density, with four major types generally recognized: chylomicrons, very-low-density lipoproteins (VLDL), low-density lipoproteins (LDL), and high-density lipoproteins (HDL). A fifth category called intermediate-density lipoproteins is also acknowledged, but some researchers consider IDL to be transitional particles rather than a discrete class of lipoproteins.

The density of lipoproteins varies according to their relative proportions of triglycerides and protein. The greater the amount of triglycerides and the lower the protein content, the lower the density.

One of the remarkable features of lipoproteins is that they are not static particles. Their composition continuously changes as they gain or lose some of their surface and core components, which are not tightly bound. In fact, during the normal metabolism of lipoproteins, one type (VLDL) is actually transformed into another type through the loss of surface and core materials and the action of certain enzymes.

Chylomicrons

Chylomicrons are the largest lipoproteins and have the lowest density. They are the chief vehicles for transporting dietary fat and cholesterol from the intestine to the rest of the body. Chylomicrons are necessary not only for the normal absorption of fat and cholesterol through the small intestine, but also for the absorption of fat-soluble vitamins.

After forming in the small intestine, chylomicrons pass through the villi of the intestinal wall, enter the lymphatic system, and then enter the general circulation. The triglycerides in chylomicrons are broken down by lipoprotein lipase (LPL), an enzyme bound to capillary cells of muscle and fatty tissue. The fatty acids released by this reaction enter nearby cells, where they are either oxidized for energy or converted back to triglycerides and stored for later use.

The LPL reaction removes most of the triglycerides from chylomicrons. Some of the surface phospholipids and apoproteins are also lost as the chylomicrons shrink. The

resulting "remnant" particles, which are high in cholesterol, are taken up by the liver. There, the cholesterol is either repackaged with triglycerides into VLDL or secreted into the small intestine, usually after being converted into bile acids. Much of the cholesterol and bile acids is reabsorbed through the intestine, enters the blood stream, and is returned to the liver in a process called the enterohepatic cycle. But about 5% escapes and is excreted in the feces during each cycle. It has been hypothesized that soluble dietary fiber enhances this excretion mechanism.

Chylomicrons disappear from the blood stream soon after being formed. The number of circulating particles is halved every 5–10 minutes. Within about an hour, virtually all have disappeared. Some chylomicron remnants may persist in the circulation for up to 12 hours, but these usually make no significant contribution to an individual's total blood cholesterol level.

Very-Low-Density Lipoproteins

VLDL usually contain 10–20% of the total serum cholesterol, depending upon a person's age and gender. They are produced by the liver, using fatty acids and cholesterol as the raw materials. The triglycerides in VLDL are synthesized by the liver from dietary carbohydrate and fat, while the cholesterol normally comes from chylomicron remnants. However, if the dietary intake of cholesterol is too low to satisfy the

liver's demand for cholesterol, the liver makes more by increasing the activity of HMG CoA reductase, the enzyme which controls the rate of cholesterol synthesis in the body. While almost every human cell has the ability to make cholesterol, most of it is made in the liver.

During the fasting state, VLDL are the major triglyceride-carrying lipoproteins in the blood stream. Therefore, the triglyceride level reported from a fasting blood test provides a good indication of how much VLDL is circulating.

Lipoprotein lipase, the enzyme that breaks down triglycerides in chylomicrons, is also responsible for breaking down the VLDL triglycerides. As the triglyceride core of VLDL is depleted by the action of LPL, the VLDL shrink and are transformed into intermediate-density lipoproteins (IDL), which are sometimes called VLDL remnants. Soon after being formed, some IDL particles are taken up by the liver and rapidly broken down. Those remaining in the circulation interact with nearby HDL particles, pick up large amounts of cholesterol esters, and eventually become transformed into LDL. Thus, most of the LDL in the circulation comes from the transformation of VLDL.

Low-Density Lipoproteins

Low-density lipoproteins contain about 60–70% of the cholesterol carried in the blood stream. Therefore, when a blood test indicates that total cholesterol is high, this usually

CHEMICAL COMPOSITION OF PLASMA LIPOPROTEINS (Percent Weight)

	Triglyceride	Cholesterol	Phospholipid	Protein	Major Apoproteins
Chylomicrons	90	5	3	2	A-I, A-IV, B-48, C-I, C-II, C-III
Very-low-density lipoproteins (VLDL)	60	12	18	10	B-100, C-I, C-II, C-III, E
Intermediate-density lipoproteins (IDL)	40	30	20	10	B-100, E
Low-density lipoproteins (LDL)	10	50	15	25	B-100
High-density lipoproteins (LDL)	5	20	25	50	A-I, A-II

The cholesterol in lipoproteins exists either as cholesterol esters or free cholesterol. Cholesterol esters and triglycerides are found in the core of lipoproteins, while free cholesterol, phospholipids and proteins (apoproteins) comprise the surface. IDL are sometimes considered transitional particles rather than a separate class of lipoproteins.

means that LDL is undesirably high, but some people (most notably endurance athletes) with high total cholesterol levels have high HDL rather than high LDL. Cholesterol has the same structure wherever it is found, but because the cholesterol from LDL tends to accumulate in the arteries as a component of atherosclerotic plaque, LDL is often called "bad cholesterol," while HDL is called "good cholesterol." (Actually, since their cholesterol is identical, it would be more accurate to refer to them as good or bad lipoproteins.)

Each LDL particle consists of about 1,500 cholesterol ester molecules in its oily core, with about 800 molecules of phospholipid, 500 molecules of unesterified cholesterol and one molecule of apoprotein B-100 in its detergent coat.

High-Density Lipoproteins

HDL usually contain 20–30% of the total serum cholesterol. People with high blood levels of HDL have a low risk of developing coronary heart disease, but how HDL provide this protection is not clear. While scientists still don't fully understand the exact role that HDL play in metabolism, they believe their primary function is to transport cholesterol out of the plasma and to the liver, where the cholesterol is either excreted in the feces or synthesized into bile acids. Presumably, this removal of cholesterol from the blood stream helps prevent the formation of atherosclerotic plaque. HDL probably have some ability to remove cholesterol that has already been deposited in plaque.

HDL are synthesized mainly in the liver and the small intestine, but some are made in the plasma from surface material that originally belonged to chylomicrons and VLDL. Researchers have identified two major HDL subfractions, designated as HDL₂ and HDL₃. The HDL₂ particles are larger and contain more lipid and less protein. The HDL₂ subfraction seems more important in providing protection against CHD and also accounts for most of the variability in plasma HDL levels seen in the general population. For example, long-distance runners and other endurance athletes have higher HDL levels than sedentary individuals mainly because their HDL₂ levels are higher. The levels of HDL₃ in athletes and non-exercisers are similar.

Development of Coronary Heart Disease

The development of atherosclerosis can be viewed as having three stages:

Early Stage. Atherosclerosis begins when the layer of endothelial cells (the cells lining the inner surface of an arterial blood vessel) becomes damaged or injured by such factors as high blood pressure or high circulating levels of LDL. As a result, smooth muscle cells beneath the point of injury begin to divide rapidly and bulge into the channel of the blood vessel.

Endothelial cells normally produce a prostaglandin compound called prostacyclin, whose main function is to keep blood flowing smoothly by preventing blood platelets from accumulating inside the blood vessel. When the endothelial cell layer is damaged, production of prostacyclin is also disturbed. This allows platelets to clump together where the injury has

occurred, further impeding the flow of blood. As platelets continue to pile up inside the vessel, they secrete a hormone that stimulates growth of the underlying smooth muscle cells, which further narrows the channel of the blood vessel.

Middle Stage. Circulating LDL particles that flow near the damaged endothelial cells are attacked by white blood cells called monocytes, which become transformed into scavenger cells known as macrophages. The chief function of macrophages is to attack invading cells such as bacteria that pose a threat to the body. But macrophages also ingest LDL and chylomicron remnants. In so doing, the macrophages are transformed into foam cells: large, cholesterol-laden cells that are classic components of atherosclerotic plaque. Macrophages also secrete a growth factor that enhances the proliferation of smooth muscle cells.

Advanced stage. During this stage, additional LDL, foam cells, platelets, collagen, fat, calcium, other minerals, and other cellular debris accumulate inside the artery. Smooth muscle cells in the layer below the endothelium continue to multiply and migrate into the damaged area, further narrowing the channel. The resultant mass of material is called atherosclerotic plaque. Eventually, the deposit may become large enough to cut off the flow of blood and trigger a heart attack.

LDL Regulation

A high level of LDL in the circulation is an absolute requirement for the formation of plaque and subsequent development of atherosclerosis. But what causes an individual to have high LDL levels? There are several possibilities, arising either from increased LDL production or decreased removal from the plasma.

The mystery of how the body regulates plasma LDL was solved by Michael S. Brown, M.D., and Joseph L. Goldstein, M.D., who shared the 1985 Nobel Prize in Medicine for their remarkable research. They discovered that most circulating LDL is removed by specialized cell components called LDL receptors. The great majority of LDL receptors are located on the surface of liver cells, but some are found on cells in the intestine, spleen, and adrenal glands.

LDL receptors work by attracting and binding to apoprotein B-100 on the surface of LDL. After LDL becomes bound to a receptor, it enters the cell where an enzyme-rich structure (lysosome) breaks it down to release its cholesterol. The cell then uses this cholesterol to make membranes, steroid hormones, or other substances.

If too much cholesterol accumulates in the cell, three events can take place: 1) The excess may be esterified and stored in the cell; 2) the cell's own synthesis of cholesterol may be shut off through the inhibition of HMG CoA reductase; or 3) the genes responsible for synthesizing LDL receptors may be switched off. Consequently, fewer LDL receptors will be made, and less LDL will be taken into the cell. These mechanisms enable a cell to regulate its supply of cholesterol.

In addition to taking LDL out of the circulation, LDL receptors also remove IDL. Thus, a lack of LDL receptors slows the removal of IDL by the liver and enables more IDL to be converted to LDL.

One important way that LDL levels are influenced is through diet. Certain dietary components may raise or lower

LDL levels by decreasing or increasing the number of LDL receptors. A deficiency in LDL receptors can also be inherited, as occurs in familial hypercholesterolemia (FH). This disease varies in severity, depending on whether one or both parents pass on a defective gene. When both parents are transmitters, which is rare, the offspring will have few or no LDL receptors. Victims of this condition (homozygous FH) have cholesterol levels about four times higher than average and a high incidence of heart attacks during childhood.

In the more common form of the disease, only one mutant gene is inherited (heterozygous FH). Individuals afflicted with this condition have plasma LDL levels about twice the normal value and usually begin having heart attacks by the

age of 35. Such cases occur in about one of every 500 people in most ethnic groups. There are also other genetic types of hyperlipidemia characterized by various defects in lipid and lipoprotein metabolism.

In the next issue we will discuss how diet affects plasma cholesterol levels.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service, and a regional communicator for the Institute of Food Technologists. His postdoctoral research was in cholesterol and lipoprotein metabolism.

BRIEFS

Food allergy brochure. The International Life Sciences Institute-Nutrition Foundation, with help from the American Academy of Allergy and Immunology, has produced an attractive brochure on food allergies. A free copy can be obtained by sending a self-addressed stamped envelope to Karen Taylor, ILSI- NF, 1126 16th St., N.W., Suite 300, Washington, DC 20036.

Stuart Berger's theory attacked. The New York Academy of Medicine has blasted cytotoxic testing and the theory in *Dr. Berger's Immune Power Diet* that obesity is related to food allergy. In a position statement, the Academy has concluded: 1) cytotoxic testing remains unproved and misleading with respect to the diagnosis of food allergy; 2) since the results of this test do not correlate with the presence of absence of food allergy, reliance on it may result in a dangerous allergic reaction in allergic individuals or in unnecessary food deprivation in the nonallergic; 3) there is no scientific basis for the claim that obesity can result from binging on foods to which one is allergic; and 4) there is no evidence that cytotoxic testing is of any use in the diagnosis or treatment of obesity [*Bulletin of the New York Academy of Medicine* 64(1):117-120, 1988]. Cytotoxic testing involves adding a suspension of a patient's white blood cells to slides containing dried food extract and examining them under a microscope to see whether the cells deteriorate. All attempts to confirm the validity of this test in controlled studies have failed.

Nutrition monitoring vetoed. Before leaving office, President Reagan vetoed the National Nutrition Monitoring and Research Act of 1988, a bill intended to ensure more complete information while reducing duplication of efforts among government agencies studying the eating habits of Americans. The bill had passed the U.S. House of Representatives by a vote of 331-84 and passed in the Senate by voice vote during October. The legislation has been reintroduced as S 253 and HR 677 in the current Congressional session.

Discrimination against vegetarians. According to an article in *Vegetarian Times*, laboratories that use experimental animals are being warned not to hire vegetarians because they may turn out to be animal-rights activists seeking to document conditions of abuse or cause other difficulty.

Health food store sales. *Health Foods Business'* annual survey estimates that during 1988 there were about 7,200 health food stores with total sales of \$2.98 billion. Included in this figure were \$894 million for vitamins and supplements; \$265 million for herbal products, including teas; and \$6 million for books. These figures were considerably above those from the magazine's 1987 survey, but were in line with previous surveys, suggesting that the 1987 figures resulted from unrepresentative sampling rather than a sharp drop in sales.

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Vitamin scams proliferating. The Florida Division of Consumer Services has received complaints on over 200 companies that have been sending out "prize" announcements as a come-on for overpriced vitamins. The same promotional technique is also being used to sell water purification systems with exaggerated claims.

Rent a goat? The Supreme Court of Virginia has ruled that an arrangement under which people bought partial ownership in a goat still violated a state regulation forbidding the sale of unpasteurized milk. In 1983, the court had ruled that the regulation prevented Christine Solem from "renting" one of her goats for \$3/day in return for the "by-products" of that goat. She then began selling 24% interests in her goats which, upon payment of a \$3/day "maintenance" fee, entitled the purchaser to a gallon of milk each day. Although a lower court ruled in Solem's favor, the Supreme Court reasoned that the maintenance fee was "nothing more than a sham for payment" for each gallon of milk received. The sale of raw milk is illegal within 25 states and in interstate commerce.

"Nutrition" school denied accreditation. The National Home Study Council has denied accreditation to the National Institute of Nutrition Education (NINE), a correspondence school intended to provide credentials for health food retailers. Founded by the National Nutritional Foods Association, the school offers a course leading to designation as a "Certified Nutritional Counselor."

Campbell's—in the soup? The Federal Trade Commission has issued an administrative complaint charging Campbell Soup Co. with making deceptive and unsubstantiated claims. As part of its "Soup is Good Food" campaign, the company has been advertising that most of its soups are low in fat and cholesterol and that soups—as part of a diet low in fat and cholesterol—may help reduce the risk of some forms of heart disease. However, according to the FTC complaint, the ads are deceptive because they don't state that the soups are high in sodium and that diets high in sodium can cause problems for some individuals with heart disease. According to trade sources, Campbell controls two-thirds of the \$2.2 billion retail soup market in the United States. The FTC's action was stimulated by a petition filed in February 1988 by the Center for Science in the Public Interest.

What's in a name? The makers of Aids appetite suppressants have spent \$200,000 for package redesign and a new name to shake customer confusion of their product with the disease AIDS. According to an article in *American Medical News*, the change was motivated by a 40% drop in sales. The new product will be called Diet Aids.

Lipid labeling proposed. The Low Cholesterol Consumer Education Act of 1989—introduced in March as S 623 and HR 1441—would require that total fat, saturated fat, and cholesterol content be specified on the label of foods for which comparative claims are made about cholesterol content and vegetable fats.

U.S. food budget. According to data recently released by the U.S. Department of Agriculture, typical American shoppers spent 9.6% of their disposable income for food in 1987, down from 12.5% in 1977, 20% in 1947, and 40% at the turn of the century. If eating out is added, the 1987 total is \$14.3%, down from 16.7% in 1977.

Movie "ads" attacked. The Center for Science in the Public Interest (CSPI) believes that movie-makers should be required to tell their audiences when manufacturers of such items as cigarettes, soft drinks, and beer have paid to have their products shown on screen. CSPI has suggested to federal officials that contracts between film-makers and manufacturers constitute paid advertising that, in the case of cigarettes, may violate federal laws when the films are shown on television. CSPI has also asked state attorneys general to determine whether the undisclosed placement of commercial products in films constitutes deceptive advertising that violates state laws and whether placing ads for cigarettes and alcoholic beverages should be prohibited in films whose target audiences are too young to buy such products legally. CSPI expressed concern because the movie *Bull Durham* included 21 shots of Miller Lite beer, the Marlboro cigarette logo was featured in *Superman II*, and Reese's Pieces and Coors beer appeared repeatedly in *E.T., the Extra-Terrestrial*.

New report on food irradiation. The American Council on Science and Health has issued a 35-page booklet strongly supporting the use of food irradiation. A copy can be obtained by sending \$3 plus a self-addressed, stamped (65¢ postage), 4" x 9½" envelope to ACSH, 1995 Broadway, 16th Floor, New York, NY 10023.

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AARP appoints nutrition advisory board. Apparently in response to criticism by *Consumer Reports* magazine [Oct. 1986] and Dr. Stephen Barrett [NF 3:76-78], the American Association of Retired Persons Pharmacy Service has appointed an advisory board to offer advice and consumer messages about vitamin, mineral, and supplement products. Acting on the board's advice, products with potentially toxic doses of vitamin A were reformulated, misleading product claims were stopped, and a few worthless products (such as Bee Pollen Plus Royal Jelly) were withdrawn from the pharmacy service's catalog. Lecithin, l-lysine, l-tryptophan, bone meal, dolomite, garlic capsules, brewer's yeast, desiccated liver, kelp and alfalfa, and protein tablets and powder are still being sold, but the page listing them contains a disclaimer: "Considerable controversy exists among experts on the merits of the nutritionals listed on this page. We offer quality products such as those as a convenience to our members."

Misleading vitamin ad stopped. Following a complaint by Dr. Stephen Barrett to the National Advertising Division (NAD) of the Council of Better Business Bureaus, E.R. Squibb & Sons has pledged to revise a television commercial for its Theragran-M. The commercial, which showed individuals involved in various energetic activities, had stated: ". . . If only you had more energy. This kind of energy comes from eating a balanced diet with vitamin B-Complex and Biotin—the energy releasers. To be sure you're getting enough energy releasers take Theragran-M high potency multivitamins . . . Unleash your energy." In support of these claims, Squibb's attorney provided chapters from nutrition texts explaining how energy refers to the chemical energy locked in foods. Siding with Dr. Barrett, however, NAD expressed concern that consumers viewing the commercial would understand "energy" to mean the physical energy that enables people to engage in strenuous activities.

SCREWED UP PRIORITIES

Stephen Barrett, M.D.

Self, the only fitness magazine that carries cigarette ads, hit a new high (or low) in its August 1988 issue. Among its 12 pages of cigarette ads was a 4-page spread from R.J. Reynolds that is probably the most conspicuous ad ever published in a magazine.

The four pages were made of cardboard so resilient that it was impossible to riffle through the magazine without landing in the middle of the ad. But the maximum effect would hit readers who began on its first page, which said: "Here's an offer that'll shake you up! See inside. . ." When I turned to the next page, a 3" x 3" octahedron attached to an elastic band was pulled out of its protective slot and unflattened with a loud pop. All this to offer a free T-shirt from Salem cigarettes to smokers at least 21 years old who call 1-800-GET-TEES. The T-shirt pictured a cork popping out of a bottle plus the message: "Salem—the Refreshest." Once out of its slot, the pop-up—which depicted a cork—would dangle outside of the magazine until torn out by the reader.

The magazine's cover story was a 14-page "health-packed report on aging—from 20 to 60," which contained eight articles. The first pictured a 1-year-old girl who would "probably live to 120 healthily and disease-free" by following a personal nutrition plan, using sunscreens, engaging in moderate aerobics, and working out her mind at intellectual fitness clubs. The next five articles covered causes of "face-aging," how to keep skin looking young, "anti-aging" exercises, maintaining body architecture, and determining ideal weight. In these 11½ pages, cigarette smoking got exactly six sentences. The article on skin aging mentioned that smokers get early lines around the lips, and the discussion of ideal weight explained that studies relating longevity to weight need careful interpretation because smokers tend to weigh less and die earlier than nonsmokers.

Then came an article called "The 19 longevity nutrients," which began: "Did you know you're probably running

low on a few key nutrients? Women especially are prone to gaps because of dieting, the Pill, pregnancy, breastfeeding, and menopause all take a bite . . . as do smoking, stress and certain over-the-counter drugs. As a result, your skin, hair, energy levels may be sagging. Even more vital, you're leaving yourself open to three serious threats, heart disease, diabetes, and osteoporosis. The chart zeros in on the 19 vitamins and minerals that commonly come up scarce." The next article, "Eat right, stay young? Put medicine's next 'miracle drugs' on your dinner table tonight," talked about "working longevity nutrients into your diet." A final article, "Life-stretching food moves," was based on the U.S. Dietary Guidelines.

Although the advice on food selection was reasonably accurate, the reasons behind some of the choices were absurd. Women are not at special risk for 19 nutrients, and neither smoking nor "stress" creates any special need for nutrients. Nor is sagging of the skin, hair, or energy levels likely to be due to nutrient deficiency. Suggesting one serving of fruit daily to be sure to get enough boron is idiotic. And advice to "drizzle oil over an E-rich leafy green salad" to ensure an adequate supply of vitamin E is foolish because no case of E-deficiency on a dietary basis has ever been reported in this country.

One final noteworthy message for *Self's* beauty-conscious readers was an ad for Topol, the special toothpaste for "coffee, tea, wine, and tobacco stains."

I find it puzzling that a magazine specializing in health, fitness and beauty can present foods as "miracle drugs" while saying almost nothing about the leading destroyer of all three. Are *Self's* editors ignorant? Or do they care more about tobacco advertising dollars than accuracy?

Dr. Barrett, a practicing psychiatrist and consumer advocate, is co-author/editor of 22 books including *Vitamins and "Health" Foods: The Great American Hustle*.

SURGEON GENERAL ISSUES LENGTHY REPORT

The U.S. Surgeon General has issued a thoroughly referenced 750-page report focused primarily on the relationship of diet and the occurrence of chronic diseases. The report was prepared primarily for policymakers, but states that its lessons can be directly applied to the public. More than 250 experts participated in its preparation or review process.

The report includes chapters on the relationships of diet to coronary heart disease, high blood pressure, cancer, diabetes, obesity, skeletal diseases, dental diseases, kidney diseases, gastrointestinal diseases, infections and immunity, anemia, neurological disorders, behavior, and aging. It also contains chapters on maternal and child nutrition, alcohol use, drug-nutrient interactions, and dietary fads and frauds. The key recommendations are:

ISSUES FOR MOST PEOPLE

Fats and cholesterol: Reduce consumption of fat (especially saturated fat) and cholesterol. Choose foods relatively low in these substances, such as vegetables, fruits, whole grain foods, fish, poultry, lean meats, and low-fat dairy products. Use food preparation methods that add little or no fat.

Energy and weight control: Achieve and maintain a desirable body weight. To do so, choose a dietary pattern in which energy (caloric) intake is consistent with energy expenditure. To reduce energy intake, limit consumption of foods relatively high in calories, fats, and sugars, and minimize alcohol consumption. Increase energy expenditure through regular and sustained physical activity.

Complex carbohydrates and fiber: Increase consumption of whole grain foods and cereal products, vegetables (including dried beans and peas), and fruits.

Sodium: Reduce intake of sodium by choosing foods relatively low in sodium and limiting the amount of salt added in food preparation and at the table.

Alcohol: To reduce the risk for chronic disease, take alcohol only in moderation (no more than two drinks a day), if at all. Avoid drinking any alcohol before or while driving, operating machinery, taking medications, or engaging in any other activity requiring judgment. Avoid drinking alcohol while pregnant.

OTHER ISSUES FOR SOME PEOPLE

Fluoride: Community water systems should contain fluoride at optimal levels for prevention of tooth decay. If such water is not available, use other appropriate sources of fluoride.

Sugars: Those who are particularly vulnerable to dental caries (cavities), especially children, should limit their consumption and frequency of use of foods high in sugars.

Calcium: Adolescent girls and adult women should increase consumption of foods high in calcium, including low-fat dairy products.

Iron: Children, adolescents, and women of childbearing age should be sure to consume foods that are good sources of iron, such as lean meats, fish, certain beans, and iron-enriched cereals and whole grain products. This issue is of special concern for low-income families.

Misinformation Attacked

Regarding dietary fads and frauds, the report notes: "Food faddism in America had its roots in Great Britain, where patent medicines were advertised and sold by everyone from hairdressers to goldsmiths. . . . Today, the patent medicine man has been largely replaced by the highly skilled and organized use of electronic means to promote fraudulent marketing—computers, customized mailing lists, national advertisements, WATS banks of telephone lines, and other mass media. The medium and the details have changed, but the message and goals remain. It is difficult for consumers to evaluate the validity of health claims perpetrated by quacks and faddists."

Regarding supplements, the report states: "Nutrient supplements are usually safe in amounts corresponding to the RDA, but the RDAs are already set to provide maximum benefit consistent with safety. Thus, there is no reason to think that larger doses will improve health in already healthy people, and excess intake can be harmful."

The report also attacked the concepts of "natural vitamins" and "organic" foods and labeled the following as "fraudulent":

Superoxide dismutase (SOD) and nucleic acids (RNA and DNA) as anti-aging remedies;

Bee pollen as a source of youth and health and as an energy pill for athletes;

Lethicin plus vinegar, kelp, and vitamin B₆ for the prevention and cure of heart disease and as a diet aid;

Spirulina and glucomannan as diet aids;

Ginseng as a panacea for many ailments;

Alfalfa tablets for treatment of arthritis;

Aloe vera for treatment of an array of unrelated medical conditions;

Para-aminobenzoic acid (PABA) as an essential or curative nutrient;

Pangamic acid (vitamin B₁₅) as an essential nutrient;

Hair analysis for determination of nutritional status;

Oral chelation products as treatment for heart disease.

In addition to harming its victims, the report notes, nutrition fraud can hurt responsible members of the food industry by reducing consumers' trust of the regular food supply.

Copies of *The Surgeon General's Report on Diet and Health* (1988) [Publ. No. 017-001-00465-1] are available for \$22.00 from the Supt. of Documents, Government Printing Office, Washington, DC 20402. Copies of the report's 79-page *Summary and Recommendations* [Publ. No. 017-001-0466-9] cost \$2.75.

OVERUSE OF B₁₂ SHOTS REPORTED

A study of the records of 1,222 patients at a newly purchased rural satellite clinic revealed that 120 (10%) of them had been receiving vitamin B₁₂ shots on a regular basis, but that only 4 (3%) met accepted criteria for its administration [JAMA 261:1920-1923, 1989]. Interviews with 48 of these patients revealed that they had received the shots for an average (mean) of 9.9 years for 3.3 symptoms, the most common of which were weakness and fatigue. These patients ranged in age from 46 to 96 years, with an average age of 74.4.

After being informed that the appropriate reasons for B₁₂ injections are limited to conditions (such as pernicious anemia) in which B₁₂ absorption from the intestine is impaired, 25 (52%) of these patients agreed to discontinue the injections or to enter a double-blind study to test whether they were actually beneficial. However, 18 patients who were younger (average age 68) and reported greater symptom relief said they would actively seek a physician who would continue to administer the shots.

Noting that the doctor who had ordered the injections was well respected, the researchers speculated that the injections might have been part of an approach whose effective mechanism was emotional support through discussion of personal problems. They concluded: "Our findings suggest that patients who have been receiving [B₁₂] injections without evidence of deficiency will respond favorably to a program to

discontinue them. We believe . . . that explanations must be compatible with the patient's health belief system and must attempt to preserve the credibility of the physician or physicians who originally prescribed the injections." A reprint of the article can be obtained by writing to Larry Lawhorne, M.D., Fayette Medical Clinic, Elm and Church Streets, Fayette, MO 65248.

Editor's comment: The study's authors seem to have bent over backwards to avoid suggesting that most of the patients studied had been mistreated. I believe that treating an emotional problem as physical makes it more difficult for the patient to identify and resolve the underlying cause of the symptoms. Placebo therapy also fosters unhealthy dependence. Some patients may do better with a placebo than with counseling, but I believe it is unfair to divert anyone who might benefit from counseling from the opportunity to have it. I agree with the authors that patients who have received B₁₂ shots for years from a doctor they trust must be educated carefully, particularly because criticism of the previous doctor may cause the patient to distrust and abandon the new doctor. One way to wean patients who might be emotionally dependent on B₁₂ shots is to suggest that they may have received enough and that it would be worth trying to stop them or space them further apart.

HEALTH FOOD INDUSTRY GROUP FORMED TO FIGHT FDA

FDA action against illegally marketed "food supplements" has increased considerably since John M. Taylor became Associate Commissioner for Regulatory Affairs. In fiscal year 1988 the agency's health fraud staff approved 62 regulatory letters and 22 seizures, up from 15 regulatory letters and 7 seizures during the previous fiscal year.

Upset with the large number of recent FDA enforcement actions, supplement manufacturers have formed the Dietary Supplement Coalition, a nonprofit group intended to defend the health food industry and individual companies against product seizures which they believe are beyond what current laws allow.

According to an article in *Whole Foods* magazine, the group is asking retailers to chip in toward its 1989 goal of \$1.5 million. A Coalition leader cited in the article said, "Everyone realizes that the life of an industry is at stake. We will be the most powerful and pragmatic group in the industry." The group plans to issue a "white paper" criticizing FDA enforcement actions based on the concept that various nonvitamin supplements are "unsafe food additives."

According to an ad in *Natural Foods Merchandiser*, members will receive legal support if the FDA "takes regulatory

action with reference to the unsafe food additive issue" but not in defense of drug claims made in literature or packaging. The ad lists seven companies as founding members and invites health food retailers to contact Michael Schwartz for further information. (Schwartz, a naturopath, is president of Michael's Health Products, of San Antonio, Texas.) In December 1987, Schwartz was ordered by the FDA to stop making drug claims in promotional materials for Diab Tabs (for diabetes), Artho Tabs (for arthritis), Manpower (for sexual dysfunction), or other products. Yet his current literature offers "naturopathic programs for every condition" and makes drug claims for more than 20 "nutritional" products, including those cited by the FDA.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

NUTRITION

Forum

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NUTRITION, CHOLESTEROL AND HEART DISEASE PART III: HOW DIET AFFECTS BLOOD CHOLESTEROL LEVELS

Mark A. Kantor, Ph.D.

In the past two issues we have discussed the risk factors for coronary heart disease (one of which is blood cholesterol level) and the structure and function of lipoproteins. This article covers how dietary fats and cholesterol affect the blood cholesterol level.

Types of Dietary Fat

Dietary fat exists mainly in the form of triglycerides, molecules composed of a glycerol "backbone" to which three fatty acids are attached. Fatty acids in food usually contain from 10 to 22 carbon atoms arranged together with their accompanying hydrogen atoms in a straight chain. The carbons are chemically linked to each other by either a single or double bond. If all the chemical bonds are single, the fatty acid retains the maximum number of hydrogen atoms possible and is said to be saturated (with hydrogen atoms). Monounsaturated fatty acids contain one double bond and have two fewer hydrogen atoms than saturated fatty acids of the same chain length. Polyunsaturated fatty acids have two or more double bonds, each of which displaces two hydrogen atoms.

Animal products usually contain a higher percentage of saturated fats than do plant products. At room temperature, most saturated fats are solid, whereas all unsaturated fats are liquid. The chief exceptions to this rule are three tropical oils—coconut, palm, and palm kernel oil—which, despite their plant origin, are highly saturated. Monounsaturated fatty acids are distributed widely in plants, animals, and seafood. Generally, the longer the chain length of a saturated fatty acid, the more solid its texture. That's why coconut oil, which contains some short-chain fatty acids having only six and eight carbon atoms, remains a liquid at room temperature although it is highly saturated.

All food triglycerides are made up of both saturated and unsaturated fatty acids. If the saturated fatty acids predominate, as they do in butter and beef fat, the fat is considered saturated. Hence, butterfat is considered saturated although only two-thirds of its fatty acids are actually saturated. If polyunsaturated fatty acids are present in large amounts—as

they are in corn and safflower oils—the oil is called polyunsaturated. Oils high in monounsaturated and low in saturated fatty acids—as are olive oil, canola (rapeseed) oil, and some margarines—are described as good sources of monounsaturates. The percentages of the different types of fatty acids in common fats, oils, and spreads are shown in the accompanying table.

Saturated vs. Polyunsaturated Fats

Contrary to popular belief, the amount and type of dietary fat eaten—not the amount of cholesterol consumed—have the greatest impact on the blood cholesterol level. In most people, saturated fats raise the plasma cholesterol level, while polyunsaturated fats lower it. Dietary cholesterol also affects the level of blood cholesterol, but to a lesser and more variable extent than does the fat content of the diet.

The effect of dietary fat on blood cholesterol levels was described in an equation developed by Ancel Keys and co-workers more than 30 years ago. They proposed that for every 1% increase in calories coming from saturated fat, the plasma total cholesterol level was increased by about 2.7 mg. In contrast, each 1% increase in calories derived from polyunsaturated fatty acids substituted for saturated fat lowered the plasma cholesterol level by about 1.4 mg. Therefore, saturated fat raised the blood cholesterol level about twice as much as polyunsaturated fat substitution lowered it. The Keys equation assumed that monounsaturated fats had no effect on the blood cholesterol level, but this assumption has been challenged by recent studies showing that monounsaturated fats do have the ability to lower cholesterol.

The decrease in plasma cholesterol levels that occurs when polyunsaturated fats are eaten results from a decrease in both LDL and HDL. Dietary saturated fat, on the other hand, raises both LDL and HDL levels, but LDL is elevated to a relatively greater extent. Therefore, dietary saturated fat is considered to be atherogenic.

The individual fatty acids comprising dietary fats also influence blood cholesterol levels. Whereas lauric (12-carbons), myristic (14-C), and palmitic (16-C) acids increase plasma cholesterol levels, saturated fatty acids having a chain length of

greater than 16 or less than 12 carbon atoms do not appreciably raise the cholesterol level. Short- and medium-chain fatty acids having less than 12 carbon atoms probably are delivered directly to the liver's portal vein without first being packaged into chylomicrons, so these fatty acids have little effect on blood cholesterol levels.

Stearic acid (18-C) recently was found to lower the level of plasma cholesterol when it replaced palmitic acid in the diet, perhaps because stearic acid is metabolized to oleic acid, an 18-C monounsaturated fatty acid. Cocoa butter, a saturated fat containing 35% stearic acid, also does not seem to appreciably affect cholesterol levels. In several dietary feeding studies, cocoa butter increased the plasma cholesterol level by only half the amount expected from the Keys formula.

These findings could have important implications for the food industry. For example, food technologists could formulate margarines that are high in stearic acid, creating products having a more desirable taste and texture than conventional margarines made with vegetable oils. But experts caution that these research results should not be construed as an endorsement for the public to eat more beef and chocolate. Although beef tallow and cocoa butter are relatively high in stearic acid, they also contain substantial amounts of palmitic acid, which does raise blood cholesterol levels. Therefore, the recommendation to eat less red meat and more fish and poultry is still appropriate for people on a cholesterol-lowering diet.

Not only is the type of fat an important determinant of the blood cholesterol level, but the total amount of fat eaten also affects cholesterol metabolism. After a fatty meal, the small intestine secretes large amounts of chylomicrons, which results in the increased production of chylomicron remnants. These remnants are thought to be atherogenic because they are capable of transferring their cholesterol esters to macrophages, transforming these white blood cells into plaque-forming foam cells. Furthermore, because dietary fat is such a concentrated source of calories and is easily converted into body fat, a diet habitually high in total fat increases the likelihood of obesity, which is a risk factor for coronary heart disease (CHD).

Another thing to consider about dietary fat composition is the ratio of polyunsaturated to saturated fatty acids (the P/S ratio). This ratio is sometimes used (mainly by research scientists) to estimate how a diet will affect the blood cholesterol level. For example, a diet having a P/S ratio greater than 2.0 is usually effective in lowering blood cholesterol, while a ratio of less than 0.4 probably will raise the cholesterol level. Unfortunately, the P/S ratio of the typical American diet is about 0.5, which may explain why CHD is so prevalent in the United States.

More recently, discussions of dietary fats have focused on the percentages of calories coming from the different types rather than the P/S ratio. The National Cholesterol Education Program and other health groups recommend that the saturated fat content of the diet should be less than 10% of calories, and less than 7% if previous dietary attempts to lower blood cholesterol levels have failed. The total fat intake should account for less than 30% of the daily calories, while the calories derived from polyunsaturated and monounsaturated fatty acids should be 10% or less and 10–15%, respectively.

Why does the type of fat in the diet affect the blood cholesterol level? Although researchers have shown repeatedly

that substituting polyunsaturated for saturated fat in the diet lowers plasma cholesterol levels in most people—particularly LDL levels—the mechanism remains unclear.

One possibility is that the liver is better able to synthesize VLDL using saturated fatty acids than it can from polyunsaturated fats. Therefore, a diet low in saturated fats

FATTY ACID COMPOSITION OF SELECTED FATS, OILS, SPREADS AND DRESSINGS

	% Saturated	% Mono-unsaturated	% Poly-unsaturated
<i>Fats and Oils</i>			
Beef fat	52	44	4
Canola (rapeseed) oil	7	58	35
Chicken fat	31	47	22
Coconut oil	92	6	2
Corn oil	13	25	62
Cottonseed oil	27	19	54
Lard	41	47	12
Mutton (lamb) fat	49	43	8
Olive oil	14	77	9
Palm kernel oil	86	12	2
Palm oil	51	39	10
Peanut oil	18	48	34
Safflower oil	9	13	78
Salmon oil	20	55	25
Soybean oil	15	24	61
Sunflower oil	11	20	69
Tuna fat	30	29	41
Walnut oil	10	24	66
Wheat germ oil	20	16	64
<i>Spreads and Shortening</i>			
Butter	66	30	4
Mayonnaise (soybean oil)	16	30	54
Mayonnaise (imitation)	18	24	58
Stick margarine (liquid and partially hydrogenated corn oil)	18	51	31
Tub margarine (partially hydrogenated soybean oil)	18	47	35
Shortening (partially hydrogenated soybean and palm oils)	32	53	15

FATTY ACID COMPOSITION OF SELECTED FATS, OILS, SPREADS AND DRESSINGS

	% Saturated	% Mono-unsaturated	% Poly-unsaturated
<i>Salad</i>			
<i>Dressings</i>			
French	24	21	55
French (low-calorie)	14	25	61
Italian	15	24	61
Italian (low-calorie)	14	22	64
Russian	15	24	61
Russian (low-calorie)	16	24	60
Thousand Island	18	24	58
Thousand Island (low-calorie)	16	23	61

might induce the liver to produce less VLDL for transport. Fewer circulating VLDL particles would in turn result in lower LDL levels, since most LDL is derived directly from the breakdown of VLDL. Also, polyunsaturated fats may prevent the formation of VLDL by inhibiting the synthesis of apoprotein-B, one of the components of VLDL.

Another possible mechanism to explain the ability of saturated fat to raise cholesterol levels is that saturated fatty acids may suppress the activity of LDL receptors in the liver or reduce their number. Either of these circumstances would diminish the liver's ability to remove LDL particles from the circulation, leading to an increase in plasma LDL levels. Presumably, polyunsaturated and monounsaturated fatty acids do not affect LDL receptors in this manner. Finally, polyunsaturated fatty acids may help lower blood cholesterol levels by augmenting the excretion of cholesterol and bile acids.

Monounsaturated Fats

For many years, nutritionists have considered monounsaturated fatty acids to have little or no effect on blood cholesterol levels, but recent studies have demonstrated that monounsaturated fats do have the ability to lower cholesterol. In one experiment, 12 male subjects were each fed three different diets containing 40% of calories as fat. In each diet, the type of fat was composed principally of either saturated, monounsaturated, or polyunsaturated fatty acids. All diets were consumed for a period of 4 weeks.

After the subjects consumed the mono- and polyunsaturated fat diets, their average LDL levels were 31 and 30 mg/dl lower, respectively, than values resulting from the saturated fat diet. But while nine of the 12 subjects who ate the polyunsaturated fat diet also had significantly lower HDL levels, only four showed a decrease in HDL after consuming the monounsaturated fat diet. In two subjects, the high-mono

diet actually produced an increase in HDL levels [Journal of Lipid Research 26:194-202, 1985].

This study suggested that monounsaturated fats might have a major advantage over polyunsaturated fats: while polyunsaturated fatty acids lower both LDL and HDL levels, monounsaturated fats selectively decrease LDL levels. Several other research groups have confirmed this finding. In another recent experiment, a diet containing 40% fat—much of it composed of monounsaturated fatty acids—was just as effective in reducing LDL levels as a diet that was very low in fat (20% of calories) and high in carbohydrates. But whereas this low-fat, high-carbohydrate diet also decreased HDL levels, the diet high in monounsaturated fats did not [American Journal of Clinical Nutrition 47:965-969, 1988]. The authors proposed that, over the long run, the increased use of monounsaturated fats may be more acceptable to many people trying to lower their cholesterol levels than the traditional approach of eating a high-fiber, low-fat diet.

In addition to lowering HDL, the excessive use of dietary polyunsaturated fats has generated concern for other reasons. Researchers suspect these fats are capable of suppressing the immune system in experimental animals, possibly increasing the risk of cancer. Also, polyunsaturated fats may promote the formation of highly reactive, cell-damaging compounds called free radicals, which are also linked to cancer. Scientists also are concerned that polyunsaturated fats may increase the risk of gallstone formation, and perhaps adversely alter the composition of cell membranes. Furthermore, during their normal metabolism in the body, polyunsaturated fats may be transformed into a group of compounds called eicosanoids, some of which may exert deleterious effects on the body.

Not only do monounsaturated fats have none of these disadvantages, but they have a long history of safe use in the Mediterranean region. Olive oil has been consumed for thousands of years in Spain, Greece, and Italy, countries that have a lower incidence of both CHD and cancer than the United States. In addition, researchers from Stanford University recently reported that monounsaturated fats may have the ability to lower blood pressure. When the dietary habits of a group of sedentary middle-aged men were examined, the individuals who ate the most monounsaturated fats had the lowest systolic and diastolic blood pressures [JAMA 257:3251-3256, 1987].

The principal monounsaturated fatty acid in food is oleic acid, which has 18 carbon atoms and 1 double bond. Olive oil, composed of about 77% oleic acid, is the major dietary source of this fatty acid. Other good dietary sources of oleic acid include canola (rapeseed) oil, avocado oil, margarines and shortenings made with hydrogenated soybean and hydrogenated cottonseed oils, and peanut oil (see Table).

Canola oil is produced from a hybrid of rapeseed, a member of the mustard family. Because early varieties of rapeseed oil contained erucic acid, a chemical damaging to the heart, they had been banned for use in food in the United States. But canola is a new, low-erucic acid variety of rapeseed, also called LEAR, that was developed in Canada and approved by the FDA in 1985. It is now being marketed by the Procter and Gamble Company as Puritan Oil. Besides being high in monounsaturated and low in saturated fatty acids, it also contains 6% of omega-3 fatty acids, whose benefits will be described in a future article.

In addition to rapeseed, scientists also are genetically manipulating sunflower and safflower seeds to increase the concentration of monounsaturated fatty acids in the oil. When available, these oils will probably be less expensive than olive oil. New studies also are underway to see if the amount of monounsaturated fatty acids in beef and pork can be increased by feeding livestock animals a diet rich in monounsaturated fats.

Dietary Cholesterol

The typical American consumes 350–450 mg of cholesterol per day, all from animal products. Despite advertising claims that imply otherwise, cholesterol is never found in plant products. Scientists are uncertain how much of the cholesterol eaten is actually absorbed by the human intestine, with estimates ranging from 25% to 75%. The body's ability to absorb cholesterol appears to be inversely related to the amount consumed.

Cholesterol that has either been ingested in the diet or synthesized by the body has several possible fates: 1) it may be synthesized into hormones (such as estrogens) or other steroid compounds; 2) it may be taken up by cells and become a part of cell membranes or the myelin sheath of nerve cells; 3) it may be excreted in the stool without prior conversion to bile acids; or 4) it may be converted into bile acids in the liver, which then enter the enterohepatic cycle.

The role of dietary cholesterol in human atherosclerosis is complex and not yet clear. Scientists have long known that omitting cholesterol from the diets of experimental animals markedly reduces the amount of atherosclerosis that develops, but they are not sure why. They suspect that, acting similarly to the action of saturated fat, dietary cholesterol has the ability to suppress the number of LDL receptors in the animal liver, thereby raising the level of LDL in the bloodstream. This mechanism probably operates in humans as well as animals. But dietary cholesterol's ability to elevate blood cholesterol generally is less potent in people than in laboratory animals, and the effect is more variable.

While some human feeding studies have shown that the addition of cholesterol to the diet increases the blood cholesterol level, other studies have not been able to demonstrate this. The data are conflicting because the ability of dietary cholesterol to affect an individual's blood cholesterol level depends on several factors.

One consideration is the total composition of the diet, especially the fat content. Eating saturated fat together with cholesterol seems to potentiate the effect of just eating cholesterol alone.

In addition, some researchers have hypothesized that individuals are either "responders" or "nonresponders" to dietary cholesterol, a trait that is inherited. While responders show a rise in blood cholesterol levels after consuming a diet

rich in cholesterol, nonresponders compensate for any dietary increase by absorbing less cholesterol or synthesizing less. This happens because the synthesis of cholesterol in the liver is controlled by a feedback inhibition process that shuts off cholesterol production when a certain dietary intake is exceeded. Consequently, even when the dietary intake of cholesterol is high, there may be little change in the blood cholesterol level.

But other researchers suggest that when the cholesterol intake is initially low, virtually all people will exhibit a rise in plasma cholesterol if they begin eating a cholesterol-rich diet. This finding has been demonstrated over the years in a number of carefully controlled studies. The results of these investigations suggest that for every 100 mg of dietary cholesterol per 1000 calories consumed in the daily diet, plasma total cholesterol levels rise by about 10 mg/dl. (Values in the literature range from 4 to 12 mg/dl.) Furthermore, even a nonresponder cannot completely compensate for a diet that is habitually high in cholesterol. Such an individual eventually will show a rise in plasma cholesterol, despite the body's attempt to excrete more bile acids or synthesize less cholesterol in the liver.

The ability of dietary cholesterol to affect the blood cholesterol level also may depend upon the range of cholesterol consumed. According to one hypothesis, if a diet initially contains no cholesterol at all, a threshold amount of dietary cholesterol must be exceeded before the plasma cholesterol level will start to rise. For most people, this quantity is about 100 mg/day. As the amount of dietary cholesterol increases above this threshold level, the plasma cholesterol concentration also rises until a "ceiling" level is reached, usually corresponding to a dietary intake of about 300–400 mg of cholesterol per day. Above this amount, eating more cholesterol will produce little if any additional increase in the plasma cholesterol level.

This model may explain why dietary cholesterol failed to increase the plasma cholesterol level in some egg feeding studies. If several egg yolks are added to a diet already high in cholesterol—that is, above the ceiling level—no further increase in the plasma cholesterol level should be expected.

In addition to raising the level of LDL in the blood stream, dietary cholesterol may have other detrimental effects. A diet rich in cholesterol increases the amount of cholesterol esters in chylomicron and VLDL remnants, making these particles more atherogenic. Also, some researchers have suggested that dietary cholesterol can induce the formation of unusual lipoprotein species—new types of lipoproteins that may induce the formation of plaque.

In the next issue, we will discuss how dietary fiber affects blood cholesterol levels.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service, and a regional communicator for the Institute of Food Technologists. His postdoctoral research was in cholesterol and lipoprotein metabolism.

RAW MILK CREAMED IN CALIFORNIA COURT

On April 10, California Superior Court Judge John Sutter ruled that Alta-Dena Certified Dairy and its affiliate Steuve's Natural must stop advertising that their raw milk products are safe and healthier than pasteurized milk. After 54 days of trial with over 800 exhibits, Judge Sutter concluded that "overwhelming evidence . . . proved . . . that Alta-Dena's raw (unpasteurized) milk frequently contains dangerous bacteria that cause serious illness. Pasteurization kills such bacteria. Yet for 35 years, Alta-Dena carried out a false and misleading advertising campaign touting its raw milk now sold under the 'Steuve's Natural' label as 'safe,' the 'safest,' and superior to pasteurized milk."

The judge's decision requires that for 10 years, the company's milk containers must carry a conspicuous warning:

WARNING: THIS MILK MAY CONTAIN DANGEROUS BACTERIA. THOSE FACING THE HIGHEST RISK OF DISEASE OR DEATH INCLUDE BABIES, PREGNANT WOMEN, THE ELDERLY, ALCOHOLICS, THOSE WITH CANCER, AIDS OR REDUCED IMMUNITY, AND THOSE TAKING CORTISONE, ANTIBIOTICS OR ANTACIDS. QUESTIONS REGARDING THE USE OF RAW CERTIFIED MILK SHOULD BE DIRECTED TO YOUR PHYSICIAN.

The judge also ordered that all the company's advertising with health and nutrition claims during the next 10 years must state:

WARNING: THE FOOD AND DRUG ADMINISTRATION (FDA) HAS DETERMINED THAT THERE IS NO SATISFACTORY SCIENTIFIC PROOF TO SUPPORT CLAIMS THAT PASTEURIZATION SIGNIFICANTLY REDUCES THE NUTRITIONAL VALUE OF MILK AND THAT THE RISKS ASSOCIATED WITH CONSUMING RAW CERTIFIED MILK OUTWEIGH ANY OF ITS ALLEGED HEALTH BENEFITS.

The suit was filed in 1985 by Consumers Union, publisher of Consumer Reports, and the American Public Health Association, who quickly won a preliminary injunction against advertising that raw milk is ideal for infants and invalids. Later, the public interest groups were joined by the Alameda County District Attorney, who enforces consumer protection laws.

The judge's 34-page analysis of the case includes the following conclusions based on evidence presented at the trial:

- Steuve's Natural is "certified," which means it is produced under the standards of the Association of Medical Milk Commissions (AAMMC). The only such commission in California is the Los Angeles Milk Commission (LAMC), which regulates Alta-Dena and no other dairy. However, there is considerable evidence that both AAMMC and LAMC are "captives" of Alta-Dena, which pays all or most of their expenses.

- A laboratory hired by LAMC has sampled Steuve's Natural milk and isolated Salmonella dublin bacteria on numerous occasions without either the laboratory or LAMC notifying state authorities of the findings—which would have been legally obligated to prohibit sale or use of the infected milk.

- On more than 40 occasions between 1982 and 1984, Alta-Dena's own laboratories had positive tests for salmonella in its milk but failed to report this to the state. But in 1984, AAMMC and LAMC complied with a request from Alta-Dena to drop the requirement that raw milk be tested for salmonella. In September 1987, the dairy stopped testing for salmonella, citing "costs" as the reason. *Editor's note:* In December 1988, despite the obvious conflicts of interest and LAMC's failure to report previous test results, the California Department of Food and Agriculture transferred its program of testing raw milk to LAMC!]

- Despite ample evidence to the contrary, the dairy advertised that raw milk is "the ideal formula for babies . . . and for the same reason, a basic food for invalids." The dairy continued to promote raw milk for infants despite specific warnings from the California Department of Health. Moreover, long after learning of reports of infant botulism caused by the ingestion of honey, Alta-Dena continued to suggest in advertising that its formula should be made with honey.

- Between 1971 and 1984, 31 people died in California of illnesses associated with raw milk consumption.

- In 1983, Alta-Dena commissioned a panel of experts to evaluate the safety of its raw milk. Although the study confirmed other studies showing that raw milk poses a great risk to immune-deficient people, the dairy did not follow the recommendation of the study's authors to warn about this on its product labels.

The judge's order prohibits Alta-Dena from making more than 40 specific claims related to health, safety, nutrition, and quality control of its products—including whole milk, nonfat milk, cream, butter, buttermilk, kefir, and cottage cheese. The dairy was also ordered to pay \$23,000 to Alameda County as a penalty for false advertising, \$100,000 in restitution to the Attorney General's consumer law section, and plaintiffs' attorney fees, which could be quite high.

Alta-Dena is appealing the judge's decision.

QUESTION BOX

Q. What happens if a person's percentage of body fat becomes very low?

A. Men and women differ with regard to percentage of body fat that would be considered too low. The average man is composed of 12–15% fat, 3% of which is essential, with the remainder being normal storage fat. Women average 22–25% fat, of which 12% is essential and the remainder is normal storage fat. Body fat is needed to cushion vital organs (e.g., heart, liver, spleen, kidneys, etc.), to insulate against heat loss, and to contribute to hormone synthesis. Allowing the percentage of body fat to fall below levels considered essential can result in decreased ability to protect vital organs from damage, decreased adaption to temperature variations, and inadequate hormone synthesis.

BRIEFS

Astrology for weight control? Since September 1988, *Weight Watchers* magazine has carried a "horoscope" column that contains tips and encouragement for dieters. Its words of wisdom have included: "try a wild new recipe" (Taurus); "tempt your taste buds with low-calorie seafood dishes" (Pisces); "join an exercise class and learn new tricks" (Gemini); "let your mate help with your diet—it's easier with support" (Libra); "incorporate an exotic food into your menu" (Aquarius); "vitamin-rich veggies get you through the flu season snuffle-free" (Sagittarius); "the planets bring you an energy boost—use it constructively to reach fitness goals" (Aries); and "though you feel others haven't noticed your weight-loss achievements, a good friend has been singing your praises" (Aries). The magazine also carries cigarette ads.

New hope for diabetics. *Medical World News* has reported that in studies at several centers, about half of 55 insulin-dependent diabetics who received transplants of fetal cells related to insulin production have been able to reduce their insulin dosage.

Light exercise may protect the heart. A 20-year study of 3,043 middle-aged white male railroad workers has found that even light physical activity may protect the heart as well as general health [*Circulation* 79:304-311, 1989]. The project began in the late 1950s when the men were given fitness tests to establish their condition as they entered the study. They were also interviewed about their leisure-time physical activities, which were classified as light, moderate, or intense. The researchers subsequently inquired about the leisure-time activities and compared them to the causes of death among those who died during the study period. It was found that death rates from diseases of the heart and blood vessels were lower for men who expended 1,000 or more calories per week in leisure-time physical activity—the equivalent of 30 minutes a day in a moderately intense activity such as playing softball or weeding the garden. But after taking into account such primary risk factors as smoking, high blood pressure, and elevated blood cholesterol, the researchers concluded that "the greatest increase in protection was between those men who were sedentary and those who had some activity." According to the report, the overall death rate decreased from nearly 30% in those who expended less than 250 calories per week (the equivalent of walking 10 minutes a day at 3 miles per hour on a level surface) to about 25% in the more active men. The authors conclude: "Physical activity appears directly related to the development of coronary heart disease . . . These data show that increasing physical activity, particularly of a light-to-moderate intensity, is appropriate to prevent disease and promote health." Reprints can be obtained from Martha L. Slattery, Ph.D., Dept. of Family and Community Medicine, University of Utah Medical School, 50 N. Medical Drive, Salt Lake City, UT 84132.

Illegal "infant formula" manufacturer prosecuted. In January 1989, Michael J. Potter, president of Eden Foods, became the first person found guilty and sentenced to prison for violating the Infant Formula Act of 1980. In 1983, the company began marketing a soybean product named Edensoy with claims that it was free of cholesterol, rich in iron, and good for babies as a "quality," "easily digested," and "preferred" substitute for mother's milk and was suitable for children who could not tolerate cows' milk or other liquid or powdered formulas. Later that year, FDA investigators informed Potter that his company's promotional claims made Edensoy subject to FDA regulation, that it lacked the minimum levels of vitamins, minerals, and protein specified under the Infant Formula Act, and that it could cause severe malnutrition and even death if used as the only food fed to an infant. According to a report in the May 1989 *FDA Consumer*, although Potter said he would stop promoting Edensoy as an infant formula, FDA investigators continued to find such promotional literature in health food stores, where clerks were advising customers that Edensoy and similar products were suitable for infants. After a Canadian infant raised on Edensoy was hospitalized with rickets and other signs of severe malnutrition, Eden Foods recalled its promotional literature and relabeled Edensoy to emphasize that it was not suitable as an infant formula or as a sole source of nutrition. The company was charged with selling at least 53,482 cartons of the soy drink illegally between July 1983 and June 1985. Potter pleaded guilty to one count of violating the Infant Formula Act and was sentenced to 1 year in prison with all but 30 days suspended. He was also fined \$25,000 and placed on probation for 2 years. Eden Foods, which pleaded guilty on 12 counts, was fined the full \$110,000 permitted under the law.

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AMA cholesterol campaign. The American Medical Association is spearheading a major public education campaign aimed at educating Americans about the risk of high blood cholesterol and showing how to lower that risk. The campaign includes a book (*Count out Cholesterol* by Arthur Ulene, M.D.) and an audiocassette program containing a behavioral program for cholesterol reduction and information about the medical therapies available for treating high blood cholesterol. During the first half of 1989, mass media will be used, including national television programming, a special section in the March issue of *Good Housekeeping* magazine, a ten-city tour by Dr. Ulene, distribution of more than 40 million promotional inserts to American households, and educational displays in thousands of grocery stores. Beginning in April, a 5-week course offering personalized instruction and counseling to people with high blood cholesterol levels is being offered in many communities throughout the country. Physicians interested in participating in the campaign have received kits containing educational and motivational materials. The campaign is co-sponsored by Feeling Fine, the Kellogg Company, Pam (no-stick cooking spray), and Merck, Sharp & Dohme (maker of the cholesterol-lowering drug Mevacor). Pam and Kellogg's cereals are offering five-dollar cholesterol screening rebate coupons on the back of their products. Although not part of the AMA campaign, General Foods Corporation is also offering information and a five-dollar rebate coupon on the back of its Post Oat Flakes.

Court approves feeding tube removal. A Florida appeals court has granted the right to order removal of a feeding tube to the guardian of an 89-year-old woman who was neither brain dead nor comatose. According to an article in *American Medical News*, the woman had suffered a stroke and could neither move nor swallow. But she had specified in a living will that she did not want tube-feeding or any heroic measures done to save her life.

Death caused by hydrogen peroxide. The FDA has reported that last September two children in Texas were severely injured after their mother poured drinks for them from a bottle containing 35% hydrogen peroxide that she thought was water. Another child, who was a neighbor, also was given the highly corrosive peroxide solution and died as a result. Literature sold with the product claimed it could be used for sprouting seeds, purifying meat, and for the treatment of acne, gum disease, athlete's foot, colic, headache, varicose veins, AIDS, and cancer.

Chilean fruit update. On April 14th the FDA ended its requirement that importers of Chilean fruit carry out intensive monitoring triggered by the finding of two cyanide-tainted grapes on March 12th. According to the agency, the amount of cyanide found in the grapes was far below the amount that would sicken a child but was more than is known to be present naturally. Detection of the cyanide followed an anonymous warning to the U.S. Embassy in Santiago, Chile, which was considered likely to be a hoax. But after the tainted grapes were found, the agency ordered all Chilean fruit in the hands of retailers, wholesalers, and importers destroyed and stepped up monitoring of new imports for several weeks.

Notable quote. "If every threat causes flights to be canceled or fruit to be removed from grocery shelves, terrorists and psychotics will soon be able to grind society to a halt . . . The public must recognize that a risk-free society is not only impossible, but intolerably expensive."—Daniel E. Koshland, Jr., in "Scare of the Week," an editorial in the April 7 issue of *Science*.

Sales aids for health food stores. Two of the leading health food industry trade publications publish one-page "consumer education" articles with space on the page for the store's name and address. Most "health food" magazines sell reprints of their articles, and one offers a monthly news summary which retailers can reproduce as a flyer. These publications typically contain false or unproven claims for foods or food supplements that would be illegal in advertising or on a product label. But if the flyers are not used directly in the sale of a product, the claims they make are protected under freedom of the press.

Licensing update. Dietitians have now gained passage of laws to regulate nutritionists in 23 states, Puerto Rico, and the District of Columbia. Some make it illegal for unqualified persons to call themselves dietitians or nutritionists, while others define nutrition practice and who is eligible to do it. Since 1986, the American Dietetic Association has collected 449 case reports of people harmed by inappropriate advice from bogus "nutritionists," health food store operators, and others. Information about licensure and the ADA's Questionable Nutritional Practices System ("QUEST System") is available from Michele Mathieu-Harris, American Dietetic Association, 216 W. Jackson Blvd., Chicago, IL 60606.

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NATIONAL RESEARCH COUNCIL ISSUES MASSIVE REPORT ON DIET AND HEALTH

In the most comprehensive scientific analysis to date of potential health risks and benefits stemming from diet, the Committee on Diet and Health of the National Research Council/National Academy of Sciences has concluded that Americans can substantially reduce their risk of heart disease, cancer, and many other chronic diseases through specific changes in eating habits. The analysis was based on 3 years of study funded by the W.K. Kellogg Foundation, the Henry J. Kaiser Family Foundation, the Pew Charitable Trusts, the Fannie E. Rippel Foundation, Occidental Petroleum Corporation, and the National Research Council Fund.

In preparing its report, the Committee systematically examined competing disease risks from various dietary modifications and sought to balance them in a set of dietary recommendations:

- Reduce total fat consumption to 30% or less of calories, saturated fatty acids to less than 10% of calories, and cholesterol to less than 300 milligrams daily. The intake of fat and cholesterol can be reduced by substituting fish, poultry without skin, lean meats, and low- or nonfat dairy products for fatty meats and whole-milk dairy products; by choosing more vegetables, fruits, cereals, and legumes; and by limiting oils, fats, egg yolks, and fried and other fatty foods.

- Eat five or more daily servings of vegetables and fruits, especially green and yellow vegetables and citrus fruits. Also increase intake of starches and other complex carbohydrates by eating six or more daily servings of a combination of breads, cereals, and legumes. Carbohydrates should total more than 55% of calories.

- Maintain protein intake at moderate levels—approximately the current Recommended Dietary Allowance for protein (0.8 mg/kg of body weight for adults), but not exceeding twice that amount.

- Balance food intake and physical activity to maintain appropriate body weight.

- We do not recommend alcoholic beverages. If you do drink, limit yourself to less than one ounce of pure alcohol daily—equivalent to two cans of beer, two small glasses of wine, or two average cocktails. Pregnant women should avoid alcoholic beverages altogether.

- Limit total daily intake of salt (sodium chloride) to 6 grams or less. Limit the use of salt in cooking and avoid adding it to food at the table. Salty, salt-preserved, and salt-pickled foods should be consumed sparingly.

- Maintain adequate calcium intake.

- Avoid taking dietary supplements in excess of the Recommended Dietary Allowances for one day.

- Maintain an optimal intake of fluoride, particularly during the years of primary and secondary tooth formation and growth.

The Committee cautioned that although data were insufficient to estimate the total percentage of chronic disease that might be avoided by following its recommendations, its suggested reductions in fat and cholesterol could be expected

to reduce the incidence of coronary heart disease by at least 20%. While the percentage of avoidable cancers is also impossible to estimate, the Committee noted that several countries with dietary patterns similar to those recommended by its report have about half the U.S. rates of diet-associated cancers.

Generally, the Committee's recommendations agree with those of other expert panels in the United States and abroad but include more specific quantitative recommendations. Implementing them will require individuals to devote more time and attention to their daily diet and will require professionals to help the public in dietary planning. The Committee expects that the food processing industry, restaurants, and school cafeterias will be required to alter recipes and menus, while government agencies will need to consider changes in food and nutrition programs and policies. However, the Committee noted, U.S. dietary habits are already changing in many ways consistent with its recommendations.

Regarding supplement use, the Committee concluded:

- A large percentage of the U.S. population consumes some vitamin or mineral supplement daily. These supplements are often self-prescribed and not based on known nutrient deficiencies.

- Some population subgroups (such as those suffering from malabsorption syndromes) may require supplements, but they should take them only under professional supervision.

- A single daily dose of a multiple vitamin-mineral supplement containing 100% of the RDA is not known to be harmful or beneficial; however, vitamin-mineral supplements that exceed the RDA and other supplements (such as protein powders, single amino acids, fiber, and lecithin) not only have no known health benefit for the population but their use may be detrimental to health.

- The desirable way for the general public to obtain recommended levels of nutrients is by eating a wide variety of foods.

- It is not known what, if any, benefits or risks accrue to individuals or the general population from taking small doses of supplements.

- It is important for further research to determine whether: 1) long-term supplement use (at both high and low levels) can affect mortality or general health; 2) supplements can help to prevent or treat health problems in the general population or in particular population subgroups; and 3) any population groups might be particularly vulnerable to health risks from the use of supplements. Research is also needed to explore the quality of dietary formulations—including their potency, nutrient balance, nutrient bioavailability, and possible contamination with other substances.

Copies of the final 996-page NRC report, *Diet and Health: Implications for Reducing Chronic Disease Risk*, are available for \$49.95 (prepaid) from the National Academy Press, 2101 Constitution Ave., N.W., Washington, DC 20418.

NUTRITION

Forum

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NUTRITION, CHOLESTEROL AND HEART DISEASE PART IV: THE ROLE OF DIETARY FIBER

Mark A. Kantor, Ph.D.

In previous issues, we have discussed the risk factors for coronary heart disease, the structure and function of lipoproteins, and how dietary fats and cholesterol affect blood cholesterol levels. This article covers how dietary fiber affects blood cholesterol.

Dietary fiber is not a single material but a mixture of chemically complex substances found in plants. All components except one (lignin) that make up dietary fiber are carbohydrates composed of polysaccharide chains—multiple units of sugars and related compounds linked together. Lignin, a three-dimensional network of phenylpropane units derived from several different alcohols, is chiefly responsible for the rigid texture of woody plants.

Definition and Measurement

Because of fiber's heterogeneous nature, scientists have had difficulty defining it. Definitions for fiber have been proposed to take into account both its chemical and biological properties. One common definition based on chemical structure is "the sum of lignin and nonstarch polysaccharides in foods." The nonstarch components are frequently divided into two subgroups, cellulosic fibers and noncellulosic fibers. Cellulose, an unbranched polymer consisting of about 3,000 glucose units, is the main structural component of plant cell walls. The other nonstarch components have side chains and are composed of a variety of polysaccharides.

The chief difference between fiber and other carbohydrates, such as sugar and starch, is that fiber is not appreciably broken down by enzymes and microorganisms in the human digestive tract. This has led to the widely accepted biological definition of dietary fiber: "The plant polysaccharides and lignin that are resistant to hydrolysis (breakdown) by human digestive enzymes."

Until recently, scientists believed that dietary fiber was not degraded at all by intestinal microorganisms. But new research has shown that microbial enzymes can break down certain kinds of fiber, particularly those not made of cellulose. These microbial reactions produce pyruvate, a metabolic

by-product that can be absorbed through the large intestine (colon) and used as an energy source. However, the amount of calories contributed by dietary fiber is negligible.

Developing procedures to accurately measure dietary fiber has been as tricky as defining it. Originally, the fiber content of food was expressed as "crude" fiber. This term refers to the residue after a food sample is exposed to strong acid and alkali. But since this chemical treatment is much harsher than the biological reactions that actually occur during digestion, the crude fiber content of food always is substantially lower than the dietary fiber level.

Because the crude fiber content of food has little nutritional significance, it is no longer widely used (except in animal nutrition). However, some older food composition tables still use this term. Unfortunately, values for dietary fiber cannot be predicted from measurements of crude fiber. A standard method has been developed for measuring the total dietary fiber concentration in food and the amounts coming from its different components. But because of the complexity of the procedure, analytical results from different laboratories often vary. Therefore, even some of the recently published values for dietary fiber may not be consistent. Researchers are continuing to develop simpler and more reproducible procedures for analyzing dietary fiber.

Soluble vs. Insoluble Fiber

Today, dietary fiber frequently is subdivided into two major categories: soluble and insoluble. These subgroups have different chemical, physical, and biological properties.

The substances comprising soluble fiber include pectin, gums (such as guar gum and locust bean gum), mucilages, and some hemicelluloses. Pectin, which is found in many fruits and vegetables (especially the peel of citrus fruits), helps maintain the structure of plants by serving as an "intracellular cement." It also gives fruits the ability to form gels, a property exploited in making jams and jellies.

The other types of soluble fiber help repair injuries to plant cells or serve as stored energy for plants and seeds. As

its name implies, soluble fiber is able to dissolve in water. In the intestines, it soaks up water like a sponge and swells, forming gels.

Insoluble fiber, on the other hand, is unable to dissolve in water but can bind and hold onto water to some extent. Its main role in nature is to maintain the structural integrity of plants. The chief types of insoluble fibers are cellulose, lignin, and nonsoluble hemicelluloses.

Both soluble and insoluble fibers have desirable physiological effects. Insoluble fiber adds moisture and bulk to the stools and increases the rate at which food moves through the colon. This decreases the intestinal "transit time," helping to prevent constipation and diverticulosis, an outpouching of the intestinal wall that can lead to diverticulitis (an inflammation). Some researchers believe that insoluble fiber also may help prevent colon cancer, but this relationship is controversial because of conflicting scientific data.

Soluble fiber has none of the above capabilities but has two very important metabolic functions of its own: 1) it can lower the total amount of cholesterol circulating in the bloodstream, especially the LDL level; and 2) it can help diabetics regulate their blood glucose level and diminish their insulin requirement. (Wheat bran also can do this by delaying the absorption of glucose.) Some studies suggest that soluble fiber can reduce serum triglycerides, especially in diabetics. Both soluble and insoluble fiber can help promote weight loss.

Soluble Fiber and Coronary Heart Disease

The health benefits of soluble fiber now being publicized are not a new discovery. Reports that rolled oats or pectin could reduce serum cholesterol levels and inhibit the development of atherosclerosis began appearing in the scientific literature in the early 1960s. But the current frenzy about oat bran and other sources of soluble fiber—and the rush by food companies to market these ingredients in new products—stems largely from investigations by Dr. James Anderson and his colleagues at the University of Kentucky that began in the 1970s.

In one such study, a group of 20 men with high levels of blood cholesterol (above 260 mg/dl) were given diets containing 17 grams per day of soluble fiber, derived either from oat bran (100 grams/day dry weight) or pinto and navy beans (115 grams/day dry weight). Subjects on the oat diet consumed 1 cup of hot oat bran cereal each day plus five oat bran muffins. Those eating beans were served cooked beans and bean soup. After consuming these high-fiber diets for three weeks, subjects in both groups showed favorable changes in their cholesterol levels. Total cholesterol was reduced by about 19%, while LDL levels decreased by approximately 24%. Although the average HDL levels also decreased slightly in this study, other researchers have shown that HDL usually increases modestly or does not change when subjects increase their soluble fiber intake [American Journal of Clinical Nutrition 40:1146-1155, 1984].

In a similar study by different researchers, a group of middle-aged men and women added 2 ounces daily of either oat bran or oatmeal (to provide 5.6 and 2.7 grams of soluble fiber per day, respectively) to their diets, which already were low in fat and cholesterol. After 6 weeks, subjects in both groups

lowered their plasma cholesterol levels by an additional 5-7 mg/dl beyond the reduction they achieved by just restricting saturated fat and cholesterol. The effects of oat bran and oat meal were similar in this study. Both lowered total blood cholesterol levels by about 3% [Journal of the American Dietetic Association 86:759-764, 1986].

In a follow-up investigation, the same authors found that the inclusion of 2 ounces of oatmeal each day again enhanced the serum cholesterol response in individuals eating diets containing 30% or fewer calories as fat. The oatmeal significantly lowered total cholesterol after 4 weeks, with the greatest reduction occurring in individuals who had the highest cholesterol levels to begin with. The authors concluded that a "moderate daily ingestion of oatmeal in combination with a fat-modified diet is a practical and palatable means of lowering serum cholesterol, at least in the short term." Their studies suggest that people who include a bowl of oatmeal or oat bran cereal as part of a nutritionally well-balanced diet should expect to see a decline in blood cholesterol by an additional 3% over what can be achieved on a low-fat, low-cholesterol diet that does not emphasize soluble fiber [Preventive Medicine 17:377-386, 1988].

It is difficult to draw firm conclusions about how soluble fiber affects blood cholesterol levels because the diet studies reported to date have varied in: 1) the sources and amounts of soluble fiber they used; 2) the methods used for analyzing soluble fiber; 3) the age and initial cholesterol levels of their subjects; 4) overall dietary composition; and 5) duration. However, the following are probably true:

- If people eating a typical American diet (37% of calories from fat; cholesterol over 300 mg/day) include 1½ cups of dry oat bran (four 1-ounce servings or 114 grams) in their daily diet, blood cholesterol levels should decline about 20% in one month. The same result should be expected from eating 1/2 cup (4 ounces or 114 grams dry weight) of pinto, navy, or kidney beans. Half a cup of dried beans, peas, or lentils is equivalent in volume to about 1¼ cups of the cooked product. However, some soluble fiber may be lost in the cooking water.

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- Eating smaller portions of oats and beans than described above will produce smaller but still significant reductions in cholesterol levels. For example, Dr. Anderson's group found that 50 grams of oat bran added to the typical diets of college students lowered their cholesterol levels by 12% after 6 weeks. Thus the ability of soluble fiber to reduce cholesterol levels is somewhat dose-dependent.

- The inclusion of oats and beans in a diet moderate in fat (less than 30% of total calories) and cholesterol (under 300 mg/day) will further reduce total and LDL-cholesterol levels, but the change will be more modest than if the diet had been high in fat and cholesterol.

- Most of the cholesterol-lowering effects of soluble fiber can be apparent in 1 month. One 2-year study found little additional reduction beyond what was achieved after 3 weeks.

- Soluble fiber does not seem to significantly affect HDL levels.

- Lentils and most types of beans and peas, canned or dry, also are good sources of soluble fiber (see table). Although fewer data are available on these foods, they probably are effective in lowering blood cholesterol levels.

An equation has been developed to predict the percent decrease in blood cholesterol that can be expected in about 1 month from the daily addition to the diet of a given quantity of oat bran: $\text{PERCENT DECREASE IN TOTAL CHOLESTEROL LEVEL} = 0.156 \times \text{GRAMS OF OAT BRAN PER DAY} + 1.0$ [Western Journal of Medicine 148:299-302, 1988]. However, many researchers feel that more data are needed before equations of this type can be used with confidence. Such equations are difficult to develop because individuals are known to vary in their response to oat bran, and the overall composition of the diet must be taken into account.

Proposed Mechanisms of Action

The mechanism by which soluble fiber lowers plasma cholesterol levels is unclear, but several hypotheses have been proposed. One scenario is that soluble fiber binds to bile acids, causing an increase in bile acid excretion and interrupting the body's ability to reabsorb and reuse bile acids via the enterohepatic cycle. To replenish the lost bile acids, the liver synthesizes new ones from its internal stores of cholesterol. But then, to renew its cholesterol supply, the liver must draw more cholesterol out of the blood stream. It does this by increasing either the number or activity of its LDL receptors, which lowers the amount of LDL in the circulation.

Through this process, soluble fiber may act similarly to the bile acid sequestrant drugs cholestyramine and colestipol, which also lower cholesterol by binding and removing bile

acids. But remedying high blood cholesterol with diet instead of medications offers two major advantages: it eliminates the common problem of side effects that accompany drug usage, and it is much less expensive. Researchers estimate that oat bran costs only one-tenth as much as cholestyramine when used to treat high blood cholesterol over an individual's lifetime.

While oat bran does seem to increase fecal bile acid excretion, other sources of soluble fiber, such as beans, do not. Scientists have proposed two other mechanisms for soluble fiber's ability to lower cholesterol. Some bacteria naturally present in the colon ferment soluble fiber, producing several types of short-chain fatty acids, including acetic, propionic, and butyric acids. These fatty acids may inhibit the production of cholesterol in the liver and therefore reduce the cholesterol concentration in the bloodstream. The other hypothesis is that soluble fiber may prevent dietary cholesterol from being absorbed by "trapping" it and carrying it away in the stool.

Scientists believe that the major cholesterol-lowering component in oats is a water-soluble polysaccharide gum having a chemical structure known as "beta-glucan." Because the amount of beta-glucan varies among different varieties of oats, researchers are planning to screen large numbers of oat varieties to identify those with naturally high levels. These oat varieties could be selectively bred to further enhance their beta-glucan content, or the concentration of beta-glucan could be augmented through genetic engineering. Barley is another good source of beta-glucan.

Corn bran, rice bran, carrots, and several citrus fruits have been investigated recently for their ability to lower cholesterol. While the results have been encouraging, more research is needed on these products before any specific recommendations can be made on their use.

Another source of dietary fiber that has been shown to effectively lower cholesterol is psyllium hydrophilic mucilloid, a type of mucilage derived from husks of the psyllium seed. It contains both soluble and insoluble fibers and is marketed chiefly as a laxative. It is available commercially as Metamucil (Procter and Gamble Co.), Fiberall (Rydelle Laboratories, Inc.), and Serutan (Beecham Products, USA). A recent study found that men eating a typical American high-fat diet (40% of calories from fat) who took about 10 grams of Metamucil each day for 2 months showed a 15% drop in their total cholesterol level (248-211 mg/dl) and a 20% reduction in LDL. [Archives of Internal Medicine 148:292-296, 1988]. Other researchers have found that psyllium produced more moderate decreases in total and LDL-cholesterol levels (about 5% and 8%, respectively) in subjects eating a 30% fat diet. [JAMA 261:3419-3423, 1989]. In both studies, HDL did not change.

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DIETARY FIBER CONTENT OF SELECTED FOODS (GRAMS PER SERVING)

	Total Weight	Total Fiber	Soluble Fiber		Total Weight	Total Fiber	Soluble Fiber
<i>Cereal Products</i>				Pinto beans, canned, 1/2 cup	85	4.34	1.01
All-Bran, 1/3 cup	28	8.61	1.43	Pinto beans, dried, cooked, 1/2 cup	85	5.90	1.84
40% Bran flakes, 2/3 cup	28	4.29	.43	Pinto beans, dried, raw, 1/6 cup	32	6.22	2.39
Corn bran, 2/3 cup	28	22.83	.31	Pork and beans, canned, 1/2 cup	90	3.74	1.84
Corn grits, 3 tbsps	28	.62	.10	White beans, canned, 1/2 cup	90	4.98	1.50
Cornflakes (Kellogg's), 1 cup	28	.44	.13	White beans, dried, cooked, 1/2 cup	90	5.07	1.48
Fiber 1, 1/2 cup	28	11.87	.84	White beans, dried, raw, 1/6 cup	30	5.30	1.31
Graham crackers, 2 2½" squares	28	.67	.33	<i>Other Vegetables</i>			
Grapenuts, 1/4 cup	28	2.82	.83	Asparagus, canned, 1/2 cup	121	2.84	.51
Macaroni, raw, 1/4 cup	21	.63	.34	Beets, canned, 1/2 cup	85	2.21	.68
Oat bran, 1/3 cup	28	4.03	2.01	Broccoli, frozen, 1/2 cup	78	2.18	.98
Product 19, 1 cup	28	1.22	.30	Brussel sprouts, frozen, 1/2 cup	78	3.53	1.42
Puffed rice, 1 cup	14	.18	.05	Cabbage, raw, 1 cup	70	1.46	.55
Puffed wheat, 1 cup	14	1.01	.48	Carrots, raw, 1/2 cup	55	1.76	.84
Rice Krispies, 1 cup	28	.33	.09	Cauliflower, frozen, 1/2 cup	66	1.69	.57
Rolled oats, 1/3 cup	27	2.58	1.33	Corn, canned, whole kernel, 1/2 cup	82	1.52	.20
Saltine crackers, 6	17	.51	.29	Kale, frozen, 1/2 cup	65	2.48	.74
Spaghetti, white, raw, 1/4 cup	21	—	.36	Lettuce, iceberg, 1/2 cup	28	.25	.06
Spaghetti, whole wheat, raw 1/4 cup	21	1.99	.36	Potato, white, raw, 1/2 cup	75	1.49	.77
Special K, 1 cup	28	.89	.16	Spinach, frozen, 1/2 cup	78	1.70	.39
Wheaties, 2/3 cup	28	2.31	.66	Squash, frozen, 1/2 cup	65	.68	.25
White bread, 1 slice	28	.57	.28	Sweet potato, canned, 1/2 cup	98	1.20	.46
White flour, 2½ tbsps	18	.66	.28	Tomato, raw, 1 medium	123	1.02	.17
White rice, raw, 1/6 cup	28	—	.25	<i>Fruits</i>			
Whole wheat bread, 1 slice	28	1.53	.34	Apple, raw, 1 small	138	2.76	.97
Whole wheat flour, 2½ tbsps	19	2.08	.35	Applesauce, unsweetened, canned, 1/2 cup	122	1.96	.76
<i>Legumes</i>				Banana, raw, 1/2 small	57	1.09	.32
Black-eyed peas, canned, 1/2 cup	83	3.21	.35	Grapefruit, Florida yellow, 1/2 medium	118 ¹	1.46	.90
Garbanzo beans, canned, 1/6 cup	40	1.40	.16	Orange, Calif. seedless naval, 1 small	140 ²	1.94	1.13
Green beans, canned, 1/2 cup	68	2.03	.49	Peach, canned, 1/2 cup	122	1.93	.78
Green peas, canned, 1/2 cup	85	3.22	.45	Pear, canned, 1/2 cup	122	3.69	.79
Kidney beans, canned, 1/2 cup	93	5.75	1.45	Pineapple, canned, 1/3 cup	82	1.35	.17
Lentils, dried, cooked, 1/2 cup	99	5.22	.56	Plum, canned, purple, 1/2 cup	125	2.74	1.19
Lentils, dried, raw, 1/6 cup	32	3.66	.38	¹ with refuse, 241 grams ² with refuse, 206 grams			
Lima beans, canned, 1/2 cup	85	3.02	.79				
Navy beans, dried, cooked, 1/2 cup	95	6.78	2.29				

Data supplied by Susan R. Lawrence, M.S., R.D., and James W. Anderson, M.D.; modified from Anderson, J.W. and Bridges, S.R.: Dietary fiber content of selected foods. *American Journal of Clinical Nutrition* 47:440-447, 1988.

Fiber Pills

Nutrition experts generally discourage the use of fiber pills, recommending instead that healthy Americans obtain their fiber from food. The amount of fiber required to lower blood cholesterol levels can be obtained without too much difficulty from the diet. Moreover, fiber supplements have several potential disadvantages: they may inhibit the absorption of certain minerals; they don't provide other nutrients as food does; the long-term effects of using fiber supplements are not known; and they add unnecessary cost to a cholesterol-lowering program. In addition, users may develop a dependency on fiber pills to maintain "regularity."

Food Products

While food manufacturers are capitalizing on the favorable publicity about soluble fiber by introducing new breakfast

cereals, baked goods, and other products made with oat bran, consumers need to realize that the amount of soluble fiber contained in many of these items is too low to positively affect their cholesterol levels. Based on the results of the abovementioned studies, the average person consuming a diet that is reasonably low in saturated fat and cholesterol needs to eat about 35 grams of oat bran or oatmeal every day for 4-6 weeks to lower blood cholesterol by about 3%. A typical serving of most commercially available breakfast cereals, muffins, or cookies falls short of this amount. In addition, some companies have been marketing oat cereals that also are high in saturated fats because they contain tropical oils. Such foods may not be effective in lowering blood cholesterol levels.

In evaluating products, shoppers should check food labels to see if oat bran, rolled oats, or another source of soluble fiber is located near the top of the ingredient list. They also need to be wary of products made with coconut oil or other highly saturated fats. Most important, consumers need to realize that, despite all the encouraging research results, foods

containing oat bran, beans, or other sources of soluble fiber are not "magic bullets." These products should be considered only one part of an overall cholesterol-lowering diet.

Practical Tips

Dr. Anderson and his colleagues at the University of Kentucky suggest that individuals trying to lower their levels of blood cholesterol should include about 5 grams of soluble fiber in their daily diet, while also restricting saturated fat and cholesterol. Thus they suggest eating more than the previously mentioned 35 grams of oatmeal or oat bran per day, which would supply 1½ to 2½ grams of soluble fiber, respectively. This should produce greater than 3% reduction in cholesterol levels.

According to this group's analysis, there are about 2 grams of soluble fiber in 1/3 cup (1 ounce or 28 grams) of dry oat bran, 1/2 cup (1.5 ounces or 43 grams) of dry oatmeal, and 1/2 cup (4 ounces or 114 grams) of cooked dried navy and pinto beans. (Note: Because of differences in methodology, the amount of soluble fiber reported for these and other products, including the foods used in the studies mentioned in this article, varies in the literature.)

Oat bran muffins have become a common way to incorporate oat bran in the diet. Oat bran can also be sprinkled in casseroles or added to baked goods and meat loaf. The goal

of 5 grams of soluble fiber per day can be met by eating a bowl of oat bran or oat meal for breakfast, one or more oat bran muffins for a snack during the day, and half a cup of cooked dried beans—or a bowl of soup made from dried beans—for lunch or dinner. Consumers should be aware that when bran is cooked as a cereal, it absorbs water and swells to a larger volume. For example, when 1/3 cup of oat bran is combined with 1 cup of water, the final product will be about 3/4 cup.

While health professionals agree that most Americans are not meeting the recommended goal of 20–35 grams of total dietary fiber per day, experts warn that people who are not accustomed to eating fiber should increase their intake gradually while also drinking more fluids. A large, sudden increase in fiber consumption may result in abdominal pain, gas, and diarrhea. However, the body seems to adapt to the regular and prolonged consumption of fiber-rich foods, and these symptoms generally subside. But too much fiber can, in rare cases, be dangerous. A diet very high in fiber recently was reported to have caused intestinal obstruction in an elderly man, requiring surgery [New England Journal of Medicine 320:1148, 1989].

In the next issue we will discuss the National Cholesterol Education Program's guidelines for blood cholesterol and the nuts and bolts of constructing a low-fat diet.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service, and a regional communicator for the Institute of Food Technologists. His postdoctoral research was in cholesterol and lipoprotein metabolism.

BRIEFS

Benefit cereal challenged. Procter & Gamble has asked the FDA to stop General Mills from making cholesterol-lowering claims for its Benefit cereal. P&G's complaint stated that "General Mills has simply inserted psyllium, a recognized active ingredient in drug products like Metamucil, into a traditional food vehicle" and made claims for its "food" which the FDA will not permit for psyllium-containing drug products.

Bills would increase fat/cholesterol labeling. The Low Cholesterol Consumer Education Act of 1989 (HR 1441 and S 623) has been introduced by Representative Dan Glickman (D-KS) and Senator Tom Harkin (D-IA). This bill would require foods marketed with comparative claims about cholesterol and vegetable fats to include total fat, saturated fat, and cholesterol contents on their label. Similar bills have been introduced in several state legislatures. In California, for example, two bills would require disclosure of the amounts of fat and cholesterol and would ban "and/or" listing of fats and oils. In New York, a bill would require labels containing a "no cholesterol" claim to reveal the amount of saturated fat in the product. Consumer groups supporting these bills believe that the possibility of having different labeling requirements from state to state will help stimulate passage of a federal law.

FDA attacking illegal "Candida" supplements. The FDA Health Fraud Branch has issued instructions and a sample regulatory letter indicating that it is illegal to market vitamin concoctions intended for the treatment of yeast infections. Products of this type have been promoted by the health food industry for the treatment of "candidiasis hypersensitivity," a fad diagnosis called "speculative and unproven" by the American Academy of Allergy and Immunology [NF 3:14, 3:28, 4:84–85]. A few months ago, the FDA seized a supply of one such product, Cantrol, from its manufacturer, Nature's Way, of Springville, Utah.

Inappropriate treatments banned. The State of Washington Medical Disciplinary Board has ordered Leo J. Bolles, M.D., to stop prescribing thyroid medications and intravenous adrenal cortical steroids unless he diagnoses hypothyroidism or adrenal insufficiency using standard textbook guidelines. He was also ordered to take 150 hours of Board-approved courses in endocrinology and to maintain a file containing the names of all patients with endocrine problems so that their records could be reviewed by the Board. According to the *Townsend Letter for Doctors* (a newsletter sympathetic to unscientific methods), the Board "has been investigating a number of medical practitioners who practice unconventional medicine."

George Stickley retires. George F. Stickley, who founded the George F. Stickley Company in 1975 so he could publish authoritative books about nutrition and personal health, has sold the company to J.B. Lippincott. For more than a decade, Stickley publications provided the literary backbone for antiquackery activity throughout the United States. Lippincott plans to publish revisions of Stickley's most valuable books and to continue *Nutrition Forum* and *Nutrition Clinics* bimonthly. A catalog of Stickley/Lippincott nutritional and dietetic publications is available on request from Marylou O'Connor, J.B. Lippincott Co., East Washington Square, Philadelphia, PA 19105.

Spicy foods and the stomach. Using videoendoscopy, a research team inspected the stomach lining of 12 healthy volunteers who ate four types of meals: 1) a bland meal of unpeppered steak and French fries; 2) a bland meal plus three aspirin tablets; 3) a spicy Mexican meal (30 grams of jalapeno peppers); and 4) a pepperoni pizza. Each meal was served twice on test days for lunch and supper, and each volunteer was tested with all four types of meals with at least 24 hours between each meal type. All but one of the volunteers developed multiple gastric erosions while taking the aspirin regimen, while one or two individuals in the other groups developed single (insignificant) erosions. The researchers concluded that spicy foods do not produce demonstrable damage to the stomach lining of normal individuals [JAMA 260:3473-3475, 1988]. Reprints can be obtained from David Y. Graham, M.D., VA Medical Center, 2002 Holcombe Blvd., Bldg. 1A, Room 612 (111D), Houston, TX 77030.

Nutrition counseling recommended. On May 2, 1989, the U.S. Preventive Services Task Force issued a 294-page *Guide to Clinical Preventive Services* with recommendations about more than 100 interventions for 60 potentially preventable diseases and conditions. The task force, a 20-member nonfederal panel helped by more than 300 expert reviewers, was appointed in 1984 to determine what types of periodic physical examinations, laboratory tests, immunizations, counseling, and other measures are scientifically based and cost-effective. The panel's recommendations are intended to replace the "complete annual physical examination"—a battery of tests that is essentially the same for all patients—with interventions based on age, gender, and other risk factors. Overall, the panel recommended that physicians spend more time counseling patients on healthy living and less time doing routine screening tests. Its nutrition-related recommendations include counseling at appropriate times about: 1) dietary intakes of calories, fat (especially saturated fat), cholesterol, complex carbohydrates (starches), fiber, and sodium; 2) calcium and iron intake for women and adolescent girls; 3) nutritional guidelines during pregnancy; 4) nutritional requirements of infancy and early childhood; 5) safe use of alcohol; 6) appropriate fluoride and sugar intake; and 7) avoidance of baby bottle tooth decay (caused by propping bottles so the teeth remain bathed in milk while the infant sleeps). The report can be obtained for \$19.95 from Williams and Wilkins, P.O. Box 1496, Baltimore, MD 21298-9724 (or call 1-800-638-0672).

Antiquackery video available. Videotapes of *Vitamins and "Health" Foods: The Great American Hustle*, a 2-hour program presented last year by Dr. Stephen Barrett at the California Institute of Technology, are available for \$26 post-paid from Southern California Skeptics, P.O. Box 5523, Pasadena, CA 91107.

GNC resumes dubious advertising. About 2 years ago, faced with regulatory actions by the FDA, FTC, and Postal Service, General Nutrition Corporation sharply curtailed its practice of marketing products with false and misleading claims. However, its current catalog offers: Vitamin for the Hair ("for a thicker, fuller, shinier head of hair"); Time Stress B (for those willing to believe that "In today's hectic world, life's daily routine can rob you of important vitamins and minerals"); Octacosanol ("may speed reaction time . . . and strengthen muscles including the heart"); Memory Booster ("an aid to memory retention and mental alertness"); Coenzyme Q10 ("the energy supplement . . . popular as a cardiovascular supplement"); Cranberry Capsules ("for urinary tract infections"); Prostex ("to relieve the symptoms of benign prostatic hypertrophy"); and Spirulina Tablets ("helps cut your drive to eat").

Helsinki Hair Formula. In response to action by the Pennsylvania Department of Health, General Nutrition Corporation has agreed to stop marketing a "Helsinki formula" hair treatment. The product, which included a shampoo, a conditioner, and a vitamin tablet, had been marketed with false claims that it was a proven treatment for thinning hair and that the vitamin supplement contained "those special nutrients that have been proven helpful in an overall hair-care regimen."

Notable quote. "Regardless of state scope of practice laws, prepaid systems are likely to reject all but the most conservative [chiropractic] modes of dealing with patient problems. DCs who view themselves as holistic physicians, offer nutritional advice, use colonic therapy, and any of the other unconventional therapies will find their coverage rejected out of hand. The notion that prepaid systems should reimburse chiropractors for any services covered under the plan that they are licensed to provide simply will not fly." —from Kranz and Hendrickson: *Chiropractic and the HMO Challenge*, International Chiropractors Association, 1988.

Chiropractor's license suspended. On June 14th, the New Jersey Board of Medical Examiners temporarily suspended the license of Stanley Gutman, a Paramus chiropractor. At a preliminary hearing, Deputy Attorney-General Linda Ershow-Levenberg testified that earlier this year, Gutman had begun distributing brochures advertising himself as a family doctor and saying he would provide "confidential consultation" for cancer, multiple sclerosis, arthritis, heart disease, and other conditions beyond the scope of his license. Subsequently, Gutman offered treatment to an undercover state investigator with "ovarian cancer" and prescribed a diet of warm vegetables, skim milk, and bananas for another investigator who complained of a bleeding ulcer.

BOOK REVIEWS

Title: The 8-Week Cholesterol Cure (1987, 1988)

Author: Robert E. Kowalski

Publisher: Harper & Row, New York

Price: \$17.95

Reviewed by: Charles W. Marshall, Ph.D.

Having had a heart attack and two coronary bypass operations by age 41, medical writer Robert Kowalski began a program that reduced his total blood cholesterol level from 284 mg/dl to 169 mg/dl and increased his "good" HDL-cholesterol considerably. He says that he accomplished this within 8 weeks by: 1) eating a very low-fat (10–20% of calories), high-carbohydrate diet adapted from the American Heart Association's guidelines; 2) eating enough oat bran muffins to maintain a daily soluble fiber intake of 50 grams; and 3) taking gradually increasing doses of niacin (vitamin B₃) until he reached 3,000 mg daily. (The RDA of niacin for men is 16–18 mg.)

Before heralding his program to the world via a book, Kowalski persuaded Dr. Albert Kattus and the Santa Monica Medical Center Cardiac Rehabilitation Center to supervise 20 volunteers with high cholesterol levels for the 8-week program. The 15 who followed the rules were successful. However, nowhere in the original (1987) version of the book does Kowalski mention warning them that medical supervision would be imperative if they continued the niacin treatment.

In writing this book, Mr. Kowalski may have assumed an awesome responsibility. The book has sold over a million copies, and no doubt many of its readers have plunged into his program. Little fault can be found with his diet and oat bran proposals. However, daily intake of 3,000 mg of niacin (a *drug* at that dosage) entails risks.

In his chapter on niacin, Kowalski describes how he encountered favorable reports about niacin "buried in dozens of obscure medical journals" (hardly an apt description of JAMA!) and was puzzled that this information wasn't "widely disseminated by the medical community to patients like me and millions of others who could profit by it." The answer—which he apparently didn't grasp—is that the potential for adverse reactions limits niacin's usefulness.

Kowalski's advice about niacin appears to be based on his review of various scientific reports plus a large dose of personal enthusiasm. Unfortunately, although he lists some of the adverse reactions, he fails to place them in proper perspective. The key references¹⁻³ upon which he bases his advice indicate that only high-risk patients under the age of 60 should be given cholesterol-lowering drugs. But Kowalski encourages almost everyone with 205 mg/dl or higher to use megadose niacin to reach a level of 180–200 mg/dl.

The references also warn that daily doses of 3,000 mg of niacin should be taken only under medical supervision with testing every few months for liver dysfunction and high levels of blood sugar and uric acid. Kowalski's original edition merely suggests that if you decide to include niacin in your program to lower serum cholesterol levels, "be sure to inform your personal physician." The revised (1988) edition says "it's important to work with your physician in your efforts to lower cholesterol levels." However, this warning

may still not be forceful enough to discourage self-medication.

Although Kowalski warns that niacin should not be taken by people who have diabetes, liver abnormalities, peptic ulcer, or gout, he ignores a number of medical reports of serious side effects of megadose niacin, such as heart arrhythmias⁴ and liver damage⁵⁻⁷ that is reversible if detected in time. Rather, he states repeatedly that megadose niacin is a vitamin and is safe for long-term use.

Kowalski's 1987 edition fails to mention the importance of periodic blood tests, although they are recommended in his key references. The 1988 update advises having a single test of liver function after 2 months of niacin therapy and claims that if this is normal, no further testing will ever be needed. The update recommends slow-release niacin and claims that Harvard researcher Frank Sachs, M.D., had prescribed 1,500 mg/day to many patients and found "no side-effects whatever."

Curious about this, I telephoned Dr. Sachs, who told me that slow-release niacin does not produce the side effect of flushing that is common with ordinary niacin. However, he said that 15–20% of his patients develop abnormal elevations of liver enzymes, blood sugar, and/or uric acid levels. For this reason, he tests his patients every 3–4 months.

Kowalski's views about other vitamins reveal considerable ignorance of the scientific literature. In the 1987 edition, he claimed that "no harmful effects have ever been shown in terms of supplementation short of massive amounts." The revised edition lacks this error but still mentions that Kowalski takes a B-complex supplement which I believe contains enough vitamin B₆ to cause toxicity in some users.

Kowalski does do well in his chapters explaining the significance of the various blood lipids, the use of oat bran to help lower cholesterol levels, and how high-dose niacin probably diminishes cholesterol production by the liver. He also provides a sensible diet plan and a chapter on tempting recipes. His dietary program may be helpful, but should not be expected to produce a 40% drop in cholesterol level, as the book's jacket promises. Without niacin, only a 15–20% reduction is likely.

Responsible physicians believe that the prevention and treatment of heart disease should be approached in a comprehensive manner and that self-treatment with niacin is not sensible. A drug should not be considered unless dietary modification is unable to lower the cholesterol level sufficiently. If a drug is appropriate, the choice of the drug should depend on various factors. I believe the analysis is sufficiently complicated that professional help is advisable. I think it would be difficult to write a book that is sufficiently comprehensive for laypersons to design their own cholesterol-reduction program.

In October 1988, 74-year-old Maurice Fishman, of Beachwood, Ohio, filed a class-action suit charging that Kowalski and Harper & Row had "failed to adequately warn . . . of the serious injuries, disabilities and harmful side effects that would result from adherence to the program described in the book." The suit also charged that the program "was not safe, was not without drugs, was not a 'cure' and

was extremely dangerous." According to an article in *The Washington Post*, Fishman was hospitalized for 10 days for hepatitis after following the advice in the 1987 edition. Through its attorney, Harper and Row told the article's author that Fishman's suit is "without merit." It will be interesting to see whether the courts conclude that authors and publishers of health information can be held responsible for the quality of their advice.

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Dr. Marshall, a retired biochemist, is author of *Vitamins & Minerals: Help or Harm?*, which won the American Medical Writers Association's award for best book of 1983 for the general public.

Name: Cholesterol and Children (1988)

Author: Robert E. Kowalski

Publisher: Harper & Row, New York

Price: \$16.95

Reviewed by: Lisa Teresi Harris, R.D.

In this sequel to *The 8-Week Cholesterol Cure*, medical writer Robert Kowalski gives us the program that decreased his 7-year-old son's elevated cholesterol level from 181 to 141 and enabled his chubby daughter to "thin down considerably."

The book outlines the author's blueprint for "A Parent's Guide to Giving Children a Future Free of Heart Disease." Included in the work is a well-documented review of the relationship between elevated cholesterol levels in childhood and the development of heart disease later in life. Kowalski also describes the controversy surrounding cholesterol testing and treatment of children. Exercise, polyunsaturated versus monounsaturated fats, vegetarianism, and omega-3 fatty acids are also discussed.

The foundation of Kowalski's program is a low-fat, low-cholesterol diet, supplemented with 50 grams/day of oat bran. He recommends that children with elevated cholesterol levels have fat limited to 20-25% of calories and consume no more than 200 mg/day of cholesterol in their diet. He stresses gradual changes in eating habits and frankness with children regarding a heart-healthy diet. Tips on shopping with kids, modifying favorite recipes, selecting fast foods, and handling special occasions such as parties are also provided. This type of advice is the book's forte and will be welcomed by many parents.

To the author's credit, he recommends no dietary modifications for children under the age of two. Kowalski

states children should not be given large amounts of vitamins, and thus discourages niacin supplementation, a major recommendation in *The 8-Week Cholesterol Cure*. But the book still contains serious inconsistencies and inaccuracies. For example, while stressing the importance of a balanced diet, Kowalski says he sees no reason not to use vitamin supplements throughout life.

Kowalski claims that a diet of 20% fat is optimal for all children over the age of two. Yet when he discusses the recommendations of the American Heart Association (AHA), the American Academy of Pediatrics (AAP), and the U.S. Dietary Guidelines for Americans, he offers little evidence that this diet is appropriate for children. He also betrays an apparent lack of understanding of basic nutrition by stating incorrectly that "the RDA for each vitamin refers to the minimum amount needed."

When describing the cholesterol-lowering ability of soluble fiber, Kowalski fails to inform readers that the proposed mechanisms are just that—proposed and theoretical. His program for children is based on his experience with his son rather than controlled scientific studies. His dietary recommendations are more restrictive than those of the AHA, which suggests 30% of calories as fat, and the AAP, which suggests 30-40% fat. Also, studies on oat bran have not been conducted with children.

Although many of the ideas presented in *Cholesterol and Children* can help families attempting to change their eating habits, I don't recommend this book as a tool in the battle against cholesterol. I believe that the author has acted prematurely by making dietary recommendations without solid scientific evidence that they are safe and effective for children.

Ms. Harris is editor and publisher of *Current Diet Review*, a bimonthly newsletter that evaluates nutrition books and other publications.

Q. What is BST?

A. BST (bovine somatotropin) is a growth hormone produced naturally in the anterior pituitary gland of cattle. Research has shown that cows bred for increased milk production have higher BST blood levels and that injections of BST stimulate milk production in dairy cattle. (The average dairy cow produces 14,000 pounds of milk a year. BST use can add another 1,500 pounds, enough for about 700 quarts of milk.) Using recombinant DNA technology, scientists have been able to produce BST at a price low enough for commercial use. With BST injections, more milk can be produced with less feed and fewer cows. The cow's appetite increases, but the extra feed consumed is converted to milk rather than body fat. Field studies with BST-injected cows have shown milk increases of 10-15% on only 6-10% more of feed. Because BST is produced naturally by lactating cows, small amounts are found in the milk of untreated cows. BST treatment does not increase these levels. Regardless, BST is a protein that is digested like any other protein in milk and is not biologically active when ingested by humans.

NUTRITION

Forum

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NUTRITION, CHOLESTEROL AND HEART DISEASE PART V: DIETARY MODIFICATION

Mark A. Kantor, Ph.D.

In previous issues, we have discussed the risk factors for coronary heart disease (CHD), the structure and function of lipoproteins, and how dietary fats, cholesterol, and fiber affect blood cholesterol levels. This article describes the goals and guidelines of the National Cholesterol Education Program (NCEP) and how dietary modification can be accomplished.

The NCEP was initiated in November 1985 by the National Heart, Lung, and Blood Institute. It is a cooperative effort involving more than 30 health organizations and government agencies and is modeled after the highly successful National High Blood Pressure Education Program that began in 1972. Its goal is "to reduce the prevalence of elevated blood cholesterol in the United States, and thereby contribute to reducing coronary heart disease morbidity and mortality."

The NCEP is focusing on public education. It urges all adult Americans to have a blood test for cholesterol, to "know their cholesterol number," and to try to lower it if it is too high. To guide medical and nutrition professionals, the NCEP has developed flow charts for assessing cholesterol levels and recommending follow-up action.

Cholesterol Classification

First, an initial screening to determine an individual's total blood cholesterol level is performed by analyzing a nonfasting blood sample. A total cholesterol below 200 mg/dl is considered "desirable" (Table 1). About half of the adults in America fall into this category. These individuals should be given general information about how diet, exercise, and smoking relate to heart disease risk, and be rechecked within 5 years.

A cholesterol between 200 and 239 mg/dl is considered "borderline-high." About 25% of American adults fall within this range. Those who have fewer than two other risk factors for coronary heart disease or definite indication of CHD such as angina or a previous heart attack should start NCEP's Step-One Diet, which limits total fat to 30% of calories and cholesterol to 300 mg/day (Table 2). The risk factors are male gender, family history of premature CHD, cigarette smoking,

high blood pressure, HDL-cholesterol less than 35 mg/dl, diabetes, peripheral artery disease, and obesity (30% excess weight).

Those in the 200-239 range who have at least two risk factors or are known to have CHD should have a lipoprotein analysis to determine their HDL, LDL, and triglyceride levels. This test is performed on a blood sample obtained after an overnight fast of 12-14 hours. (The LDL level is not measured directly but is calculated by subtracting HDL plus one-fifth of the triglyceride level from total cholesterol. The reason for fasting is that triglycerides are influenced by eating.) A lipoprotein profile should also be obtained for those whose screening test result is considered "high"—240 mg/dl or greater. About 25% of adult Americans fall within this range. Because cholesterol values can vary from day to day in a given individual (and laboratory results can also vary), those in the borderline-high or high range should be retested within 1-8 weeks, and the average value used. However, if the two tests are more than 30 mg/dl apart, a third test should be obtained and the average of the three tests used.

TABLE 1: NCEP CLASSIFICATION OF SERUM CHOLESTEROL LEVELS (MG/DL)*

Total Cholesterol	
Under 200	Desirable
200-239	Borderline-High
240 or more	High
LDL-Cholesterol	
Under 130	Desirable
130-159	Borderline-High-Risk
160 or more	High-Risk

*Many scientific publications follow the Systeme International, which expresses cholesterol values in millimoles per liter (mmol/l). To convert mg/dl to mmol/l, multiply by .02586 and round off to the nearest 0.05. Thus, 200 mg/dl would be 5.15 mmol/l, and 130 mg/dl would be 3.35 mmol/l.

The classification for LDL is similar to that for total cholesterol: below 130 mg is considered "desirable," 130–159 is considered "borderline-high-risk," and 160 or more is considered "high-risk" (Table 1). Treatment recommendations are based primarily on LDL levels. Individuals in the desirable range should be given general information about reducing CHD risk and be retested within 5 years. If the LDL level is 130 or above, the patient usually is advised to begin a Step-One Diet. However, if the LDL is extremely high (greater than 225 mg/dl) or the patient has definite CHD, a stricter diet or drug therapy may be initiated.

The HDL level also is helpful in assessing an individual's risk for heart disease. The lower the HDL, the greater the risk. Many people can raise their HDL level by losing weight, quitting smoking, and increasing their physical activity. Unfortunately, the NCEP has not emphasized regular aerobic exercise as an adjunct to diet in improving the lipoprotein profile. Besides helping to lower serum triglycerides and raising HDL levels, exercise can help people lose weight, which, in turn, can help to decrease total cholesterol and LDL levels. For obtaining the maximum benefit, most experts recommend building up to three to four times a week for 30–45 minutes at a pace vigorous enough to produce a training effect on the heart. However, any amount of physical activity—including moderate walking and gardening—may be beneficial. Individuals who have been sedentary or who have CHD should consult a physician before starting an aerobic exercise program.

The NCEP considers dietary treatment the cornerstone of therapy to reduce elevated cholesterol levels. If a Step-One Diet does not succeed in lowering the LDL level below 130 mg/dl, the more rigorous Step-Two Diet containing fewer than 7% of calories from saturated fat and under 200 mg/day of cholesterol should be used. If all dietary attempts fail to correct elevated LDL levels within about 6 months, then drug therapy should be considered in addition to diet.

The primary goal of dietary therapy is to maintain an LDL level below 130 mg/dl. The underlying assumption is that this will help prevent heart attacks by inhibiting the growth and development of atherosclerotic plaque and may reduce the amount of plaque already present. While scientists have never proven that lowering serum cholesterol through diet will shrink plaque deposits, this has been demonstrated with the help of drugs. In the Cholesterol-Lowering Atherosclerosis Study (CLAS), a 22%-fat diet plus niacin and colestipol (a bile

acid-binding resin) were used by 80 middle-aged men who had undergone coronary bypass surgery [JAMA 257:3233–3240, 1987]. During a 2-year period, their average LDL level dropped from 171 to 97, and arteriography demonstrated that most had held their ground and some had undergone improvement in their coronary arteries. If diet alone can improve lipid levels sufficiently, plaque regression may well occur.

The cholesterol level of the average American adult is between 210 and 220 mg/dl. Using NCEP criteria and lipid levels from the 1976–1980 National Health and Nutrition Examination Survey (NHANES II), government experts have estimated that about 60 million Americans aged 20 years and older are candidates for medical advice and intervention [JAMA 262:45–52, 1989]. The cost of such intervention would be many billions of dollars.

The NCEP recommendations are based mainly on studies of middle-aged men. Comparable data are not available for women (who are less likely to develop CHD). Although major studies have shown that the incidence of heart attacks is decreased by improving blood cholesterol levels, no increase in longevity has ever been demonstrated. However, supporters of the NCEP protocols suggest that an overall benefit from lowering blood cholesterol levels will be demonstrated eventually and that there appears little risk in making the suggested dietary modifications. Many experts have advised caution in applying NCEP's guidelines too aggressively to elderly individuals until more data can demonstrate that the benefits of following the guidelines outweigh the risks, costs, and inconvenience involved. In fact, the U.S. Office of Technology Assessment has recommended that Medicare not pay for cholesterol screening [JAMA 262:464, 1989]. Expert panels in Canada, England, and some European countries are not advocating mass screening for cholesterol, but suggest treating individuals on a case-by-case basis. Their guidelines are more conservative, with higher action ranges than those of the NCEP.

General Dietary Guidelines

To assist consumers trying to lower their blood cholesterol, the NCEP suggests five general guidelines:

- Eat less high-fat food, especially foods high in saturated fat.
- Replace part of the saturated fat in the diet with

TABLE 2: DIETARY THERAPY OF HIGH BLOOD CHOLESTEROL

Nutrient	Step-One Diet	Step-Two Diet
Total fat	Less than 30% of calories	Less than 30% of calories
Saturated fatty acids	Less than 10% of calories	Less than 7% of calories
Polyunsaturated fatty acids	Up to 10% of calories	Up to 10% of calories
Monounsaturated fatty acids	10–15% of calories	10–15% of calories
Carbohydrates	50–60% of calories	50–60% of calories
Protein	10–20% of calories	10–20% of calories
Cholesterol	Less than 300 mg/day	Less than 200 mg/day
Total calories	To achieve and maintain desirable weight	

TABLE 3: DIETARY MODIFICATION GUIDEBOOKS

Title	Author(s)	Method	Food Analyses	Recipe Analysis	Sample Menus
Controlling Cholesterol	Kenneth H. Cooper, M.D., Ph.D.	Uses food exchange system to modify sample weekly diet plans	Calories, fat and cholesterol listed for over 500 food items, with fat composition specified for many	Yes	Yes
Count Out Cholesterol	Art Ulene, M.D.	Provides system for counting levels of saturated fat and dietary fiber to reach goals based on weight or activity level. Cholesterol is tabulated separately.	Ratings assigned for saturated fat, fiber and cholesterol for about 300 foods	No	No
Eater's Choice	Ron Goor, Ph.D. Nancy Goor	Dietary planning based mainly on limiting the number of saturated fat calories.	Calories and saturated fat listed for about 1,500 food items	Yes	Yes
Good Fat, Bad Fat	Glen C. Griffin, M.D. William P. Castelli, M.D.	Dietary planning based on limiting the number of grams of saturated fat	Saturated fat and cholesterol listed for about 270 foods	Yes	No
The New American Diet	William E. Connor, M.D. Sonja L. Conner, M.S., R.D.	Food selection based on "cholesterol-saturated fat index (CSI)," the authors' estimate of the foods' overall effect on blood cholesterol levels	Lists calories and CSI for over 100 foods	Yes	Yes
The American Heart Association Low-Fat, Low-Cholesterol Cookbook	Scott Grundy, M.D., Ph.D.	Primarily a cookbook	Calories, total and saturated fat, cholesterol and sodium listed for over 500 foods	Yes	Yes

unsaturated fat. There is no biological need for dietary saturated fat, but it is practically impossible to avoid eating some of it.

- Eat less high-cholesterol food.
- Choose foods high in complex carbohydrates (starch and fiber), such as fruits, vegetables, whole grain cereals, beans, and legumes.

- Reduce weight if overweight.

At the First National Cholesterol Conference, held in Arlington, Virginia, in November 1988, nutrition professionals agreed that the first practical step toward dietary change is to become more aware of one's diet, especially the amount of food eaten and the brands usually purchased. Toward this end, consumers should get into the habit of checking labels to determine the amount of cholesterol and the amount and type of fat. They also need to become cognizant of the "hidden" fats found in processed foods, such as cookies, crackers, and snack cakes, and the kinds of fats and oils used in their own cooking.

The next step is to make substitutions. For example, use leaner cuts of beef (select or choice rather than prime), and increase the consumption of fish, poultry, fresh fruits and vegetables, beans, and legumes. Make foods high in complex carbohydrates—such as whole grains, beans, and vegetables—the main dish, with small amounts of red meats and cheeses becoming the side dishes. Prepare more often mixed dishes such as stews, casseroles, and pasta and rice meals that

combine small amounts of meat with other foods, such as grains or vegetables.

Finally, consumers should evaluate their progress by having their blood cholesterol tested. Strive for a gradual but steady reduction in the total cholesterol and LDL-cholesterol levels.

Lowering Saturated Fat and Cholesterol

Because the major sources of saturated fat in the American diet traditionally have come from beef and dairy products, dietary advice aimed at lowering blood cholesterol often focuses on cutting back on hamburgers and fatty meats, whole milk, and cheeses—and getting into a habit of preparing foods with less fat. The following suggestions can help consumers choose and prepare foods lower in saturated fat and cholesterol.

- Trim all visible fat from beef and poultry, and remove the skin from poultry.
- Bake, broil, or roast meat dishes instead of deep-fat frying them. To prevent drying and add flavor, baste with wine, lemon juice, or low-fat broths.
- Try experimenting with herbs and spices, such as dill, tarragon, cilantro, and basil.

- Avoid fatty gravies and sauces.
- If pan- or stir-frying, use small amounts of vegetable oils such as canola or safflower oil; also increase your use of olive oil.
- One important change consumers should make is using margarine rather than butter. Many low-calorie margarines, in which water is substituted for some of the oil, are now available. Most butter-margarine combinations still contain 80% fat and should be limited.
- To cut down on whole milk products, switch to 2% or 1% milk, and perhaps eventually to skim milk. Many people find it easy to get accustomed to low-fat milk, and find that when they do so, whole milk tastes too rich. Use the low-fat or skim-milk versions of ricotta, cottage, and mozzarella cheese. Low-fat farmer or pot cheeses also are available. All these cheeses should contain no more than 2–6 grams of fat per ounce. For desserts, substitute ice milk, frozen yogurt (especially the nonfat variety), sherbet, or sorbet for ice cream. If you do eat ice cream, choose regular rather than super premium types.
- Where cholesterol and fat content are not specified on the label, it may still be possible to tell whether a product contains saturated fat or cholesterol by checking the ingredient list. Consumption should be limited of foods that contain palm, palm kernel, and coconut oils; lard; butter; shortening; egg-yolk solids; and whole-milk solids. Also, cut down on baked goods made from these ingredients or that are fried, such as doughnuts.
- Use yogurt instead of sour cream in dips and toppings.
- Use only the egg whites or discard every other yolk in recipes requiring eggs (2 whites = 1 whole egg in recipes). Or, try commercial cholesterol-free egg substitutes.
- Reduce the amount of fat in recipes by a third to a half, and use chiefly poly- and monounsaturated oils.
- In coffee, use low-fat or skim milk instead of non-dairy creamers containing saturated fats. Skim milk powder also is acceptable.
- Make your own popcorn for a low-calorie snack, but be sure to omit the melted butter. Beware of high-fat microwave popcorn products.
- Avoid nuts that are high in saturated fats, such as coconuts and macadamia nuts.
- Incorporate oat fiber into your diet, for example, in oat bran muffins or in casseroles. And to increase your total fiber intake, look for the words "whole wheat" or "whole grain" near the top of the ingredient list when buying breads and cereals.
- Use fresh fruit for dessert instead of fruit packed in syrups or high-fat desserts.
- Choose low-fat luncheon meats such as pressed turkey instead of salami and bologna. Also eat few frankfurters, other sausages, and bacon. When eating turkey, remember that light meat has less fat than dark meat.
- Shrimp, lobster, and other shellfish may be eaten occasionally because they are lower in cholesterol than previously thought, and do not contain too much saturated fat.
- Buy or make salad dressings with predominantly unsaturated oils. Olive oil is an especially good choice.
- Limit your use of organ meats that are very high in cholesterol, such as liver, kidneys, brain, and sweetbreads.
- Prepare soups and stews containing meat the day

before eating them. After refrigerating, skim off the congealed fat on the surface prior to reheating.

- Substitute rice and pasta for egg noodles.
- Steer clear of most store-bought baked products such as pies, cakes, croissants, pastries, and muffins, and try to find low-fat cookies and crackers. Better yet, eat homemade baked goods prepared with small amounts of unsaturated oils. Angel cake is a good choice because it is low in fat and cholesterol.

A key concept in successfully switching to a "heart-healthy" diet is to make the changes gradually to avoid feeling deprived. For example, instead of having bacon and eggs for breakfast every day, save that meal for weekends. Eventually, have it only once a month or on special occasions. For most people, enjoying a rich dessert or a prime rib once in a while is not going to significantly affect their cholesterol level as long as the overall cholesterol-lowering diet is followed most of the time. It is better to splurge once in a while than to cheat a little bit each day.

Many cookbooks can help make switching to a cholesterol-lowering diet simple and fun. Consumers should not consider such a diet to be a hardship. Indeed, with a little practice and experience, it is not difficult to prepare tasty meals that are low in fat, cholesterol, and calories, and high in fiber.

In any case, a diet to lower cholesterol should not be regarded as a temporary eating plan. To be effective, it must become a lifetime commitment that also is accompanied by regular aerobic exercise.

By following the above tips, consumers will automatically reduce the fat, saturated fat, and cholesterol content of their diet, and should come close to the levels recommended by the NCEP Step-One Diet. But the only way to determine how much fat and cholesterol is actually consumed is to add up the amounts contained in the daily diet. While milligrams of cholesterol can be added directly, the percentage of fat must be calculated using information on product labels or from food composition tables. The percentage of calories from fat equals:

$$\frac{\text{grams of fat consumed during the day} \times 9}{\text{total calories eaten}} \times 100$$

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Precise self-determination of fat and cholesterol intake can be difficult because many foods do not carry complete nutrition labels and determining the fat and cholesterol content of many restaurant items is difficult or impossible (although many fast food outlets publish information about their products). Several popular books contain food composition tables to help consumers plan their diet (Table 3).

Computer programs are also available for determining fat and cholesterol intake. The ones containing large databases, including nutritional analyses of brand-name products and fast food items, generally provide the most accurate information. Computer programs are accessible to consumers at certain clinics and through nutrition professionals in private practice. Some are also marketed directly to the public.

Despite these self-help aids, most consumers wishing to design a diet that is significantly low in fat would be wise to seek professional advice from a registered dietitian or other professional nutritionist.

On the Horizon

In response to public outcry, several bills have been introduced in Congress to increase the amount of information on food labels, and the FDA is reviewing proposals to modify them.

Meanwhile, the American Heart Association is gearing up to affix a "heart-healthy" logo on certain packaged and processed foods that are low in fat and cholesterol, as well as in saturated fat and sodium. Critics of this HeartGuide Program say it is simplistic to classify individual foods as good or bad when the amount of food eaten and the overall composition of the diet are what really counts. But the Association plans to launch a massive national awareness campaign to address this concern and alert consumers and professionals to the program. In addition, it will set up a national telephone hotline to answer questions from consumers and journalists.

Experts are predicting that, as more Americans improve their diet, exercise appropriately, and stop smoking, the death rate from heart disease will continue to decline, perhaps plummeting sharply by the end of this century. For individuals who, because of genetic reasons, cannot be helped through diet and exercise alone, new and improved medications to lower cholesterol undoubtedly will become available.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service, and a regional communicator for the Institute of Food Technologists. His postdoctoral research was in cholesterol and lipoprotein metabolism.

BRIEFS

"Baldness remedies" banned. On July 7th, the FDA announced that it will ban the sale of any nonprescription product claimed to grow hair or prevent baldness. This regulation, scheduled to take effect in January 1990, resulted from recommendations by a panel of experts who evaluated numerous ingredients, including lanolin, olive oil, wheat germ oil, and vitamins. In announcing the proposed ban, the agency noted that nothing done to a hair shaft once it emerges from the surface of the scalp will influence hair growth. The prescription drug Rogaine (minoxidil) is the only FDA-approved product for stimulating hair growth on the crown of the head in individuals with male pattern baldness, which is an inherited trait. Because hair loss can also result from crash dieting, iron deficiency, and various other underlying medical causes, the agency recommends that anyone experiencing a sudden, unexplained hair loss consult a doctor promptly.

Tropical oils to be used less. According to a report in the *Tufts Diet and Nutrition Letter*, 13 major food manufacturers have announced that they are reformulating many of their products without coconut, palm, or palm kernel oil. These oils generally cost less than other oils and help products stay fresh longer. However, their use has been heavily criticized because they are high in saturated fat. The 13 firms are Borden, General Foods, General Mills, Heinz U.S.A., Keebler, Kellogg, Nabisco, Pepperidge Farm, Pillsbury, Procter & Gamble, Quaker Oats, Ralston Purina, and Sunshine Biscuit. Much of the criticism came from Phil Sokolof, a Nebraska businessman who spent \$2 million on

ads headlined "The Poisoning of America!" Sokolof, who had had a heart attack and became concerned about his high cholesterol level, was enraged that companies were passing off products as "cholesterol-free" although they contained tropical oils. *Editor's note:* Although tropical oils represent a relatively small part of the saturated fat consumed in this country, their widespread use in foods did pose a serious problem for people wishing to achieve very low saturated fat intakes.

Cholesterol screening device. The FDA has approved use of the Clinicard, a device for rapidly estimating serum cholesterol levels. The device is manufactured by Chem-Elec, Inc., of North Webster, Indiana. It uses a drop of blood on a chemically treated card, with estimated levels indicated by the amount of color change. It does not give exact results but indicates whether the sample tested falls below 200 mg/dl, is between 200 and 300 mg/dl, or is over 300 mg/dl. The Clinicard is intended for screening by physicians to identify people with elevated levels who might need treatment. People with elevated readings should receive further cholesterol evaluation with conventional laboratory tests. The device is not accurate enough to diagnose an elevated cholesterol condition or to monitor the progress of cholesterol-lowering drug therapy.

Quaker buys Pritikin. Pritikin Systems, Inc., which owns all Pritikin enterprises except for the Pritikin Longevity Centers in Santa Monica, Miami Beach, and Downingtown (PA), is now a wholly owned subsidiary of the Quaker Oats

Company. The Longevity Centers will continue to operate independently under license from Pritikin Systems. Quaker plans to continue the marketing of Pritikin food products and to open new lifestyle change facilities.

Fear of obesity. Researchers who evaluated 326 high school girls have reported that 36% were underweight, 47% had normal weight, and 17% were overweight for their height [Pediatrics 83:393-397, 1989]. A majority of the girls in all three categories said they were terrified about being overweight, and 72% reported that they had attempted to diet. Dieting at the time of the survey was reported by 20% of those who were underweight, 32% of those with normal weight, and 54% of those classified as overweight. The researchers hypothesize that "fear of obesity and inappropriate eating behaviors are pervasive among adolescent girls regardless of body weight or nutrition knowledge." Reprints can be obtained from Fima Lifshitz, M.D., Department of Pediatrics, North Shore University Hospital, Manhasset, NY 11030.

Chiropractic nutrition practices. Researchers from San Jose State University's Department of Nutrition and Food Science have published the results of a survey mailed to 438 members of the San Francisco Bay Area Chiropractic Society [Journal of the American Dietetic Association 89: 939-943, 1989]. Usable responses to the five-page questionnaire were returned by 100 practicing chiropractors. Of these, 60 indicated that they routinely provide nutrition information to their patients and 38 said they provide it on request. Sixty claimed that they treat patients for nutritional deficiencies. Nineteen said they use hair analysis, and nine indicated that they use "applied kinesiology" for nutritional assessment. (Neither test is valid for this purpose.) Noting that chiropractors treat many patients and have a high level of interest in nutrition, the article recommends that dietitians provide nutrition information through chiropractic journals and seminars. *Editor's note:* It would have been interesting to know more about the quality of the chiropractors' advice. I suspect that the majority who routinely advise patients about nutrition also prescribe and sell megavitamins and other supplement concoctions. Although some chiropractors can absorb valid information from dietitians, I suspect that the majority are too delusional to do so.

Another sales device. *Delicious!*, issued eight times a year by the publisher of the trade publication *Natural Foods Merchandiser*, is a magazine given to customers by health food stores and sold by subscription. It began publication in 1985 with the intention of helping readers to "integrate the full spectrum of quality products sold in natural foods stores . . . into your life. Many of its articles make unproven claims for foods, vitamins, and other dietary supplements. In this way, claims that cannot legally be made on product labels are made in the text of the magazine, where they are protected by freedom of the press. In most issues, supplement product ads are placed next to articles boosting their ingredients. These characteristics are typical of health food publications, but *Delicious!* goes a step further. Since 1987, it has contained a "Shopping Guide" that lists products containing substances mentioned in the articles and manufacturers (including advertisers in the magazine) who market them.

Oxygen for athletes criticized. A double-blind study of 12 members of a professional soccer team found that they did not recover from exhaustive exercise significantly faster or subsequently perform better after breathing 100% oxygen than they did after breathing room air [JAMA 262:227-229, 1989]. In addition, the athletes could not tell whether they had been breathing oxygen or air. The authors conclude that although supplemental oxygen is widely used by competitive athletes, any benefit is most likely due to a placebo effect. This is not surprising because arterial blood becomes almost saturated with oxygen extracted from normal atmospheric air, so there is no reason to believe that breathing oxygen-enriched air will cause significantly more oxygen to be delivered to body tissues.

Kowalski update. A 1989 revision of Robert Kowalski's *8-Week Cholesterol Cure* was released in August. The book contains new chapters about: 1) the special needs of women, children, and the elderly; 2) the accuracy of cholesterol testing; 3) prescription drugs for lowering cholesterol; and 4) evidence that atherosclerosis may be reversible. The book also contains warnings that niacin is best taken under medical supervision and that liver function tests should be obtained periodically. Charles Marshall, Ph.D., who reviewed the 1987 and 1988 versions for *Nutrition Forum* [NF 6:31-32], considers the new edition improved, but notes that several errors which he pointed out remain in the 1989 edition.

Meat inspections will continue. The U.S. Department of Agriculture has responded to nearly 1,800 comments and withdrawn its proposal to reduce the federal inspection at meat and poultry processing plants.

"Fat Blocker" blocked. A federal court judge has issued a temporary restraining order against David Erickson (d/b/a Princeton Labs, Las Vegas), barring sales of alleged diet pills under the names Maxilite and Fat Blocker. The company had placed full-page ads in newspapers across the nation claiming that the pills could "flush calories right out of the body."

QUESTION BOX

Q. Recently I saw the term "non-tropical canola oil" on a food product label. What does this mean?

A. Canola is a special form of rapeseed that originated in Canada in the late 1970s. Rapeseed oil is usually high in glucosinolates and erucic acid (a fatty acid), both of which have nutrition and health disadvantages. Agricultural research has succeeded in breeding low-glucosinolate, low-erucic-acid rapeseed (LEAR), from which the oil is extracted. Now called "canola" (short for "Canadian oil"), it is an excellent vegetable oil that is low in saturated fat and is being used increasingly by the food industry. Since Canada is not a tropical country, it is technically correct to say that canola oil is "nontropical." But this is obviously intended to capitalize on the fact that the tropical vegetable oils (coconut, palm, and palm kernel oils), which are high in saturated fat, are under attack as "killer fats."

GARBAGE IN OUR FOOD?

Manfred Kroger, Ph.D.

On August 2, 1989, the Subcommittee on Oversight and Investigations of the U.S. House of Representatives' Committee on Public Works and Transportation held a hearing on the practice of hauling municipal solid waste in trucks that regularly carry meat, poultry, produce, and other food and consumer products. The Subcommittee's investigation suggests that this practice—called "backhauling"—is most common in the Northeast and Midwest, where trucks used to transport food from the Midwest are loaded at East Coast transfer stations with baled trash for landfills in Pennsylvania, Ohio, Kentucky, and West Virginia. The Government Accounting Office is also looking into this matter.

No current federal law or regulation specifically prohibits backhauling. The FDA probably could stop it by declaring that any food shipped in trucks used to haul trash is adulterated, but the agency may not have sufficient resources to detect violators. In June, Rep. Christopher Smith (R-NJ) introduced the Food Contamination Prevention Act, which would require the Department of Transportation to issue regulations to prohibit vehicles that haul solid or hazardous waste from being used to transport food. (Violators would be subject to criminal penalties of up to \$250,000 and 5 years in jail.) Meanwhile, the situation worries scientists and others concerned with the safety of our food supply.

Backhauling of garbage in food trucks presents a dilemma typical of densely populated areas in industrialized societies. People produce garbage, and garbage must be dealt with. One reason for the relative success of humans is that our ancestors recognized that waste products pose dangers to human health. We can ill afford to bring back the crude practices of previous ages when food-borne diseases were a major cause of debilitation and death.

Garbage hauling is reputed to be considerably more profitable than food hauling and can boost the income of truckers who might otherwise have to travel with an empty rig. But food scientists see the loading of dangerous wastes onto food trucks as a grave threat to the basic mission of our food system to produce the best possible quality and consumer satisfaction. Testimony at the hearing indicated that the Campbell Soup Company has sought assurance from trucking firms that their products would not be hauled in trucks that had carried garbage.

As far as I know, no scientific study has been done to explore whether backhauling can be done safely. But there are cogent arguments against it.

Unless extreme care is exercised to remove every trace of a previous shipment of garbage, unwanted matter will be transferred. Even without visible adulteration, tiny amounts

of contaminants can compromise food quality. For example, odors can be so persistent that spoiled silage fed to cows will make their milk taste unpleasant, and butter will assume an onion-like taste if left uncovered in a refrigerator with cut onions.

Metal trucks are easier to clean than trucks with wooden bodies. Wood retains odors more tenaciously. Even if a cleanup method were devised to make a garbage truck clean enough for food, the first illiterate, lazy, disgruntled, or careless worker would defeat what might look like a rational solution to the problem.

It is easier to rid a truck of residual chemical substances than of bacteria, viruses, molds, and yeasts. Chemicals don't multiply, but microorganisms do. Even one can turn into trillions if conditions are right. It is tough enough to clean and sanitize *food* containers. In my opinion, it's impossible (or would be prohibitively expensive) to make garbage containers compatible with foods.

One firm in Arkansas sells truck-size plastic bags for \$50 apiece and suggests that these may offer a solution. This concept is interesting and may be ripe for research, but I suspect that the plastic can be punctured by debris and that gas generated by bacterial fermentation might burst the bags.

Many truckers are said to refrigerate their garbage to keep the odor down. This raises the question of whether an air conditioner can harbor and grow bacteria and later blow them over a shipment of food. I don't know the answer, but I do recall that the fatal outbreak of Legionnaires' disease in Philadelphia in 1976 was traced to bacteria distributed through a hotel air-conditioning system. Also, it is known that buildings can become "infected" with bacteria that lodge near the intake ducts of air-conditioning systems. I believe that food trucks that back into filthy dump sites can easily pick up disease-causing bacteria that later can spread to food during loading.

There is also the psychological factor. The subject has received minimal publicity, but for most people the idea of backhauling would probably be as appealing as the thought of eating potato salad from a presumably cleaned-up cat litter box.

In the interest of fairness as well as science, I hope that enough data emerge from this hearing and subsequent investigations for a wise legislative decision to be made. Meanwhile, my gut reaction, like that of most food scientists, is that food trucks should be designated as such and not be allowed to carry materials injurious to food quality or public health.

Dr. Kroger, who testified at the subcommittee hearing, is professor of food science at The Pennsylvania State University.

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BOOK REVIEWS

Title: How Superstition Won and Science Lost: Popularizing Science and Health in the United States (1987)

Author: John C. Burnham

Publisher: Rutgers University Press, 109 Church St., New Brunswick, NJ 08901

Price: \$35 hardcover, \$16 softcover

Reviewed by: James Harvey Young, Ph.D.

John Burnham, a historian of American science and medicine at Ohio State University and next president of the American Association for the History of Medicine, skillfully defends the validity of his title by tracing the decline and fall in the quality of popularization over the last hundred years.

In the late nineteenth century, the nation's best scientists considered it a social obligation to use reason and research to combat superstition and mysticism among the populace. During the present century, leaders in science and medicine have retreated from this task, which has been assumed mainly by the mass media and advertising. Broad context, rational setting, and honest candor have given way to the sensational treatment of isolated items, often aimed at serving special interests. These trends have ill served the public interest. Old superstitions have lingered because of inadequate exposure, and the most blatant kind of remystification is rampant.

The lesson in Burnham's book is that accurate and reliable publications, such as *Nutrition Forum*, are rare voices in a vast wilderness of irrationality. Those who wish to understand how this situation has come about will profit by turning to Burnham's richly textured and lucidly argued account, in which health is a central focus.

Dr. Young, who is Professor of History at Emory University, is a social historian with special interest in the development of food and drug regulation in America. His books, *The Toadstool Millionaires* and *The Medical Messiahs*, trace the history of quackery in America and efforts to control it.

Title: Controlling Cholesterol (1988)

Author: Kenneth H. Cooper, M.D., Ph.D.

Publisher: Bantam Books, New York

Price: \$23.95

Reviewed by: Lisa Teresi Harris, R.D.

Kenneth Cooper, M.D., often called the father of aerobics, has written what might be subtitled, "The Layperson's Complete Guide to Cholesterol." This work describes lifestyle modifications to help decrease the risk of heart disease by controlling (not eliminating) cholesterol. Cooper gives readers the facts in plain English, interprets them, and attempts to personalize the information so that dieters can make permanent changes.

Controlling Cholesterol is an interesting combination of anecdotes, scientific evidence, and recommendations. Cooper begins his book with a description of cholesterol and heart disease. He traces the history of cholesterol from its first reported scientific investigation (1733) through its ex-

traction, identification, and elucidation. Next, he details cholesterol metabolism, likening the major players to characters in a naval scene.

The significance of LDL, HDL, total cholesterol, triglycerides, and their interactions is explained, and a cardiovascular disease risk chart, based on age, sex, and various blood lipid levels is provided. (This book was published before the release of the NHLBI classifications for blood cholesterol; therefore, the categories are slightly different.) A discussion of the blood cholesterol test itself addresses such issues as how often the test should be taken, whether it should be taken in a fasting state, and how much it costs.

Cooper's "Controlling Cholesterol Diet" is a three-level approach to the problem. Depending on the reader's lipid profile, a basic (300 mg cholesterol per day, 20-30% fat), moderate (200 mg cholesterol, 15-20% fat), or strict (100 mg cholesterol, 10-15% fat) diet is given. Complex carbohydrates range from 50-70% of calories. Cooper provides a 1,500-calorie, 2-week diet (with recipes) for women and a corresponding 2,200-calorie diet for men. An exchange system is supplied for those who wish to develop their own plans.

The author supports aerobic exercise as a way to improve the cholesterol balancing act, and offers detailed recommendations. Other topics include the effects of alcohol, smoking, coffee, obesity, age, sex, stress, monounsaturated fats, and oat products on cholesterol metabolism and heart disease risk. Drug therapy, children and cholesterol, and the reversibility of atherosclerosis are also discussed.

This book summarizes and integrates numerous scientific studies. Cooper specifies certain studies with journal citations and provides almost 300 "selected references" at the back of the book. The information is therefore accurate and up-to-date.

Cooper has a knack for describing very technical processes in an understandable manner. Better still, he presents more than one side of an issue and attempts to explain why studies occasionally conclude with differing results. He interprets the information, summarizes it, and makes a stand, giving his recommendation for each topic in the book. He does not jump on the bandwagon when he feels further research is warranted (e.g., fish oils, oats).

Cooper's dietary recommendations are consistent with those of most medical authorities. The fiber, cholesterol, and sodium levels of the provided menus are all at appropriate levels. The recipes reflect a dietary program developed by the nutrition staff at Cooper's Aerobics Center in Dallas, Texas.

Controlling Cholesterol is accurate, comprehensive, and easy to understand (although by no means light reading). Cooper's emphasis on preventive medicine and his interest in permanent lifestyle changes shine clearly throughout this book, which is well worth the price for anyone interested in minimizing the risk of atherosclerotic heart disease.

Ms. Harris is editor and publisher of *Current Diet Review*, a bimonthly newsletter that evaluates nutrition books and other publications.

NUTRITION

Forum

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FALSE TENETS OF PARAHERBALISM

Varro E. Tyler, Ph.D.

True herbalism encompasses scientific testing, honest reporting of the results, and safe use of effective herbs by informed practitioners and the public. It also includes the production and ethical marketing of herbal products. True herbalism, which brings honor to the wonder-filled world of plants, does exist as part of the science of pharmacognosy. However, there is a dark side to herbalism which I call *paraherbalism*.

Herbalism and paraherbalism can be compared to Dr. Jekyll and his evil self, Mr. Hyde. As with these famous fictional characters, danger is ever-present that the good of herbalism will be destroyed by the evils of paraherbalism. That would be tragic because herbalism can play a useful role in the health-care arena.

Paraherbalism is a Pseudoscience

Pseudoscientists typically fail to use rigorous experimental methods, lack a coherent conceptual framework, and claim positive results not corroborated by impartial observers. The fact that paraherbalists fail to develop or accept accurate information about their recommended remedies and simply reassert untested dogma clearly identifies their field as pseudoscientific. These problems are rampant in herbal literature, both old and new. For example:

- Referring to burdock, the leading 17th century astrologer and apothecary, Nicholas Culpeper, said, "The root beaten with a little salt, and laid on the place, suddenly eases the pain thereof, and helps those that are bit by a mad dog." In 1971 in *A Modern Herbal*, Maud Grieve repeated this advice without a word of caution. In fact, there is no scientific evidence that burdock has any useful therapeutic activity against rabies—or any other disease.

- Edward Bach, who developed the Bach Flower Remedies more than 50 years ago, believed that sun-warmed dew absorbs vital healing powers from plants. Thus, if flowers are placed in pure spring water in a glass bowl in full sunlight, healing energy is transmitted to the water, which can be used in tiny doses to treat patients. Bach said his remedies did not cure disease but increased the condition of health of the user. He offered no scientific explanation, preferring to keep his reme-

dies "free from science, free from theories." Recent writers have postulated that the remedies work through a "nonphysical" energy field emanating from the plants.

- Since the early 1960s, sassafras oil and safrole, which is obtained from it, have been recognized as carcinogens in rats and mice. Their use as flavors or food additives is now forbidden by the FDA under the Delaney Clause of the Food, Drug, and Cosmetic Act. Nevertheless, sassafras is still considered an unexcelled home remedy by paraherbalists who never mention its toxicity.

- In 1974, a dubious journal article concluded that yucca is useful in the general management of the various forms of arthritis. Although the Arthritis Foundation reported that the study's design was invalid, it is still cited by paraherbalists as evidence that yucca is effective. In 1979, for example, John Heinerman wrote in *Science of Herbal Medicine* that "Yucca root contains special steroid saponins which have been successfully tested under clinical conditions to determine its effectiveness in treating acute forms of arthritis."

- One of the most common herbs marketed in the United States is comfrey, which contains pyrrolizidine alkaloids that are toxic to the liver. Paraherbalists praise its supposed virtues and fail to mention the scientific evidence of its harmful nature.

- No scientific evidence supports the use of alfalfa for arthritis, spirulina for weight loss, Mormon tea for venereal disease, damiana for sexual stimulation, eyebright for loss of vision, or borage for melancholy. Yet paraherbalists, either ignoring contrary evidence or parroting the claims of Culpeper and others, advocate such use.

False Tenets

Paraherbalism is characterized by at least ten false tenets. While not every paraherbalist embraces all of them, enough do to conclude that all are characteristic of the field.

- *Tenet #1: A conspiracy by the medical establishment discourages the use of herbs.* One forceful statement of this tenet is Heinerman's assertion that, "A large percentage of this suspicion of herbs and natural healing methods is due to the unmitigated prejudice and slanderous opposition posed by the regular medical community at large. Quite often they are joined

in this harmful conspiracy by the pharmaceutical industry." Others have suggested that herbalists (and other health food industry "pioneers") are automatically branded as quacks and charlatans by the "AMA-FDA combine."

I have never met a physician who knew enough about herbs to raise an opposing voice. Doctors who give herbal medicine any thought at all are rare. Physicians are taught nothing about the subject in medical school. If they become curious and purchase a popular book on the subject, reading that yucca roots are "mashed and boiled to make a tea for treating diabetes" might inspire them to file the volume among others devoted to superstition and witchcraft. They might even throw the book away, but they would not stop using insulin, which they know is an effective drug.

Inquisitive physicians might even look up the credentials of those whose writings on herbal remedies are most widely distributed. If so, they might find that Sybil Leek is described in *Who's Who in America* as an astrologer and wrote several books on witchcraft, including *Diary of a Witch*. They might also learn that Richard Passwater obtained his "Ph.D." from an unaccredited correspondence school not authorized to grant degrees. Such credentials are not likely to inspire scientifically trained physicians to have much confidence in the paraherbal advocates.

In the pharmaceutical industry, another attitude prevails. Here it is recognized that plants have yielded effective drugs like opium, digitalis, ergot, belladonna and rauwolfia. But there is insufficient profit potential to stimulate much research into new plant drugs. With the cost of developing a new chemical entity into a marketable drug now over \$100 million, pharmaceutical manufacturers focus on products where patent protection can be achieved rather than widely used plant remedies that probably cannot become patentable drugs. Again, there is no conspiracy but simply a lack of expected profit.

• *Tenet #2: Herbs cannot harm, only cure.* It is ancient dogma—repeated in modern herbals—that drugs of vegetable origin are automatically good, but those derived from minerals or petroleum are necessarily bad. William Smith, for example, states in *Wonders in Weeds* that: "It cannot be emphasized too highly that herbal medicine is 'safe medicine,' a claim that cannot be applied to orthodox remedies."

This thesis denies the fact that some plant constituents are among the most toxic substances known. Acutely toxic alkaloids, ranging alphabetically from aconitine to zygadenine, are abundant. Other constituents, such as the peptide amatoxins in certain fungi, can also kill. Even so, consumers are probably less likely to suffer from acute strychnine poisoning by eating *Nux vomica* seeds than they are to receive exposure to milder and less obvious toxins through repeated use of such remedies as sassafras or comfrey. And certain diterpine esters are cocarcinogens (tumor promoters).

• *Tenet #3: Whole herbs are more effective than their isolated active constituents.* Many modern paraherbalists maintain that plants are not only the safest way to administer medicine but also the most effective. They claim that, apart from their active principle, plants may contain other substances that enhance their therapeutic action by some sort of a synergistic process.

Perhaps the most persistent advocate of this doctrine has been Andrew T. Weil, M.D., who argues, "In the case of drug plants, the whole forms, being complex mixtures and therefore impure, tend to be safer than their unmixed derivatives, freed from diluents and made available in highly refined

form." Weil also argues that the lesser concentration of an active constituent present in plant tissue renders such a drug safer to use. Finally, he contends that the various active constituents in a plant work synergistically to produce a total effect greater than the mere sum of the individual component activities.

Weil's first two points can be dismissed simply by pointing out that dosage, which governs a drug's safety and efficacy, is much more readily controlled with purified constituents. Synergism occasionally occurs, but for every case where a desirable action is enhanced, there are several where undesirable actions are produced. For example, cinchona bark contains some 25 closely related alkaloids, but the only one recognized as useful in the treatment of malaria is quinine. A person who took powdered cinchona bark would also ingest the alkaloid quinidine, a cardiac depressant, and cinchotannic acid, which would induce constipation.

An even more significant example is comfrey, whose leaves and underground parts are widely recommended by modern herbalists as wound-healers. Whatever activity of this sort the plant possesses is due to its content of allantoin, an agent that apparently promotes cell proliferation. However, comfrey also contains carcinogenic pyrrolizidine alkaloids, including echimidine and symphytine. Purified allantoin, free from accompanying carcinogens, would obviously be safer to use.

• *Tenet #4: "Natural" and "organic" herbs are superior to synthetic drugs.* Paraherbalists claim that products made by the metabolic processes of plants or animals possess an innate superiority over identical products synthesized in a chemical laboratory. The falsity of this claim was demonstrated as far back as 1828 when the German chemist Friedrich Wöhler synthesized urea from inorganic materials. Wöhler's synthetic urea was identical in every respect with the urea biosynthesized and excreted by animals or biosynthesized and accumulated by many species of higher fungi. Thus, statements like "The pharmaceutical industry needs to stop fooling around with dangerous synthetic chemicals and return, once again, to the more natural substances God has placed upon this earth for our health and benefit" are derived from baseless belief rather than scientific methodology.

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The term "organic" is used to describe plants grown without pesticides or synthetic fertilizers. Materials made from such plants are believed to be superior in some way to those produced by conventional agriculture. This belief is based on a complete misunderstanding of plant nutrition and physiology. Plants require inorganic nutrients such as nitrogen, phosphorus and potassium for normal growth. They obtain these elements from the soil and have no mechanism for distinguishing their original source. If adequate amounts are present, plants grow normally. If they are not, this does not occur.

Pesticides are a slightly different matter. Appropriate safety limits have been established, and some pesticides have been banned. It is possible to grow plants without using pesticides, but yields per acre are much diminished. So one either trusts scientific farmers and the regulatory process or one pays considerably more for food.

• *Tenet #5: The "Doctrine of Signatures" is meaningful.*

The three most popular aphrodisiacs sold in the Orient owe their alleged properties to the so-called Doctrine of Signatures—the ancient belief that the form and shape of a drug source determine its therapeutic virtue. Thus, rhinoceros horn, deer antlers, and ginseng root with their phallic resemblance (or in the case of bifurcated ginseng with attached rootlets, its similarity to the human body complete with phallus) are all highly esteemed as agents of virility. In Chinese pharmacies, antlers are typically displayed on velvet mats in glass showcases and sold at prices comparable to fine pearls.

Deer antler and rhinoceros horn have never been proven to contain any constituent that stimulates libido or cures impotence. Any activity should be attributed to placebo effect. Ginseng does contain triterpenoid saponins, to which various physiological activities have been attributed. However, no substantial evidence that ginseng enhances sexual experience or potency has been published in the scientific literature.

The Doctrine of Signatures is not unique to the Orient. Gerard reported in 1597 that eyebright juice applied to the eyes "taketh awaie the darknesse and dimnesse of the eies and cleareth the sight." Variations of this advice are duly repeated by most present-day paraherbalists.

Actually, no constituent of eyebright is known to be effective against any eye disease. Medieval herbalists assumed it was effective because the white to bluish corolla of its flower bears a bright yellow spot, making it resemble an eye with its pupil. Believing that this structure makes the plant effective against eye disease makes as much sense as believing that walnuts are good for mental illness because their kernels resemble the brain or that liverworts are good for jaundice because their leaves resemble the shape of the liver.

• *Tenet #6: Reducing the dose of a medicine increases its therapeutic potency.* This, like the Doctrine of Signatures, is a principle espoused by homeopaths. Founded near the end of the 18th century by Samuel Hahnemann, a German physician, homeopathy originally had three basic tenets: 1) diseases are cured by small doses of drugs which, when administered in large doses to healthy persons, produce effects similar to the symptoms of the disease; 2) the potency of a drug is inversely proportional to its concentration; and 3) chronic diseases are simply manifestations of a suppressed itch or psora, a kind of evil spirit. This last notion proved so outrageous, even to fervent homeopathic practitioners, that it was soon abandoned.

The eighth (1980) edition of the *Homeopathic Pharmacopoeia* contains some 600 pages of monographs, most of them

on drugs of plant origin. Homeopathic remedies in this book are recognized as drugs under federal laws, a fact appreciated by paraherbalists. Some of the listed substances, such as cinchona, digitalis and opium, are effective in appropriate dosage. But homeopathy advocates high dilution for maximal effect. Many homeopathic remedies are so dilute they are statistically unlikely to contain a single molecule of the original substance.

Still, there has been a resurgence of interest in homeopathy in this country in recent years. Its supposed safety and "holistic" orientation, coupled with its vast materia medica of vegetable drugs, appeal to many paraherbalists.

• *Tenet #7: Astrological influences are significant.* In his recent book, *Herbs, Health and Astrology*, Leon Petulengro comments, "Knowing as we do that planets and stars emit their own individual signals or vibrations, how can we disbelieve that ancient lore was right and that herbs and plants, and indeed humans, are ruled by these various vibrations or force fields?"

How, indeed? Just compare drugs with similar physiological effects and the different planets to which they are assigned. For example, broom, digitalis, lily-of-the-valley and black hellebore all yield drugs that can slow the heartbeat, render it more regular, or otherwise strengthen it. But they look quite different from one another and belong to different plant families. Probably for this reason, Culpeper assigned each to a different "governing" planet—a classification repeated by Sybil Leek.

Culpeper assumed that diseases caused by a certain planet are cured by herbs of the same planet or the "opposite" planet. For example, since diseases of the heart and blood vessels are caused by the sun, they should be cured by herbs dominated by the sun or ruled by Saturn. If this were true, black hellebore would be the only herb in either of the above categories that is effective against heart disease. Actually, it is probably the least effective cardiotonic drug considered by Culpeper and was dropped from the *United States Pharmacopoeia* in 1882. Broom was officially listed until 1936 (and its active principle until 1950), and lily-of-the-valley root appeared until 1950. Digitalis is still listed together with its constituent glycosides, which are extensively used. Thus, astrological reasoning classified only one out of four correctly and selected the worst example.

Looking in reverse, let's assume, as Culpeper would have us do, that herbs "dominated" by the sun do indeed strengthen the heart by sympathy. Saffron, he says, "is an herb of the Sun, and under the Lion, and therefore you need not demand a reason why it strengthens the heart so exceedingly." Juniper, he writes, "is an admirable solar shrub." Lovage, he continues, "is an herb of the Sun." Of rosemary, he notes, "The Sun claims privilege in it." None of these plants has any significant cardiac effect. In fact, of the more than 30 plants described by Culpeper and Leek as herbs of the sun, only mistletoe—which is fairly toxic—has any appreciable effect on the cardiovascular system.

• *Tenet #8: Physiological tests in animals are not applicable to human beings.* When it suits their purposes, paraherbalists typically complain that the results of animal experiments should not be applied to herbs. Heinerman has said, for example, that saffras was removed from the marketplace "because a bunch of 'puny, sickly, all-around crummy rats' just happened to get cancer when this plant was injected into them by their larger, less intelligent relatives."

It is true that great differences exist among various

animal species and between animals and humans. However, there is a high probability of significance when diverse species show similar effects. For this reason, new drugs should be evaluated in several animal species, preferably from different orders. Herbs need to be tested for safety and effectiveness. If animal testing is not acceptable to paraherbalists, the only alternative—initial screening of drugs in humans—is even less acceptable to the public.

• *Tenet #9: Anecdotal evidence is highly significant.* A century ago, glowing testimonials were widely used to sell patent medicines. Today, similar ones are used for herbal remedies. For example, *Herbal Success Stories*, published in 1980, recounts "actual case histories" of those who "either experienced the problem and cure themselves or helped a family member or friend with the ailment or cure." According to the author, readers can "use this book with assurance that successes related there are true."

Unfortunately, in individual cases, it is difficult or impossible to tell whether a reported cure resulted from the treatment, a placebo effect, or the body's ability to heal itself. It may also be difficult to tell whether an anecdote has been reported accurately or was even fabricated. Anecdotal evidence can provide leads for research, but it is not reliable for establishing therapeutic utility of an herb. That requires preliminary investigations in laboratory animals followed by randomized, double-blind clinical trials in humans.

• *Tenet #10: Herbs were created by God specifically to cure disease.* Many paraherbalists claim God has provided a remedy for every disease that might afflict us. This claim may appeal to deeply religious people, but is not testable and is not a legitimate substitute for scientific evidence.

Dr. Tyler is Executive Vice President for Academic Affairs at Purdue University. An expert in pharmacognosy (the science of medicines from natural sources), he is the author of *The New Honest Herbal*, an evaluation of popular herbs, now available from J.B. Lippincott Company.

Conclusion

Whether through incompetence, fraud, greed, or all three, it is evident that paraherbalists ignore science in favor of exaggerated claims. Rudolf F. Weiss, the grand old man of European herbal medicine, has summed up the current situation very well in the 1988 edition of his classic book *Herbal Medicine*: "Nothing has done more to prevent recognition [of herbal medicine] than the wholesale transmission of indications derived from the old herbalist tradition, often still brought before the public in articles and lectures with no scientific foundation at all. This also applies to many recent semi-scientific or popular books on herbal medicine."

Herbal advocates have cause to be alarmed. Adherents of the false tenets discussed above are creating an image of herbalism that could easily discourage and finally prevent the development of scientific herbal medicine in America. More misinformation regarding the safety and efficacy of herbs is being placed before the public currently than at any previous time, including the turn-of-the-century heyday of patent medicines. Neither pharmaceutical companies nor government agencies are providing enough money for herbal research—so university-based researchers are not being encouraged to investigate potentially useful herbs.

During the last 35 years, much has been learned about the basics of plant metabolism, analysis, and production. Our research methods have never been better, and there are still scores of thousands of readily available species awaiting investigation or reinvestigation. Herbal advocates have organized the American Botanical Council and the Herb Research Foundation to stimulate research and educate the public. If the FDA can ease its standards for evaluating new drugs, particularly from plants long used as folk remedies, research and development of such products might become practical.

BRIEFS

Preventable infant death. Last March, according to a report from CHILD, Inc., Michael David Boehmer bled to death four days after his birth at home in Lake City, Florida, because his blood did not clot properly. The clotting problem was due to insufficient vitamin K. The local medical examiner concluded that either standard prenatal care or the vitamin K shot normally given to newborns would probably have prevented the problem. (The injection supplies the vitamin until the infant's intestinal bacteria are established and begin to synthesize it.) However, the child's parents belonged to End Time Ministries, a religious group that relies on prayer and believes that medical care should be avoided. After the father testified that he would have sought medical care had he realized the boy was dying, the local judge ruled the death was not the result of a criminal act, negligence, or foul play. CHILD, Inc., founded by Rita and Douglas Swan, former Christian Scientists who lost one of their children to meningitis under Christian Science care. They believe that stringent state laws should be enacted to protect children from medical neglect in the name of religion. CHILD's address is P.O. Box 2604, Sioux City, IA 51106.

Koop urges tougher action against drunk driving. At his final press conference May 31, Surgeon General C. Everett Koop, M.D., declared drunk driving "a serious threat to public health." He recommended: 1) lowering the maximum legal blood alcohol level from the current 100 mg% to 80 mg%; 2) increasing taxes on alcoholic beverages; and 3) urging beer and liquor manufacturers to produce a health message for every alcohol ad they produce. In 1988, close to 24,000 people died in alcohol-related traffic crashes.

Food irradiation reports. The Council for Agricultural Science and Technology (CAST), 137 Lynn Ave., Ames, IA 50010, has issued the second part of its task force report, *Ionizing Energy in Food Processing and Pest Control. Part I: Wholesomeness of Food Treated with Ionizing Energy* (50 pp., 1986) is \$4, while *Part II: Applications* (98 pp., 1989) is \$10. The reports conclude that irradiated foods are safe and wholesome and that the radioactive sources used to process them pose no hazard to anyone employed at the food treatment facilities or involved in transporting the materials.

FTC consumer warning. The Federal Trade Commission has warned consumers to be aware that some television programs that look like talk shows are actually program-length commercials. Many such programs on cable and independent television stations have been promoting weight-loss plans and various health products that supposedly provide great results with little effort or risk. One tip-off, says the FTC, is that the products promoted during "commercial breaks" are related to the program's content. *Editor's note:* Most of the diet products and all of the health-related products I have seen advertised so far have been scams.

Weight-loss clinic follow-up. A study of 31 people whose photograph and testimonial had appeared in newspaper ads for a weight-loss clinic has found that 20 months later, only 8 (26%) had remained within five pounds of their target weight. The clinic, a Midwestern affiliate of a national commercial weight-loss program, offers behavioral education with a prepackaged food regimen. The researchers caution that their data must be interpreted cautiously because their findings do not reflect the experience of clients who never met their weight loss goals [Journal of the American Dietetic Association 89:547-548, 1989].

Suit fails against whiskey manufacturer. A federal jury in Seattle has cleared Jim Beam Brands Co. of negligence for not stating on its labels that alcohol consumption by pregnant women can cause birth defects in their children. Witnesses for Beam said that the plaintiff drank heavily despite repeated warnings from relatives and friends and that there was no reason to believe she would have heeded a label warning. Two similar cases are pending in Washington state courts.

Lecithin and serum cholesterol. A review of 24 studies of lecithin supplementation has concluded that most of them were poorly designed and the rest suggest that dietary lecithin does not lower serum cholesterol in humans [American Journal of Clinical Nutrition 49:266-268, 1989]. Reprints can be obtained from Martijn B. Katan, Department of Human Nutrition, Agricultural University, P.O. Box 8129, 6700 EV Wageningen, The Netherlands.

Diet and cancer. An excellent discussion of misconceptions about cancer and nutrition has been published in the American Journal of Gastroenterology [83:1346-1351, 1988]. Reprints can be obtained from Michael Mogadam, M.D., 5021 Seminary Rd., Alexandria, VA 22311.

Pharmacists' advice. American Druggist's 1989 survey of 1,500 independent and chain-based community pharmacists has found that buyers of multivitamins or calcium supplements ask for product recommendations about half the time. The most popular items in these categories were Centrum, which enjoys a 54.9% market share, and Os-Cal, which has a 44.6% market share. The magazine estimated that, if pharmacists across the nation make an average of six weekly recommendations, that could influence 450,000 weekly purchases. *Editor's note:* Imagine what would happen if pharmacists attempted to determine whether prospective buyers actually need a vitamin or mineral supplement and discouraged unnecessary purchases.

Food consumption data. In June, more than 150 food scientists and health authorities met in Helsinki, Finland, to discuss the complexities of gathering food consumption data. The symposium was sponsored by the International Life Sciences Institute. The methods used to assess the content of nutrients, additives, and drug and pesticide residues in foods include: 1) crude estimates of per capita production or disappearance rates; 2) 24-hour dietary recall; 3) dietary records, in which everything consumed is recorded; 4) market baskets, in which a typical household's food is collected; and 5) duplicate portions, in which an extra portion of food and drink is retained and subsequently analyzed. The symposium participants generally agreed that the last approach is the most accurate, but is also the most difficult to carry out. Therefore, dietary data are usually based on recall or dietary records, which can be flawed by limitations of human memory.

Anthology published. The Dushkin Publishing Group, Sluice Dock, Guilford, CT 06437, has published *Nutrition 89/90*, its third annual sourcebook of nutrition articles. Edited by Charlotte Cooke-Fuller, Ph.D., of Towson State University, with help from Dr. Stephen Barrett, it contains 66 significant articles from newspapers, magazines, newsletters and scientific journals. Single copies are available for \$10 plus \$2/order for postage from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

Nutrition advice rated. The American Council on Science and Health has published the results of its fourth survey of nutrition information in popular magazines. Four judges rated articles in 25 magazines published between July 1986 and June 1988 for accuracy, timeliness and readability. *Consumer Reports* topped the list. *The Saturday Evening Post*, *Vogue*, *Reader's Digest*, *Parents*, *Good Housekeeping*, *Changing Times*, *Woman's Day*, *Modern Maturity*, *Seventeen*, *McCall's* and *Better Homes and Gardens* also received high ratings.

Egg cholesterol content revised. The U.S. Department of Agriculture's Human Nutrition Information Service has updated its nutrient composition data for eggs. The revised data are based on a 1988 study of eggs from 122 suppliers who represented more than 60% of the nation's egg production. The amount of cholesterol per egg is now 213 mg, a 22% reduction from the 274 mg figure listed since 1976.

Allergy to cottonseed oil. Researchers who tested seven people who experienced severe allergic reactions during or shortly after ingestion of products marketed by United Sciences of America, Inc., (USA, Inc.) have concluded that the reactions were caused by cottonseed protein [Journal of Allergy and Clinical Immunology 82:242-250, 1988]. Four of the seven had been hospitalized for observation. The researchers warn that increased use of cottonseed protein in food products may cause reactions in individuals with previously undetected sensitivity to this protein. Reprints are available from Fred M. Atkins, M.D., Dept. of Pediatrics, National Jewish Center for Immunology and Respiratory Medicine, 1400 Jackson St., Denver, CO 80206. USA, Inc., was a multilevel company liquidated in 1987 after law enforcement agencies stopped it from selling dietary supplements with illegal claims [see Nutrition Forum 4:25-31, 63, 86].

CHO LOW TEA: A SCAM WITH A HAPPY ENDING

James A. Lowell, Ph.D.
Alison Lowell, M.S.

With cholesterol-consciousness expanding rapidly in America, what could be more timely than a product to reduce blood cholesterol while still allowing you to eat whatever you please?

According to full-page newspaper ads appearing this spring across the country, Cho Low Tea would do exactly that. At the top of the ad were pictures of ice cream, butter, a cheeseburger, french fries, two eggs, a croissant, Swiss cheese and a very-very-deep-fried chicken leg. "Before You Cut These Out, Cut This Out," the ad said, referring to itself. "New tea from China . . . is as effective as medically prescribed drugs in reducing cholesterol." A 30-day supply cost \$29.85, while the family size—said to provide a \$10 saving—cost \$49.70.

According to the ad, "Cho Low is a rare species of tea grown in China for centuries. Traditionally, the Chinese drink it after every meal as a diet aid. [When we asked our Chinese friends about this time-honored tradition, they wondered whether we were nuts.] Recently, during extensive western medical studies, researchers were astonished to discover that besides aiding weight loss, Cho Low Tea contains natural cholesterol-reducing properties." In addition, it supposedly: 1) is 100% safe and natural; 2) can add years to your life by preventing cholesterol buildup; 3) makes you look better; 4) makes you feel better; 5) aids digestion of fatty foods; 6) reduces water retention; 7) has kept Chinese slim for centuries; and 8) has none of the possible side effects of cholesterol-lowering drugs.

The ad included a photograph of Tristan Rogers, who plays Robert Scorpio in television's "General Hospital," accompanied by a testimonial statement: "The General Hospital set is stocked with junk-food. I'm too busy to get meals anywhere else, so I eat what's on the set. But I drink a cup of delicious Cho Low Tea after every meal. Despite a history of heart disease in my family, my cholesterol is perfect—and I've noticed an improvement in my appearance. In my business, that's important."

The ad also included endorsements from seven medical sources, including Dr. Harvey L. Alpern, a cardiologist from Century City, California, who said that "Published studies indicate that the tea reduces blood cholesterol." Another endorser was Dr. John Yudkin, a British physician whose book *Sweet and Dangerous* claims that sugar causes cardiovascular disease—a conclusion not accepted by mainstream medicine. Other testimonials were attributed to sources in France, Italy, China and Israel. The ad also displayed the logo of the Better Business Bureau.

According to James Ralph, vice president of the American Newspaper Publishers Association Credit Bureau, the ad began appearing June 11, 1989, and wound up in 105 newspapers, including the *Washington Post*, *Los Angeles Times*, *Fort Worth Star Telegram*, *Newark Star Ledger* and *Pittsburgh Press*. Apparently, the advertising departments at these prestigious papers saw nothing wrong with the ad.

This was not the case, however, with health and nutrition professionals throughout the country. The National Council

Against Health Fraud and many of its local chapters were flooded with inquiries about the tea. Callers suspected the claims were bogus and were concerned the tea might be used instead of effective dietary or pharmacological methods. So did Ralph, who has been conducting seminars on how to detect fraudulent ads and is probably the industry leader in trying to persuade newspapers not to publish such ads.

After obtaining a copy of the ad and a background packet distributed by its perpetrators, Ralph concluded it was a scam and contacted the Council of Better Business Bureaus as well as state and federal law enforcement agencies. On June 15, the council notified newspapers that had carried the ad that the tea's marketer, Virginia Investments Management Inc., of Beverly Hills, was not a BBB member and lacked permission to use its logo. BBB also asked the promoters to document their claims.

Meanwhile, Dorothy Matthews, an investigator for the California State Department of Health Services, contacted Mail Pac, the fulfillment house in Sun Valley, California, that was supposed to place incoming checks in an account for Virginia Investments and then mail the tea to customers. Matthews asked that the checks be held pending further investigation. By this time, about 2,000 orders had been received. Mail Pac's attorney agreed, and no money was forwarded to Virginia Investments.

Betty Garner, an investigator for the U.S. Postal Service, acquired copies of the studies the promoters claimed were evidence that their product worked. She then had them analyzed by Ernst Drenick, M.D., a medical professor at UCLA Medical School. Drenick, an expert on obesity and weight loss, concluded the studies were either irrelevant or did not support the claims made in the ad. The U.S. Attorney's office for the District of California then took civil action to get permission to return all orders to their senders.

Six days after printing the ad, our local newspaper, the *Arizona Daily Star*, published an article stating the ad was fraudulent. In the article, Dr. Donald McNamara of the University of Arizona's Lipid Metabolism Research Laboratory said he had never heard of the tea or the researchers quoted in the ad and had never seen any published research about the product. Irene Caro, Consumer Affairs Officer for the FDA's Los Angeles District, said the ads were obviously false and that newspapers carried them "knowing full well this is a fraudulent product." She also pointed out that the claims in the ad made Cho Low Tea a drug that would be illegal to market without FDA approval.

On June 23, the FDA sent a "Talk Paper" to its field offices, stating that there was no evidence to support the claims made for Cho Low Tea and that an investigation was underway. One week later, the Los Angeles police, acting on the information provided by the Department of Health Services, raided the Beverly Hills office of Virginia Investments and arrested Peter Clarence Foster, 26, and Trevor Brine, 42. Both men were Australians who, according to Matthews, entered the United States last February. In 1988, Foster and his mother, Lugina, fled England while awaiting trial for a scheme involving the sale

of almost \$7 million worth of a "Chinese slimming tea" advertised as a weight-loss aid. The tea, called Bai Lin Tea, had been marketed through Foster's company, Slimweight, U.K., which was convicted and fined £5,000. Foster had operated a similar scam in Australia that did not result in criminal prosecution. But the Australian Department of Consumer Affairs issued an official statement in 1985 warning the public about false and misleading claims for "slimming teas."

Foster and Brine were booked on charges of conspiracy to commit grand theft and jailed in lieu of \$500,000 bail for Foster and \$250,000 for Brine. By that time—less than three weeks after their first ad appeared—thousands of orders had been received. However, none were filled because the fulfillment house had no tea to send. In fact, no Cho Low Tea existed! When asked to provide a sample to the authorities, Foster and Brine submitted Coleco tea, a brand available from a local distributor. They said they had planned to repackage this or a cheaper brand, using their own boxes and labels, but had not yet done so.

What about the testimonials? Dr. Alpern said he did not know whether the product worked. Dr. Yudkin told the authorities he had never heard of Cho Low Tea. And the agent for Tristan Rogers didn't say much except that the information about Rogers' family was not correct.

On July 7, just a week after his arrest, Foster pleaded "no contest" to two counts each of false and misleading advertising and falsely representing a drug to have medicinal properties. He was sentenced to four months in the Los Angeles county jail, after which he must donate 900 hours of community service through the California Department of Transportation, picking up trash along the freeways. In addition, he was ordered to pay \$228,000 still owed to newspapers that carried the ads. Brine pleaded no contest to one violation of each of the above

charges and earned three months in the Los Angeles county jail. Both men were also placed on three years' summary probation with a provision that they could not sell tea or any product purported to have a health benefit.

Orders for the tea continued to come in. By the end of the first week of August, over \$250,000 had been intercepted by California authorities as a result of the ad. The Postal Service is marking current mail "OUT OF BUSINESS" and returning it to its senders, while the money intercepted earlier is being returned by the state authorities—accompanied by a letter advising the senders to be more careful about answering health ads in the future.

Law enforcement agencies acted quickly to put these scam artists out of business before millions of dollars were fraudulently extracted from consumers. This case can serve as a model for other regulatory action throughout the country. According to Ralph, the total owed to newspapers—none of which received payment in advance—was close to \$600,000. (The \$228,000 figure was a hastily contrived guess based on numbers found by the authorities in Foster and Brine's computer.) Despite the court order, most if not all of the newspapers that extended credit will probably be "punished" for their willingness to serve as the vehicle for a scam. However, we believe the public would benefit greatly if publishers who repeatedly help advertisers defraud their readers could be punished by the courts as well.

Dr. Lowell is Professor of Life Sciences at Pima Community College in Tucson, Arizona, and is vice president of the National Council Against Health Fraud. His wife, Alison, an NCAHF board member, is a Ph.D. candidate in nutritional sciences at the University of Arizona in Tucson. Together they operate the Nutrition Information Center, which produces teaching aids focused on quackery.

COALITION PUBLISHES HEALTH AND SAFETY AGENDA

A coalition of 27 consumer, health and insurance groups, organized by Consumer Federation of America, has published a seven-part, 60-page *Consumer Health & Safety Agenda* intended to reduce certain health and safety hazards in the United States. In March, the coalition delivered copies to President Bush, Health and Human Services Secretary Louis Sullivan and top Congressional leaders. Copies are also being distributed to governors, state health officials, consumer groups and various insurers.

The agenda's section on food safety and nutrition was coauthored by Ellen Haas, executive director of Public Voice for Food and Health Policy. Its recommendations include: 1) more stringent standards for testing meat, poultry, fish and shellfish; 2) consumer education detailing proper storage and handling techniques to avoid illness due to bacterial contamination (including salmonella); 3) stricter standards for permissible pesticide levels in foods; 4) increased consumer education about the nature and risks of chemical additives in food; 5) increased production and sale of additive-free foods; 6) increased study of the possible risks of food irradiation; 7) development by the FDA and USDA of "meaningful standards" for use of the term "natural" on food labels; 8) increased consumer education about health-promoting food choices; 9) nutrition labeling on all food

products, with standardization of serving sizes; 10) inclusion of any adverse information when health claims are made on labels; 11) use of low-fat products in school lunches; and 12) changes in agricultural subsidies and meat grading aimed at encouraging production of low-fat products. The coalition includes the American Academy of Pediatrics, the American Association of Retired Persons, the American Lung Association, and the Center for Science in the Public Interest.

Editor's note: Although some of the above recommendations are worthwhile, others seem to spring from an alarmist viewpoint expressed in the assessment that precedes the food safety and nutrition section of the report: "Americans on the whole can take advantage of the most abundant and varied food supplies in the world, and being more health-conscious, they are beginning to modify their diets to include more low-fat and high-fiber foods. However, hidden health threats are lurking in even the most 'healthful' foods. The fish and poultry we consume may be contaminated with salmonella or other organisms, the steak we eat may contain antibiotic residues, and our fruits and vegetables may be tainted with dangerous pesticides. These contaminants, along with chemical additives in the hundreds of processed foods we eat, place Americans at risk every time they take a bite."

DIETARY GUIDELINES FOR INFANTS

Consistent with the fact that children below the age of 2 are not "little adults," Gerber Products Company has published *Dietary Guidelines for Infants*, modeled after HHS/USDA's 1985 *Dietary Guidelines for Americans*. Gerber's guidelines are based on published statements by the American Academy of Pediatrics' Committee on Nutrition and were prepared with the help of seven nutrition experts. The guidelines are:

- *Build to a variety of foods.* Unlike adults, infants do not require a variety of foods to secure nutrition during the first six months or so of life. Human milk alone provides the vitamins, minerals, carbohydrates, fats and proteins needed for normal growth and development during early infancy. With the exception of fluoride, vitamin D in the absence of adequate exposure to sunlight, and possibly vitamin K, supplements to human milk are not required during this period. Infant formula is recommended as the best alternative to human milk if breast-feeding is not used or is stopped early. Most babies are ready to start supplemental foods around 4–6 months of age. Single-grain cereal is often the first food added after breast milk or formula. Other single-ingredient foods can be added gradually until the baby is eating a variety of foods. New foods should be added one at a time, at intervals of a few days. This allows the baby to get used to the flavor of the food and enables parents to see whether a food might not agree with the baby.

- *Listen to your baby's appetite to avoid over-feeding or under-feeding.* Although healthy infants can vary considerably from one another in their caloric intake, appetite is likely to be the most efficient way to determine what an infant needs. Most infants instinctively know how much food they need to grow and develop normally and will not undereat or overeat unless pressured. Babies should be fed when they are hungry but should not be forced to finish the last few ounces of formula in a bottle or spoonfuls of food in a dish. The baby's health advisor can chart growth and development to be sure that they are progressing normally.

- *Don't restrict fat and cholesterol too much.* Although low-fat and low-cholesterol diets are widely recommended for adults, they are not appropriate for infants under the age of 2. Nutritional requirements are higher during infancy than during any other period of life. At the same time, stomach capacity is limited, so food sources must provide sufficient calories and nutrients in a small volume. Infants require fat in their diet to satisfy needs for normal growth and development.

- *Don't overdo high-fiber foods.* Infants and small toddlers eating a well-rounded diet probably get enough fiber for their needs. A diet high in fiber may be too low in calories and may interfere with absorption of iron, calcium, magnesium and zinc. Although dietary fiber may help prevent certain diseases in

older adults, there is no proven benefit from increasing the fiber intake of young children above that provided by a healthy diet.

- *Sugar is OK, but in moderation.* Sugar, which exists in several forms, is a source of calories and makes some foods taste better. Breast milk, the ideal food for infants, contains lactose, which is similar to table sugar. Other foods in a balanced diet may contain moderate amounts of sugar, but excessive amounts of such foods can crowd out more nutritious foods. Sugar has not been shown to cause hyperactivity, diabetes, obesity or heart disease. It is linked, however, to tooth decay. Dental care, proper bottle feeding, and the use of fluoride can help control and prevent tooth decay. Bottles of milk or juice should not be used as pacifiers to put a baby to sleep because prolonged contact with the natural sugars in these liquids can cause tooth decay. Artificial sweeteners are not recommended for infants.

- *Sodium is OK, but in moderation.* Although the amount of sodium in the diet is related to high blood pressure in a small percentage of adults, the amount of sodium in an infant's diet has not been shown to cause high blood pressure in later life. Even though healthy infants can tolerate a range of sodium intakes without ill effects, moderation in sodium intake is urged. Sodium intake often increases when foods prepared for the family are introduced.

- *Babies need more iron, pound for pound, than adults.* Infants are born with a stored supply of iron that lasts for the first 4–6 months of life. Iron is more likely than any other nutrient to be lacking in the infant diet. For this reason, special efforts should be made to provide infants with iron during the first two years. In addition to breast milk, the best sources are iron-fortified formula and iron-fortified infant cereal.

According to Gerber officials, their guidelines were prompted by a telephone survey showing that many parents were inappropriately responding to adult nutritional guidelines by giving their babies skim milk instead of whole milk. In addition, cases have been reported of older children who failed to grow properly because of overzealous medically unsupervised dietary treatment for high cholesterol levels [American Journal of Diseases of Children 143:537–542, 1989]. Two versions of the Gerber guidelines have been published, a 20-page booklet for consumers and a 36-page booklet for health professionals. Either can be obtained free of charge by calling Gerber's consumer information center at 1-800-4-GERBER. Although the American Academy of Pediatrics has not officially endorsed the guidelines, one section of the professional booklet was written by Laurence Finberg, M.D., the chairman of the academy's nutrition committee. The company has announced plans to distribute more than a million brochures to pediatricians on its mailing list.

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ARTHRITIS: FOLK REMEDIES AND QUACKERY

William T. Jarvis, Ph.D.

The term "arthritis" encompasses more than a hundred conditions. Although the term literally means "inflammation of a joint," some types of arthritis involve pain without inflammation. People tend to lump them all together when applying folk remedies, and quacks rarely differentiate between the various types when making claims for "cures." If a relationship actually exists between nutrition and arthritis, it is unlikely that a dietary change will be effective for most types of arthritis or even for most people with the same type.

Folk medicine derives from the basic beliefs and values of a culture. It includes both self-care and the activities of folk healers. These practitioners typically specialize in "what everyone knows" (misbelieves to be true) and hold views similar to those of their clients about the causes and treatment of disease. Self-treatment, home care and friendly advice given without anticipation of financial gain can be considered folk medicine rather than quackery, even if they are erroneous. However, folk medicine has often served as the basis for the commercial promotions of quackery.

Beliefs about Arthritis

What does "everyone know" about nutritional therapies for arthritis? When investigators at the University of Toledo conducted a random telephone survey of 300 people, they found that almost half believed incorrectly that arthritis could be caused by "poor diet" or "cold, wet climate." Regarding treatment, 76% replied vitamins were useful and 57% said special diets were useful. Among college graduates, 81% believed in vitamins while 52% believed in special diets [Arthritis and Rheumatism 26:462-471, 1983].

How widespread is self-treatment for arthritis, and how much involves nutrition-related practices? At least four studies have been reported.

- Researchers at the University of Alabama found that 92 out of 98 (94%) unselected arthritis patients had tried more than one unproven remedy, with an average of four and a maximum of 13 remedies tried. Fifty-three (54%) had used "special diets or foods" [Arthritis and Rheumatism (Supplement) 23:S759-760, 1980].

- Researchers at Stanford University School of Medicine found that about one-third of rheumatoid arthritis (RA) patients reported experience with unproven therapies, with an average of three different remedies each. Diets, copper bracelets, vitamins and acupuncture (and acupressure) were most popular. Users did not differ from nonusers in demographic characteristics or severity of their disease, but were less satisfied with their physicians [Arthritis and Rheumatism (Supplement) 23:S657-658, 1980].

- In the United Kingdom, researchers who studied 199 RA patients found that 68% reported using "alternative therapies" and 42% had tried more than one. Oral treatment (including homeopathic remedies) was the most popular (41%), followed by copper bracelets (37%) and "special diet" (32%). Among the remedies were 15 different diets and 28 oral treatments [Rheumatology 3:151-152, 1983].

- In Ireland, researchers studied 100 randomized patients attending a rheumatology unit of a large hospital. Eighty-one had tried at least one remedy. Dietary modification—used by 60—was the most common unorthodox approach [Irish Medical Journal 76:464-465, 1983].

How do patients rate the nutritional remedies they have tried? Investigators in the Stanford University study concluded that up to half reported some subjective benefit. Self-devised diets were rated more effective than those of popularized arthritis diet books, and those reporting benefits had less severe disease. No objective benefit could be documented for any of the therapies used. Forty-three percent of patients reported success with special diets in the United Kingdom study and 21% reported success with "oral treatments." Only 8% reported benefit from the copper bracelets.

Placebo Effects

The Latin word placebo means "I shall please." The placebo effect is a favorable response to the act of treatment rather than the treatment itself. How much of patient satisfaction is due to the placebo effect? This question has no easy answer. Placebo responses are highly variable, as are the factors that contribute to their occurrence.

Only one feature is required for a placebo effect to occur: the patient must be aware that something has been done. Contrary to popular opinion, it is not necessary to believe in the therapy. Although faith may help elicit a placebo response, even nonbelievers may respond favorably to suggestion or operant conditioning.

The power of suggestion to alter body function is well established by research with hypnosis. Blisters have been induced and warts made to disappear through suggestion.

Operant conditioning can occur with positive reinforcement when behavior is rewarded or with negative reinforcement when behavior is "punished." Thus, a person with a history of favorable response to treatment is more apt to react well to the act of treatment. However, operant conditioning can also occur rapidly, as illustrated by a fascinating account involving a man who underwent exercise testing. At a certain workload, the man had chest pain and an abnormal electrocardiographic pattern. Immediately afterward, when working at a less strenuous pace, he reacted with pain and an abnormal ECG when told he was at the higher workload [American Journal of Cardiology 40:630-634, 1977].

The route of administration (i.e., invasive or noninvasive) is another factor that can affect placebo response. Procedures that involve touching have greater placebo potential than those that do not. The laying-on of hands often causes a person to relax and become more suggestible. The setting in which a treatment is given and the mind-set of the patient can also influence the response.

A setting in which care-givers are confident or enthusiastic about a procedure can enhance placebo response. A culturally significant setting can also produce a potent effect, as folk healers well know. Effective settings can be as divergent as the trappings of an oriental herb shop to Asians, a circle of witchcraft paraphernalia to a primitive tribesman or the atmosphere of a modern clinic to an urban American. Social expectations can also play a role, as in stoic cultures where people are taught to endure pain and suffering without complaint.

Use of placebos can have negative aspects that often are overlooked. Not only are patients deceived, but care-givers can also be deceived if they are not fully aware how placebos function. It is wrong to believe a placebo response by a patient proves the problem is only "in the mind." Such placebo responses as feeling less pain or more energy are subjective and can occur without affecting the actual course of the disease. In other words, a placebo response can obscure real disease, which can delay appropriate diagnosis or treatment. There are times when placebo use may be justified, but this should be weighed carefully each time it is considered by a practitioner.

Spontaneous Remission

Arthritic diseases commonly involve cycles of worsening followed by improvement. If improvement occurs after use of an unproven remedy, the happy patient may become convinced the remedy caused the improvement. But even lack of improvement may not be interpreted as lack of effectiveness of the remedy. Researchers have found that a person's evaluation of treatment depends not only on what takes place but also on how it compares with their expectation. With a disease that has ups and downs, a skillful quack may retain the patient's confidence

no matter what happens. If the patient feels no better after a course of treatment, this can still be interpreted as an expected response, and the dosage can be adjusted or the patient advised to continue the treatment. When the patient feels better—whether spontaneously or not—the quack, of course, claims credit.

Diet and Arthritis

Can diet or dietary supplements provide any real benefit to arthritis sufferers? In Sweden, clinical researchers compared two groups of randomly selected patients with RA. The first group contained 16 patients who fasted (with fruit and vegetable juices) for seven or ten days and then ate a lactovegetarian diet for nine weeks. The control group contained ten patients who ate a normal diet after fasting. During the fasting period, five members of the experimental group and one of the control group showed improvement, but by the end of the experiment, only members of the diet group remained improved [Scandinavian Journal of Rheumatology 8:249-255, 1979].

A research team in Florida tested the diet advocated by Colin H. Dong, M.D., with a ten-week, controlled, double-blind, randomized trial of RA patients. Eleven patients were placed on this diet, which excludes "additives," preservatives, red meat, fruit, herbs and spices, vinegar and dairy products. The diet permits fish (no sardines), six ounces of chicken per week, egg white, vegetable oil, soybean margarine, oatmeal, cream of wheat, grits, sugar, maple and corn syrup, Sweet & Low, coffee, non-herb tea and soda water. Fifteen patients were placed on a placebo diet that resembled the experimental diet but included various forbidden foods. Using objective criteria, six patients improved on the placebo diet and five improved on the experimental diet [Arthritis and Rheumatism 26:462-471, 1983].

Another research group in the United Kingdom put 53 RA patients through a "washout" period during which all medication was discontinued except two placebo capsules and two acetaminophen tablets four times daily. Twenty-five patients

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were placed on six weeks of diet therapy, while 24 continued on placebo therapy. After six weeks the control group was also placed on diet therapy. The diet therapy consisted only of foods of which the patient was most likely to tolerate. Other foods were reintroduced one at a time to see whether symptoms were produced. Any foods producing symptoms were excluded. A trained clinical observer blind to each patient's current therapy made ratings of pain, stiffness, grip strength and walking time, and recorded various laboratory measurements. Researchers reported significant improvement in pain reduction, morning stiffness, grip strength and fibrinogen levels (a measure of inflammation) during periods of dietary therapy compared to placebo periods, particularly among "good responders." They noted that a portion of the improvement was due to a placebo response, but this was not sufficient to explain the whole improvement [Lancet February 1:236-238, 1986].

Researchers in New York studied the effects of fish oil supplements and an experimental diet high in polyunsaturated and low in saturated fat for 12 weeks versus a control diet with a lower polyunsaturated-to-saturated-fat ratio and a placebo supplement. Subjects were followed for one to two months after the diet and supplements were stopped. The results of this randomized, controlled, double-blind, follow-up study showed "a clear, though modest, difference between the experimental and control groups in some of the clinical manifestations of rheumatoid arthritis," favoring the experimental program.

What do these reports mean? Most arthritis sufferers treat themselves with unproven methods, and a substantial number will experiment with diets and supplements. Many will conclude these dietary manipulations helped them. Some of the subjective benefits experienced can be attributed to placebo effects, natural variations in the symptoms of their diseases or associated effects such as weight loss. However, some benefits may be due to the dietary changes themselves. (It has been speculated that dietary change helps by eliminating an obscure food allergy or modifying an immune system response to inflammation.) Since favorable results seem to be highly individual phenomena, only blinded, crossover tests can determine whether a method really works for an individual patient. Of course, even if a method works for an individual, the mechanism could still be a placebo response.

The percentage of arthritis patients who can benefit from nutritional measures is probably quite small. But health care providers should be tolerant with patients who wish to try them and help these patients avoid hazardous dietary practices.

Hazardous Remedies

Dangerous dietary remedies include any that encourage poor nutritional practices over a long period of time. The study that reported positive findings on fasting could cause someone to fast without supervision. Prolonged nutritional deprivation can have serious consequences.

More often, hazardous self-care involves the use of supplements. Overuse of fish oils puts a person at increased risk of stroke. Herbal remedies are often promoted as "nutrition products," however when gathered in the wild or from health food or herbal stores, many pose a significant hazard. Misidentification of herbs used to relieve arthritis has killed people

[Morbidity and Mortality Weekly Report 26:257-259, 1977], as have Chinese herbal pills containing uncertain amounts of potent, naturally occurring pharmaceuticals.

Where does quackery fit into the picture? Quackery can be defined as "the promotion of medical remedies known to be false, or which are unproven, for a profit." Dubious products for nutrition-related, arthritis self-care include herbal remedies, vitamin supplements and books touting special regimens. Although it has been shown above that altering dietary practices may work for some people, none of the dietary approaches found to be of modest benefit are similar enough to constitute a simple prescription for all that can be put in a bottle or presented in a popular diet book. Any benefit experienced by arthritis patients who fall for such promotions can be attributed to good luck. Fish oil supplements show some promise, but they are not hazard-free and should be used as carefully as any drug for arthritis. "Drugless practitioners," such as chiropractors and naturopaths, should be avoided if they advise patients to discontinue needed medication for dietary and/or herbal "alternatives." This has proved fatal in some cases.

Conclusion

Health professionals should be sensitive to the feelings and beliefs of arthritis patients who believe they have been helped by nutritional self-treatment. However, it would be a dereliction of duty to allow potentially harmful beliefs to persist. Health education should begin early. The Alabama study found that only 5% of patients had engaged in self-treatment before contacting a physician for their arthritis. This means physicians have a good opportunity to educate most patients about the natural course of their disease, the placebo effect and the potential harm involved in using unproven remedies.

Patients intending to use an unproven remedy would be wise to discuss it with their respective physicians. That way they can be steered away from frankly dangerous methods and can be helped to evaluate what happens with relatively harmless methods. Patients who learn to conduct their own crossover studies may experience a beneficial response. This may still be due to a placebo effect involving their own operant conditioning, beliefs or suggestibility, but it may be worth continuing if it works for them consistently. However, both patients and providers must be careful not to allow illusory improvements to steer them away from effective medical care.

Dr. Jarvis is a professor in the department of preventive medicine at Loma Linda University and president of the National Council Against Health Fraud.

INFORMATION WANTED

If you find any newsworthy items, such as a published article or news report, or have a personal experience that might be of interest to our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

A SPECTRUM OF DIET BOOKS

Lisa T. Harris, R.D.

The American public seems to have an insatiable appetite for anything that offers quick, safe, permanent weight loss. With 34 million overweight adults in this country and 30% of women between the ages of 19 and 30 dieting at least once a month, it is no surprise that diet books can be extremely popular, with several making the best-seller list each year.

Lately there has been an increase in books written by masters-level nutritionists and registered dietitians. However, as is often the case with physician-authored plans, credentials do not guarantee accuracy. This has also been a time for sequels, with Martin Katahn rotating into the T-factor and Judy Moscovitz complementing her rice diet with her *Dieter's Companion*. The "calories-don't-count" theme has been revived but with an emphasis on cutting fat intake.

Now more than ever the public is faced with books that mix legitimate research findings with pseudoscience. Laypersons will find it difficult if not impossible to sort through this ever-growing maze of misinformation.

This article presents ten noteworthy books that vary considerably in quality. All are part of the multibillion-dollar market in which the public searches for a "magic bullet" for obesity.

Recommended

The Weighting Game (1988)

Lawrence E. Lamb, M.D.

Lyle Stuart Inc., Secaucus, New Jersey

Hardcover, 266 pp, \$15.95

Dr. Lamb, a nationally syndicated columnist, wrote this book because "Gaining an understanding of what controls body weight is the best protection people can have against being ripped off." Using a question-and-answer format, he explains in detail many of the metabolic processes involved in determining body weight. He recommends a low-fat, high-carbohydrate program without excessive caloric restriction plus exercise to increase the metabolically active muscle mass. He also discusses the drawbacks of other diet programs and weight-loss aids.

The Weighting Game is a useful reference for health professionals and serious dieters interested in the whys and hows of weight loss. The dietary advice is up-to-date, well researched and accurate. The text is sometimes technical, but chapter summaries, charts and drawings help clarify important points.

The New American Diet (1986)

William E. Connor, M.D., and Sonya L. Connor, M.S., R.D.

Simon and Schuster, New York, New York

Hardcover, 410 pp, \$18.95

The Connors' program is based on a five-year NIH-sponsored study whose goal was to determine "just how many and what kind of desirable dietary changes typical Americans could comfortably make." The resulting program includes three phases of gradual change, focusing on menu modification and eventually decreasing fat intake to 20% with carbohydrate at 65%. The authors offer what they believe is "the most sensible available weight-loss approach" through weight-reduction plans of 1,000–1,200 calories for women and 1,800–2,000 for men. The book also provides helpful advice on handling special eating occasions.

The New American Diet can be a valuable reference for professionals as well as the general public. It provides a reasonable, gradual plan based on solid scientific research. It is full of charts, graphs, tables and illustrations, all of which are interesting and helpful. Information on specific food items and nutrient content, as well as menu substitutions, is also valuable.

The I-Don't-Eat (But-Can't-Lose) Weight Loss Program (1989)

Steven Jonas, M.D., M.P.H., and Virginia Aronson, M.S.,

R.D. Rawson Associates (Macmillan), New York, New York

Hardcover, 250 pp, \$18.95

This program was developed mainly for those the authors call "diet-induced low-calorie overweight" individuals who may not lose weight on a low-calorie regimen because repeated dieting has left their bodies highly efficient at saving energy. To overcome this situation, the authors present their IDEAL (I Don't Eat A Lot) exercise and eating program. The exercise component, which stresses pacewalking or brisk striding, is introduced gradually over a six-month period. Calorie counting is shunned, while fat slashing is promoted.

The book is well researched. Its diet plan is healthful, with adequate servings from the major food groups. The breakdown of 30% fat, 55–60% carbohydrate and 10–15% protein is in line with most recommendations today. In addition to exercise and diet, "mind-set strategies" are also discussed, with self-evaluative questions on many lifestyle topics. A discussion of the special nutritional needs of women is also very useful.

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Marginally Recommended

The T-Factor Diet (1989)

Martin Katahn, Ph.D.

W.W. Norton & Co., Inc., New York, New York
Hardcover, 301 pp, \$18.95

The author of the best-selling *Rotation Diet* returns with this book on thermogenesis, the "T-factor." His basic premise is that dietary fat is the main factor in determining the amount of body fat because the body is most efficient at metabolizing dietary fat into fat stores. He recommends eating a low-fat diet (i.e., 20–40 g for women) rather than counting calories. He also recommends exercises involving whole-body movement for burning fat.

The idea of thermogenesis has been around for many years, so Katahn's theory is by no means a "breakthrough." It is known that fat is more efficiently metabolized than carbohydrate, but the degree to which this occurs and the significance of this finding are debatable. However, the practical recommendations in this book are sound. A computerized analysis reveals that 15% of the 1,570 calories in the recommended diet comes from fat (26 g). Thus, dieters who follow it will reap the benefits of a low-fat intake.

Elizabeth Takes Off (1987)

Elizabeth Taylor

G.P. Putnam's Sons, New York, New York
Hardcover, 256 pp, \$17.95

For those who enjoy reading about the lives of the rich and famous, this book is a must. In this work, Ms. Taylor discloses the saga of her battle of the bulge from a size 14 to size 6 and shares her "Taylor-made" program: a 14-day diet, an exercise component and lots of practical advice. She reminds women that her diet program is not a miracle and urges them to accept the body nature has provided. She encourages women to keep their sense of humor and to reward themselves.

A computerized analysis of her 1,000-calorie diet plan reveals it is relatively high in protein (37%) and low in carbohydrate (39%), while the fat content is commendable (24%). She proposes a seven-day maintenance plan of 1,200–1,500 calories, which provides dubious protection in the struggle for long-term weight control. But although the book cannot be recommended for its dietary regimen, readers may still enjoy the honest writing style. They may also benefit from Ms. Taylor's behavior advice, especially her reminder that women can look and feel good while dieting and that "diet food" can look and taste good.

The Stop-Light Diet for Children (1988)

Leonard Epstein, Ph.D., and Sally Squires, M.S.

Little, Brown and Co., Boston, Massachusetts
Hardcover, 232 pp, \$16.95

This book is designed to help children aged 6 to 12 lose weight through a program of nutrition, exercise and behavior change. The diet plan is based on ten years of research with 1,000 participants at the University of Pittsburgh School of Medicine. The plan groups foods into three categories: green (very low in calories), yellow (the mainstay of the diet) and red (high in calories). Low-fat eating with sensible portion sizes and

good food choices is emphasized. Parental involvement is imperative, but children are taught to take responsibility for their own actions.

The book is written in two sections, one for parents and another with corresponding chapters in larger print for children. The stoplight concept simplifies decision-making. No foods are "forbidden," and the emphasis on gradual, permanent change with family involvement is a plus. However, the recommended intake of 900–1,200 calories and 20% fat (derived from our computerized analysis of sample menus) may be too low for growing children. Generally, though, the book contains good advice for families interested in controlling childhood obesity.

Not Recommended

The Two-Day Diet (1988)

Tessa Cooper, M.S., and Glenn Cooper, M.D.

Random House, Inc., New York, New York
Hardcover, 227 pp, \$16.95

According to the Coopers, "Anyone can stay on a diet for two days." So they have devised a weight-loss program presumably for everyone. Their two consecutive On Days are ketotic at 700–800 calories. These are followed by an Off Day, which provides a more balanced diet with 1,200 calories. The program is said to produce maximum motivation and rapid fat-burning. After two to six weeks, dieters enter "metabolic readjustment," a phase claimed to avoid the rapid refilling of fat cells. Exercise is stressed throughout.

The authors project weight loss at 3–7 pounds a week. On Days contain 77 g of carbohydrate and are low in fiber and many vitamins and minerals. And dieters may be disappointed with the Off Days, where "the foods you love" include such "craved" items as 1 tbsp butter, 3 tbsp sour cream and ½ small donut. The authors claim lean body mass will be spared because of the high-protein nature of the diet and exercise components. Yet they offer no references to back up these claims or most others made in the book.

Maximum Metabolism (1989)

Robert M. Giller, M.D., and Kathy Matthews

G.P. Putnam's Sons, New York, New York
Hardcover, 224 pp, \$16.95

The authors of this book promise a program that paves the way to quick, permanent weight loss by eliminating hunger, cravings and stress. Touted as "the first book that tells you how to alter your metabolic rate," *Maximum Metabolism* recommends a 21-day, low-fat, high-complex-carbohydrate diet of 900 calories, proper timing and sequence of meals, and regular exercise. However, supplements such as guar gum, chromium, L-tryptophan and "antistress vitamins" are also recommended as "biochemical boosters" to correct faulty metabolism.

Maximum Metabolism is filled with unscientific claims. For example, the authors state that stress slows your metabolism, less starch equals faster weight loss, a diet low in fat will inevitably be low in calcium, and artificial sweeteners may have the same effect on insulin levels as natural sugar. Any weight loss accomplished on this program would be caused by its 900-calorie diet, which is deficient in several major nutrients.

Not Recommended (Cont.)

How to Win at Weight Loss (1987)

Stephen Langer, M.D., with James E. Scheer
Thorsons Publishers, Inc., Rochester, Vermont
Hardcover, 236 pp, \$14.95

Dr. Langer claims to have produced the definitive weight-loss book for people tired of dieting. Instead he stresses the elimination of what he calls eight "roadblocks" to weight loss: hypothyroidism, *Candida albicans*, hypoglycemia, allergies, adrenal exhaustion, heavy metal intoxication, immune system deficiency and emotional disturbances. And he claims that "An upgrading of diet through judicious selection of foods with vitamin, mineral, and, often, enzyme supplementation not only improves health but enables the overweight and obese to lose—often with amazing ease."

The book is filled with nonsense. Hypothyroidism is said to afflict 40% of the population, and yeast infection (candidiasis) is also said to be a common factor in obesity. Foods with allergens are said to be "capable of causing hypoglycemia or hyperglycemia." Odorless liquid garlic, gamma-linolenic acid and glucomannan, along with megadoses of vitamins, are recommended for various conditions. These "natural" ways to lose weight are based primarily on case histories. To help readers decide whether they suffer from hypothyroidism, candidiasis or hypoglycemia, the book lists the supposed symptoms of each. But many of the symptoms listed are so common and nonspecific they provide no basis for accurate self-diagnosis.

The Rice Diet Report (1986)

Judy Moscovitz
G.P. Putnam's Sons, New York, New York
Hardcover, 242 pp, 16.95

This book reveals the supposed diet secrets of Dr. Walter Kempner's Rice House in Durham, North Carolina, where more than 20,000 people have been treated in the last 40 years. The program consists of six diet phases, ranging from Phase I (rice, fruit and a few vegetables) to Maintenance. Salt and dairy products are generally taboo, as is snacking. During Phase I (which dieters may stay on for several months), a two-week 15- to 25-pound weight loss is predicted. Exercise is recommended and many behavior tips are provided (Moscovitz is a former psychotherapist).

The diet is bland, and although it is low in fat, cholesterol and sodium, it is also deficient in calories (approximately 700 per day), protein and many key nutrients (especially iron, calcium and vitamin B₁₂). The book contains several bizarre statements. For example, "If you don't have any cholesterol problems, you may now add plain white vinegar to your list of permissible condiments," and "A quart of milk may be more deadly to some than a quart of rotgut whiskey." Worst of all, the author suggests the plan is healthful for growing children.

Ms. Harris edits and publishes *Current Diet Review*, a bimonthly newsletter that evaluates nutrition books and other publications. Subscriptions are \$20/year from P.O. Box 1914, Rialto, CA 92377.

BRIEFS

Fitness and mortality. A large prospective study has found that "Higher levels of fitness appear to delay all-cause mortality primarily due to lowered rates of cardiovascular disease and cancer." The findings were consistent after adjustment for age, serum cholesterol level, blood pressure, smoking habits, fasting blood sugar level, family history of heart disease and length of follow-up. Fitness was determined through treadmill testing. The study, conducted by Kenneth H. Cooper, M.D., and colleagues at the Institute of Aerobics Research in Dallas, Texas, followed 10,224 men and 3,120 women for an average of eight years [JAMA 262:2395-2401, 1989].

Protein "packaging." Researchers at the USDA's Agricultural Research Service in Albany, California, are testing the ability of nearly invisible coatings of casein (milk's major protein) or plant proteins plus a small amount of vitamin C to protect sliced fruits and vegetables and other ready-to-eat foods from spoiling.

Criminal convictions. Three individuals involved in the manufacture and marketing of E-Ferol have received prison sentences. The drug, an intravenous vitamin E solution marketed without FDA approval, was responsible for the deaths of 38 premature infants in 1983 and 1984 before it was recalled from the market.

USDA research funds. During fiscal year 1988, the USDA spent \$142.3 million for educational activities and \$60.4 million for research related to human nutrition (1,031 projects).

New data on fiber and cholesterol. James Anderson, M.D., and colleagues at the University of Kentucky have reported that incorporating more fiber into the American Heart Association's recommended diet enhances the beneficial effect on cholesterol levels. The study involved 179 healthy men and women, 30-50 years of age, whose initial serum cholesterol values were between 200 and 300 mg/dl. The subjects were randomly placed into an AHA group, a high-fiber group or a control group. The AHA and high-fiber diets were identical in cholesterol content and percent of calories from carbohydrate, protein and fat, but the high-fiber diet emphasized soluble fiber (found in oats, dried beans and all fruits). Both diet groups received intensive counseling, while the control group received none. After a year, the high-fiber group averaged a 12.8% reduction of total blood cholesterol and a 17.6% reduction of LDL-cholesterol. The AHA group averaged reductions of 9.5% and 13.5%. The control group experienced reductions of 6.7% and 9.7%. The report was presented by Dr. Anderson at the Association's annual scientific session in New Orleans on November 13.

Book bargain. The softcover edition of *Popular Nutritional Practices*, by Jack Z. Yetiv, M.D., Ph.D., which lists for \$12.95, is available to *Nutrition Forum* readers for \$9.95 each or in cases of 32 for \$160, postage included. Orders, which must be prepaid, should be sent to Popular Medicine Press, P.O. Box 1212-N, San Carlos, CA 94070. The 1987 book, which received excellent reviews in major journals, covers more than 100 contemporary nutrition topics.

L-tryptophan toxicity. In mid-November, the FDA initiated a Class I recall by asking manufacturers of over-the-counter products in which L-tryptophan is the major ingredient to remove them from the market. (A Class I recall is "a situation in which there is a reasonable probability that use of, or exposure to, a violative product will cause serious, adverse health consequences or death.") Early in January, it was announced that more than 1,000 cases of a rare blood disorder called eosinophil-myalgia syndrome had occurred in users of L-tryptophan, with seven deaths and 139 hospitalizations. At least a dozen brands are implicated. The U.S. Centers for Disease Control, which is collecting case reports, has established a link between the amino acid supplement and the syndrome, which is characterized by severe muscle pain and joint pain. Some patients also exhibit weakness, swelling of the arms and legs, fever and skin rash. The investigation has not established whether L-tryptophan itself or some contaminant introduced during its manufacture is responsible for the outbreak. The health food industry has been promoting L-tryptophan to treat sleeplessness, depression, PMS and overweight. According to *Whole Foods* magazine, L-tryptophan first gained national exposure after a 1979 article in the *National Enquirer*, which touted it as a "miracle pill" for relieving stress, depression and insomnia.

Notable quote. "L-tryptophan is but one more in a long list of nutritional products that expose the public to serious harm. The marketing of all such unapproved drug products must be attributed in part to FDA's lax enforcement policy. How many more people must be exposed to harm, what level of confusion, deception and chaos must appear in the marketplace before FDA will announce that it expects the [supplement] industry to comply with the law? A lax enforcement policy serves to license crime."—Paul J. Sage, an FDA Consumer Safety Officer who has petitioned the FDA to use more criminal prosecution to clean up the illegal "supplement" market [*Nutrition Forum* 1:1-2, 1984].

Water treatment suit settled. In October 1988 the Federal Trade Commission found that Norelco had engaged in false advertising by claiming its Clean Water Machine removed possibly harmful chemicals from drinking water when its replaceable filter actually added a potentially hazardous chemical (methylene chloride). After the FTC ruling, several owners of the device filed a class action suit against North American Philips Corporation, Norelco's parent company. As part of the settlement, Norelco agreed to provide a fund of \$2.5 million for use in paying refunds to purchasers.

FTC attacks Fibre Trim. The Federal Trade Commission has charged Schering Corporation with making deceptive and unsubstantiated advertising claims that Fibre Trim can suppress

appetite or help control weight. The agency also objects to claims that the product can provide the health benefits associated with a fiber-rich diet, that it provides 2.35 g of fiber per serving and that the recommended daily dosage would contribute significantly to a person's daily dietary fiber intake.

WIC increase. The Child Nutrition and WIC Amendments Act of 1989, signed into law in November, includes a fiscal year 1990 appropriation for WIC of \$2.158 billion, \$118 million over current services plus inflation. This is the largest increase in five years, enabling WIC to serve 210,000 new participants. The WIC program provides food to help pregnant and lactating women, infants, and children aged 5 and under to improve their diets and reduce their chances of health problems due to poor nutrition [*Nutrition Forum* 5:9-11, 1988]. The new law also provides funds for promoting breast-feeding.

Unusual gift. According to an Associated Press report, a 43-year-old man from Illinois who weighed 430 pounds last August donated about four square feet of excess skin to be used for skin grafts in burn patients. After a 173-pound loss on a high-protein weight-loss regimen, 19 more pounds of pendulous skin and adjoining tissue were surgically removed to lessen the strain on his back. Donated skin serves as a temporary "living bandage" while a burn patient's skin regenerates. Then the borrowed tissue sloughs off. Most skin for transplants is obtained from dead bodies. The donor, Dennis Genz, is equipment coordinator for Sherman Hospital, Elgin, Illinois.

HeartGuide update. The American Heart Association's HeartGuide program—under which seals of approval will be issued for products low in cholesterol, total fat, saturated fat and sodium—is scheduled to begin in February 1990. One hundred products are being tested for possible endorsement. Companies in the program must pay \$10,000 to \$40,000 to enroll plus \$5,000 to \$600,000 for an education fee. According to the AHA, the fees will equal the costs of testing, national advertising, messages on product packages, brochures and other in-store materials that explain the program and stress the importance of the overall diet in the prevention of heart disease. The fees were originally higher but were reduced in response to criticism from food processors and the press. The HeartGuide logo is a bold red heart with a checkmark in its center. The program was planned to include margarines and spreads, shortenings and oils, frozen dinners and entrees, canned and frozen vegetables, and crackers. However, the USDA has ruled that food products containing meat and poultry cannot carry the AHA logo. USDA officials have expressed concern that a seal of approval on specific food items cannot convey the importance of a total diet and that foods so labeled will be perceived as "good," while other foods are perceived as "bad." AHA officials insist that the educational campaign will supply the correct perspective.

Quackery conference. The Second National Conference on Health Fraud, Quackery and Misinformation has been scheduled for September 16-18 in Kansas City, Missouri. Information about the program can be obtained by contacting John Renner, M.D., Consumer Health Information and Research Institute, 3521 Broadway, Kansas City, MO 64111, (Telephone, 816-753-8850).

Obesity newsletter changes name. The *International Obesity Newsletter* has been renamed *Obesity & Health*. An eight-page monthly, it covers nutrition research, diet frauds, weight-reduction techniques, recent books, educational materials and other topics related to weight control. *Nutrition Forum* subscribers can get a free sample issue by sending a self-addressed 4 x 9½-inch envelope to *Obesity & Health*, Route 1, Box 6A, Hettinger, ND 58639.

Alcohol popularity decreasing. The U.S. Centers for Disease Control (CDC) has reported that per capita consumption of distilled spirits (whiskey, rum, vodka and gin) in 1986 was the lowest since 1959, while per capita consumption of alcohol in all alcoholic beverages combined—2.58 gallons—was the lowest since 1977. Two out of three American adults drink, CDC reported, but 10% of drinkers (6.5% of U.S. adults) account for half of the alcohol consumed. A recent Roper poll found that 56% of Americans feel advertising of alcoholic beverages should be banned.

"Trojan horse" nutrition bill? Senator Tom Harkin has introduced the Nutrition and Health Act of 1989, a bill initiated

by the National Nutritional Foods Association, the major trade organization that represents health food industry retailers, manufacturers and distributors. The bill calls for creation of a permanent Federal Council on Nutrition and Health within the Department of Health and Human Services. The purposes of the Council will be to: 1) collect information about the relationships between nutrition and health, 2) monitor research, 3) monitor the progress of nutrition education, and 4) serve as a clearinghouse for such information. The originator of the proposal, Richard Merrium of Global Marketing Associates (a germanium distributor), believes establishment of the Council will bring "official recognition" to the health food industry by the federal government. To promote the bill, the industry has organized the National Nutrition Coalition with an office in Washington, DC. In a message to prospective supporters, the Coalition says the proposed agency will include all scientific research on nutrition and health in its database but "will not determine which scientific data are correct." This set-up, says the Coalition, should enable the natural food industry to gain credibility with consumers by presenting information "on file with the Federal Council on Nutrition and Health." The Coalition also hopes information from the database can be used to defend health claims challenged by the FDA.

CONTROVERSY LINGERS OVER "NEW" RDAS

The tenth edition of the National Research Council's *Recommended Dietary Allowances* has finally been released. But several authors of the draft upon which the report is based have asked that they be given proper credit for their work and that scientific errors in the new report be corrected.

The NRC press release of October 24, 1989, states, "The new RDAs are the product of a research review conducted by a five-member subcommittee of nutrition experts from the Food and Nutrition Board. . . . In addition, some 20 consultants assisted the subcommittee with its work. . . . An earlier RDA committee worked on the tenth edition from 1980 to 1985. It was disbanded by the National Research Council as a result of differing scientific opinions among the committee members, the Food and Nutrition Board, and independent reviewers appointed to critique the committee's draft report."

In 1985 the controversy erupted over the RDA committee's draft report, which lowered the values for vitamins A and C [Nutrition Forum 3:1-2, 1986]. The NRC refused to publish this report and discouraged outside publishers with threats of legal action. The NRC also refused to convene a meeting of the committee, the Food and Nutrition Board and anonymous reviewers of the draft to negotiate the issues involved. A suggestion to publish the 1980-1985 committee's work while retaining the 1980 values for vitamins A and C was also turned down. Six portions of the committee's draft, which were copyrighted by their authors, were published as articles in the April 1987 *American Journal of Clinical Nutrition* calling the proposed values "Recommended Dietary Intakes (RDIs)" instead of "RDAs."

In January 1987 an ad hoc committee appointed by the

National Institutes of Health (NIH) reviewed the 1985 draft and agreed it was scientifically sound. The NIH's director indicated that the NRC should either publish the report by the end of 1989 or return nearly \$600,000 it was given to prepare it. The NRC then formed a subcommittee to prepare the 1989 report.

Most of the recommendations in the 1989 edition were unchanged or modified only slightly from the ninth (1980) edition. RDAs were established for vitamin K and selenium, which were listed with estimated safe and adequate ranges in the 1980 edition. Higher values were set for calcium intake for women between the ages of 18 and 25. And lower values were set for folate, vitamin B₆, vitamin B₁₂, magnesium, zinc, iron (for adolescent and premenopausal women) and protein (for pregnant women).

Victor Herbert, M.D., who served on the 1980-1985 RDA committee, says that "Virtually all of these changes were made by our committee. The 1989 edition is mainly our work, edited by the subcommittee to retain the 1980 numbers for vitamins A and C as we suggested to resolve the impasse four years ago. But the 1989 edition recommends a higher intake for smokers for which no scientific basis exists. And the subcommittee introduced serious scientific errors as well. The extent of its plagiarism can be judged by comparing our April 1987 *AJCN* articles on iron, folate and vitamins A, B₁₂, C and K with their 1989 RDA counterparts."

The 297-page 1989 *Recommended Dietary Allowances* is available for \$19.95 prepaid from the National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418 (Telephone, 1-800-624-6242).

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THE MACROBIOTIC DIET: NO CANCER CURE

Johanna Dwyer, D.Sc., R.D.

Macrobiotics is a quasi-religious philosophical system founded by George Ohsawa (1893–1966) and popularized in the United States by Mishio Kushi. The system advocates a vegetarian diet in which animal foods are used as condiments rather than as full-fledged menu items. The optimal diet is said to be achieved by balancing “yin” and “yang” foods. The yin/yang classification does not correspond to nutrient composition but rather to activity characteristics of the universe as defined by Oriental philosophy.

Kushi appears to believe that diet is the major factor in the development of cancer and should play a major role in its treatment. In *The Cancer Prevention Diet* (1983), he stated that “cancer is the body’s healthy attempt to isolate toxins ingested and accumulated through years of eating the modern unnatural diet and living in an artificial environment.” Kushi also appears antagonistic to medical treatment. In *Cancer and Diet* (1980), he stated, “Of primary importance in dealing with cancer . . . is not to disturb this natural mechanism by taking out and destroying the cancer.” And in *The Cancer Prevention Diet*, he says that “when a person with cancer has received chemotherapy, cobalt radiation, or undergone surgery . . . recovery may be somewhat more difficult” and that, “except in . . . lifesaving situations, we do not encourage patients to combine the Cancer Prevention Diet with surgery, radiation, or chemotherapy.”

The “Standard” Macrobiotic Diet

According to literature from the Kushi Institute, the “standard” macrobiotic diet for persons living in temperate climates encompasses the following:

- Whole cereal grains comprise 50–60% of each meal. Flour products, noodles, and cracked grains, such as unyeasted whole wheat breads, whole wheat and buckwheat noodles, oatmeal, bulgur wheat, cornmeal, and other cracked grains may be used to complement main servings of whole cereal grains.
- About 5–10% of the daily food intake should be soup made with vegetables, seaweed, grains, or beans. Seasonings are usually miso or tamari soy sauce.
- Vegetables comprise 20–30% of each meal. Two thirds are cooked; one third may be eaten raw, as pressed salad,

or as pickles. Those vegetables for daily use include green cabbage, kale, broccoli, Chinese cabbage, bok choy, dandelion, mustard greens, carrots, squash, scallions, and onions. Potatoes, tomatoes, eggplant, peppers, asparagus, spinach, beets, zucchini, and avocado should be avoided.

- Whole beans or soybean-based products, cooked together with sea vegetables, comprise 5–10% of the daily intake of food.
- Beverages include herbal teas, cereal grain teas, spring or well water, and small quantities of fruit juices.
- A small amount of white meat fish (flounder, carp, halibut, or trout) may be included 1–3 times a week.
- Seasonally available fruit may be eaten 2–3 times a week in small amounts.
- Snacks can include nuts and seeds (dry-roasted and seasoned with sea salt or tamari soy sauce). Popcorn, rice cakes, roasted grains, or beans can also be eaten in small amounts.
- Meat, animal fat, eggs, poultry, milk products, refined sugars, soda, coffee, “chemically treated” foods, refined grains, hot spices, and canned, frozen, or irradiated foods should be eliminated.

Vitamin/mineral supplements are usually avoided, and fluid restriction is common. Specific diets, which are variants of this general pattern, are sometimes proposed for different types of cancer.

The macrobiotic “way of life” includes chewing food at least 50 times per mouthful (or until it becomes liquid), not wearing synthetic or woolen clothing next to the skin, not taking long hot baths or showers (unless too much salt or animal foods have been consumed), having large green plants at home to enrich the oxygen content of the air, and singing a happy song every day.

Why Cancer Patients are Vulnerable

During the past few years, there has been so much publicity about diet and cancer that many people who develop cancer believe that dietary factors are the sole cause. Macrobiotic proponents claim that cancers arise from imbalances in the

body and buildups of poisons or impurities, and that detoxification can be accomplished through dietary means. This provides a seemingly straightforward dietary explanation for illness and suggests that a nontoxic, self-administered, home-based treatment using food is the answer. Patients conclude that macrobiotic diets are harmless, nontoxic, and may be beneficial, often after reading a testimonial book or encountering anecdotes about supposed cures from well-meaning friends or relatives.

Most patients are interested in self-help, especially through dietary measures. The macrobiotic diet can satisfy their desire for involvement in their own care, since a considerable amount of special food purchasing and preparation is necessary. Personalized attention is provided not only by the various advisers or counselors, but also through the activities of groups of like-minded individuals. The emphasis on spiritual dimensions may help cancer patients overcome guilt about aspects of their previous lifestyle that they feel may have caused their illness. Each of these characteristics can be attractive to patients who are frustrated by the toxic side effects of radiation or chemotherapy or who believe they are not involved enough in the treatment process, are not receiving enough emotional support from their doctors, or are not being comforted about their illness by their religious or philosophical beliefs.

Macrobiotics cloaks itself in the trappings of status and respectability. Its proponents suggest that experts and authoritative groups agree with this therapy. The macrobiotic diet is low in fat and high in fiber, which is also a characteristic of the preventive diet recommended by the American Cancer Society and other authoritative bodies, although the macrobiotic diet is much more restrictive. Because of this, many people assume that it can cure cancer as well. The fact is, however, that neither the American Cancer Society, the National Academy of Sciences, the National Cancer Institute, or any other scientific organization recommends any type of diet as a cure for cancer. The American Cancer Society lists macrobiotic diets among its "unproven methods" and warns that "if not properly planned to be nutritionally adequate, such diets could provide insufficient nutrition for cancer patients" [Ca: A Cancer Journal for Physicians 39:248-251, 1989].

Clear-Cut Dangers

What specific threats do macrobiotic diets pose? First, devotees of these regimens are often alienated from science-based medical practices. Several studies have found that the parents of macrobiotic children had more negative attitudes toward conventional pediatric guidance than did Seventh-day Adventist vegetarians or nonvegetarians of similar educational levels, and their children exhibited less satisfactory nutritional status. Advocates of macrobiotic diets for those who are already ill often oppose surgery, chemotherapy, and radiation, which they view as harmful and unnatural. Patients who follow their counsel may abandon those therapies.

Several years ago I interviewed a patient who, acting on the advice of a macrobiotic counselor, had signed herself out of the hospital on the day she was scheduled for laser surgery for a benign vocal cord tumor. During the next year, she and her family studiously adhered to a macrobiotic diet. Her increasing hoarseness was attributed by her counselors to dietary lapses. Only the intervention of a physician friend of the family finally led

her to have surgery, which was completely successful. Most patients who abandon or delay treatment of a tumor for a year are not so lucky. Their chances of cure (or lessened discomfort if only amelioration is possible) are likely to be considerably worse.

A second threat arises from the diet itself. Macrobiotic theory claims that improper diet and inadequate elimination of waste result in constitutional or metabolic contamination and cause cancer, and that cure results from righting the balance and cleansing the body with special vegetarian diets, appropriate spiritual attitudes, and other measures. These misguided notions often lead to radical dietary changes that can compromise nutrient adequacy in patients whose nutritional status is already precarious.

Among cancer patients, many of whom have great difficulty with their appetite, the dietary goal should be to maintain the best nutritional status possible. Appropriate nutritional support can maximize the chance of a positive response to cancer treatment and minimize sickness and death from secondary malnutrition. Sometimes nutritional support can help to slow or reverse weight loss, wasting of lean body mass, lack of appetite, and lack of an immune response. When this is not possible and these signs represent an unpreventable part of the disease process, dietary modification may still help the patient feel more comfortable. The macrobiotic diet does not conform to any accepted theory of nutritional support of cancer patients, nor has it been demonstrated by properly controlled experiments to be helpful in maintaining nutritional status among cancer patients.

When healthy adults who are accustomed to usual American fare go on macrobiotic diets, they usually experience weight loss, sometimes to a profound degree. Cancer patients, who have little appetite to begin with or who have complications due to a cancer located in their digestive tract, can ill afford to accelerate their weight loss. Since macrobiotic diets are formulated by adherence to a philosophy rather than nutrient need and food preferences, there is no guarantee they will be nutritionally adequate.

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No Evidence of Benefit

The metaphysical concepts of macrobiotics are not amenable to testing, but curative claims are testable. So far, however, no study that meets accepted scientific criteria has been published. Most reports of cure are based on anecdotes and personal testimony rather than on careful comparisons of effectiveness in double-blind controlled studies of the diet versus other treatments or a placebo. Documentation is rarely furnished that the patients had cancer, and, if they did, that their survival time was improved by the diet. Reports about single patients or small groups of patients are too small to rule out chance or biased selection. Also, follow-ups are often incomplete or for too short a time to make sound conclusions. Thus it is impossible to separate out the actual positive effects (if any) of the macrobiotic diet from placebo effects or coincidence due to the natural history of the cancer itself. Finally, none of the claims

of cure have been subjected to the scrutiny of peer review in scientific journals. Rather, nonmedical channels and the popular press have been used to disseminate information.

When challenged, macrobiotic proponents respond that their philosophical or quasi-religious beliefs are not amenable to the standards of proof that apply to testing physiologic or biochemical theories. Those who object to these views are often characterized as bigots who, for economic or ideological reasons, fail to recognize the newer therapies.

Because no benefit has been demonstrated and the risks are substantial, there is no reason to recommend macrobiotic diets for cancer patients.

Dr. Dwyer is director of the Frances Stern Nutrition Center, New England Medical Center Hospitals, and Professor of Medicine (nutrition) and Community Health at Tufts University Medical School. The next issue of Nutrition Forum will describe the macrobiotic marketplace and a seminar at the Kushi Institute.

BRIEFS

Suit filed over new RDAs. Victor Herbert, M.D., J.D., is suing the National Academy of Sciences for copyright infringement. Dr. Herbert believes that the chapters on vitamin B₁₂, iron, and folate appearing in the 1989 RDA book were derived from work he produced and copyrighted while serving on the 1980-1985 RDA Committee [see NF 7:8].

Antiquackery crusader dies. Paul Sage, the FDA official who petitioned the agency to use criminal prosecutions to clean up the illegal "supplement" marketplace, died on February 18th. [Editor's note: He will be sorely missed by those of us who believe the FDA should develop policies tough enough to deter the marketing of supplements with bogus therapeutic claims.]

Bogus "Candida" product tackled by FTC. Nature's Way, of Springville, Utah, and its president, Kenneth Murdock, have signed a consent agreement to stop making unsubstantiated claims that Cantrol is helpful against yeast infections caused by *Candida albicans* and to pay \$30,000 to the National Institutes of Health to support research on yeast infections. The product is a conglomeration of capsules containing acidophilus, evening primrose oil, vitamin E, linseed oil, caprylic acid, pau d'arco, and several other substances. It is one of many products marketed by the health food industry manufacturers for the treatment of "candidiasis hypersensitivity," a fad diagnosis called "speculative and unproven" by the American Academy of Allergy and Immunology [NF 3:14, 3:28, 4:84-85]. Cantrol has been promoted with a self-test based on common symptoms the manufacturer claimed were associated with yeast problems. However, the FTC charged that the test was not valid for this purpose. FTC Commissioner Andrew J. Strenio objected to the terms of the agreement, because the penalty "looked paltry" compared to the estimated \$6 million consumers spent for the product. He also was disturbed that the agreement did not apply to the company's entire product line but just to products based on Cantrol's primary ingredients. Last year the FDA seized a supply of Cantrol from Nature's Way. [Editor's note: Public protection would have been much greater if either agency had acted in 1985 when I reported what Nature's Way was doing wrong.]

Stuart Berger attacked. CBS's "Inside Edition" has aired two programs vilifying Stuart Berger, M.D., a Park Avenue "diet doctor" who is being investigated by state licensing authorities. During the first program, a reporter described what happened when she visited Berger complaining of fatigue, as did a prominent New York allergist who probed Berger with a similar complaint. Both noted that their contact with him lasted about two minutes, included no physical examination, and culminated with a diagnosis of chronic fatigue syndrome and allergy to yeast (*Candida*). The reporter's cost was \$845 for the first visit, with an estimated total of about \$1,500 through the third visit. A former patient described a similar experience, which had cost over \$1,000. A former employee said that Berger ordered his employees to indicate on blood test reports that every patient was allergic to wheat, dairy products, eggs, and yeast. The reporter's visit had been filmed with a hidden camera. Berger obtained a court order stopping "Inside Edition" from showing the tape during the initial program. Two weeks later, however, after the U.S. Supreme Court sided with the producers, the tape was shown. During the interim, information was received from more than a hundred former patients and employees. In 1985, Dr. Berger's *Immune Power Diet* became an overnight best seller following Berger's appearance on the "Donahue Show" [NF 3:24]. In the book, claims are made that overweight and numerous other health problems are the result of an "immune hypersensitivity response" to common foods, and that "detoxification" and weight loss followed by food supplements can tune and strengthen the immune system. There is no scientific evidence to support these claims.

World Food Prize status shaky. The advisory council for the World Food Prize has announced that continuation of the award is in jeopardy. General Foods established the \$200,000 annual prize in 1986 to honor individuals who have made an outstanding contribution toward improving the quality, quantity, or availability of the global food supply. However, the company, which is now a subsidiary of Philip Morris, Inc., has announced that it will no longer support the prize. The advisory council hopes to find a new sponsor.

Anti-irradiation update. A two-year moratorium on the sale or manufacture of irradiated food (except spices) has been enacted by the New Jersey State Legislature. New York adopted a similar ban last year, and Maine has banned the sale of irradiated food indefinitely. Quaker Oats and H. J. Heinz Company have announced that they will not market irradiated foods. Irradiation, which can prolong the shelf-life of foods, has been unfairly attacked by consumer groups and segments of the health food industry.

"Misting" machine update. After tracing an outbreak of Legionnaires' disease to a Louisiana supermarket's vegetable-spraying machine, the National Centers for Disease Control have concluded that, for the most part, such machines do not appear to pose widespread risks to public health. The disease resulted from bacteria that multiplied in the reservoir of a device in which some of the water recirculated and could stagnate. More than 90% of misting machines spray water that comes directly from the tap, which poses no hazard.

Fat substitute approved. The FDA has given the NutraSweet Company permission to market imitation ice cream made with Simplese, a new fat substitute. Simplese is made by processing egg white and/or milk protein, plus water, pectin, sugar, and citric acid, into a creamy mixture that has the taste and texture of fat. NutraSweet's ice cream, called Simple Pleasures, will be available in six flavors. It will have about half the calories of regular ice cream and contain less than a gram of fat and 5-15 grams of cholesterol per 4-ounce serving. Regular ice cream (10% fat) contains 10-12 grams of fat per 4-ounce serving. The company plans to seek permission to market mayonnaise, salad dressing, sour cream, yogurt, dips, margarine, butter, and cheese spreads made with Simplese in place of fat. Additional information can be obtained by contacting the NutraSweet Company's consumer affairs center, 1-800-321-7254, 9:00 am to 3:00 pm CST.

Con man foiled again. Peter Foster, who received a 4-month jail sentence for advertising "Cho Low Tea," a nonexistent product claimed to lower blood cholesterol levels [NF 6:46-47], has been foiled in an attempt to place ads for another bogus product. Shortly after his release, he asked many newspapers for credit to place ads for Ageless Aging, a nutrient product claimed to help maintain energy, control stress, increase stamina and endurance, and counter toxins that "stimulate the production of free radicals, chemicals which contribute greatly to the aging process." Foster's request aroused the suspicion of a newspaper official, who asked the American Newspaper Publishers Association Credit Bureau Incorporated to investigate. ANPA/CBI vice president James Ralph quickly determined that the letters and product were bogus and, together with his staff, spent an entire day telephoning newspapers to warn them. Many had been processing the ad for publication. [Editor's note: James Ralph did another great job in stopping a mail-order scam whose promoter was attempting to cheat newspapers as well as consumers. However, had Foster's request been accompanied by payment, his ad would have been published by many newspapers that don't seem to care whether their subscribers are cheated.]

Tryptophan lawsuits. Many lawsuits are being filed by individuals stricken with eosinophila-myalgia syndrome linked to the taking of L-tryptophan. In February, to facilitate exchange of information among the plaintiffs, the L-Tryptophan Litigation Group was formed by the Association of Trial Lawyers, 1050 31st St., N.W., Washington, DC 20007. In March, the FDA expanded its recall to all L-tryptophan products in tablet, capsule, powder, or liquid form, as well as multi-ingredient nonprotein supplements that contain L-tryptophan. Retail sales were an estimated \$50-75 million a year.

Food allergy report. A 36-page booklet about allergies and other adverse reactions to foods is available for \$3 from the American Council on Science and Health, 1995 Broadway, New York, NY 10023. Individual membership in the Council, which includes its quarterly magazine *Priorities* and a 50% discount on all ACSH scientific reports, now costs \$25 per year. Sustaining individual membership, which includes the magazine and all new ACSH publications, is now \$50 per year.

Organic labeling bill. A 117-page bill outlining a national standard for "organic" food production was introduced on February 8, 1990, by Senator Patrick Leahy (D-VT). The bill (S. 1896), titled the Organic Foods Production Act of 1990, would establish a USDA "organically produced" label for products meeting certain production standards. Other uses of the word "organic" would be prohibited. The standards call for production without the use of synthetic pesticides, annual inspection of each farm, periodic residue testing of products, and civil penalties for violations. State programs may contain stricter guidelines if approved by the U.S. Secretary of Agriculture. The bill's sponsors believe it will: 1) help eliminate consumer confusion about unsubstantiated claims for "organic" and "natural" foods; 2) provide safer food alternatives; and 3) give farmers incentives to use fewer chemicals. The bill's critics believe it will certify nonsense, promote confusion, and increase food costs. Twenty-two states have passed statutes setting up "organic" definitions. Information about the bill can be obtained from Kathleen M. Merrigan, U.S. Senate Committee on Agriculture, Nutrition and Forestry, SD-647 Dirksen Building, Washington, DC 20510 (Telephone: 202-224-5207).

Pesticide-free certification. Scientific Certification Systems, of Oakland, CA, doing business as NutriClean, tests foods and offers a "No Detected Pesticide Residue" standard with stickers retailers can use in marketing the foods. According to an article in the July 1989 *East West Journal*, about 40 shippers of fruits and vegetables and 1,000 of the nation's 17,000 food stores are involved. NutriClean was founded in 1984 by Stan Rhodes, a chemist who had spent eight years in the natural foods business. He hopes that his testing-and-certification system will pressure growers nationwide to sharply curtail their use of pesticides. However, critics quoted in the article charged that NutriClean's program is simply a marketing gimmick that preys on consumer concerns and that there is no reason to believe that foods certified "free of residue" are safer than those that have not been certified. NutriClean also tests foods for nutrient content and certifies those found to have higher values than government-reported averages.

New newsletter. *Consumer Magazines Digest*, edited by Kristen McNutt, Ph.D., J.D., summarizes nutrition articles appearing in current issues of more than 40 popular magazines. Published monthly, it costs \$67/year. Subscriptions or a free sample copy can be ordered from Consumer Magazines Digest, P.O. Box 1985, Evanston, IL 60204.

Cholesterol booklet. The Channing L. Bete Co., 200 State Road, South Deerfield, MA 01373, has published "About Cholesterol," an excellent booklet on diet, cholesterol, and heart disease prevention. The booklet is simple enough for use in elementary schools yet comprehensive enough for adult wellness programs. A free review copy can be obtained by calling 1-800-628-7733.

HAVE YOU SEEN YOUR VITAMITICIAN LATELY?

James J. Kenney, Ph.D., R.D.

Great Earth Vitamin Stores—the nation's second largest health food store chain—is advertising a "Free Vitamin Fitting" by "highly trained Vitamiticians who tailor a nutritional support program that's a perfect fit for you." According to the ad, the program is based on a "Nutritional Fitness Profile" developed by "a noted Johns Hopkins physician."

The Profile contains 29 multiple-choice questions pertaining to diet, symptoms, illnesses, and lifestyle factors. Each question has three possible answers, with #1 indicating no problem, #2 indicating a slight problem, and #3 indicating a significant problem. To obtain my "vitamin fitting," I visited two Great Earth stores in the Los Angeles area. One displayed a large poster offering the service, while the other had posted copies of the Profile throughout the store. In both stores I completed the questionnaire.

In the first store, the "Vitamitian" referred to a document about ten pages long while reviewing my answers. My overall score was "53," which he said was "pretty good." Nevertheless, for each response #3 I'd checked, he recommended a supplement. For example, question 23 asked whether my cholesterol level was "low," "I don't know," or "high." I had checked "high." For this, he recommended *Cholesterol Counter*, a product composed of packets that cost \$19.95 for a 30-day supply. Each packet contained four pills: 500 mg of niacin, 500 mg of vegetable sterols, 400 mg of Omega-3 fish oil, and 1000 mg of oat bran and other fibers. He told me that taking a packet with each meal would help lower my cholesterol level. He also recommended a digestive enzyme supplement because I had checked "Regularly" in response to question 11, "Do you frequently suffer from gas, flatulence or heartburn?"

The second "Vitamitian" appeared more confident and did not refer to any document when giving advice. Instead of *Cholesterol Counter*, she recommended a 500 mg timed-release niacin tablet with each meal. She said I would notice flushing of my skin which would indicate that "the niacin was flushing toxins, including cholesterol, out of my system." She also recommended the enzyme supplement, but switched to an acidophilus product and a milder enzyme product when I described having had gnawing stomach sensations in the past. Both "Vitamiticians" assured me that the supplements would reduce flatulence even though I told them it had started when I began eating beans and oat bran.

Calcium supplements. The *Medical Letter*, a highly respected drug and therapeutic advisory for physicians, has reviewed the evidence regarding calcium supplements [31:101-103, 1989] and concluded: "Differences in the absorption and adverse effects of different calcium salts are generally small. Large doses of medicinal calcium may interfere with absorption of other nutrients; food sources are probably safer. Whether calcium from any source can prevent osteoporosis remains to be established." Poorly formulated products may not readily disintegrate or dissolve in the stomach. Therefore, if supplements are used, *Medical Letter* consultants recommend chewable tablets such as Tums or Os-Cal 500 Chewable or tablets labeled as meeting U.S.P. standards for dissolution.

Both "Vitamiticians" recommended a vitamin E supplement because I had checked that I live where the level of pollution is "High much of the time." (I live near smoggy Los Angeles.) The second "Vitamitian" also recommended a 500 mg vitamin C supplement to help deal with "toxins." Both recommended a high-dose multivitamin and mineral supplement even though I said I was already taking one with 100% of the Recommended Dietary Allowances. The second "Vitamitian" said "the RDAs were developed 50 or 90 years ago and were the minimum needed to prevent a deficiency."

Although my experiences do not indicate the full extent of Great Earth's newest sales gimmick, it is clear that something is wrong. The 29 questions, either separately or together, do not provide a rational basis for any type of supplement recommendation. The advice I received was completely unfounded. The scientific evidence that megadoses of vitamins C or E can protect against pollution is suggestive at best. The idea that digestive enzyme supplements can reduce flatulence due to a high-fiber diet is utter nonsense. The nutrient intake I described (even without a supplement containing 100% of the RDAs) was more than adequate to prevent deficiency. So there was no rational basis for prescribing an additional vitamin and mineral supplement.

Worse yet, the advice about niacin was potentially dangerous. Although niacin can be a valuable drug for controlling blood cholesterol levels, it should never be used outside of a comprehensive, medically supervised program that begins with attention to diet, exercise, and other factors related to heart disease risk. When niacin use is appropriate, the dosage should be built up gradually to minimize the incidence of side effects, and blood tests should be performed regularly to detect liver problems or other toxic effects (such as increased blood sugar or uric acid levels). But neither "Vitamitian" mentioned the potential dangers.

Are Great Earth's "Vitamiticians" highly trained? Or are they merely sales clerks with a new title? After returning home, I telephoned the first store and asked another Vitamitian about her training. There "really wasn't any," she replied. "All you really have to know is how to sell supplements."

Dr. Kenney, who is certified by the American Board of Nutrition, is the nutrition specialist for Pritikin Longevity Centers.

BOOK REVIEW

Title: Heart Failure: A Critical Inquiry into American Medicine and the Revolution in Heart Care

Author: Thomas J. Moore

Publisher: Random House, New York

Price: \$19.95. Hardcover, 308 pages

Reviewed by: Mark A. Kantor, Ph.D.

Thomas Moore is an award-winning journalist with a bent toward investigative reporting. If he set out to create controversy with his latest book, he most assuredly succeeded. Within days after a lengthy excerpt of *Heart Failure* appeared in the September 1989 issue of *Atlantic Monthly*, officials at the National Heart, Lung and Blood Institute (NHLBI) were scrambling to respond to Moore's allegations that the benefits of lowering elevated cholesterol levels have been grossly exaggerated, that diet has relatively little effect on heart disease risk, and that the entire National Cholesterol Education Program (NCEP), which recommends cholesterol screening for all American adults is ill-conceived at best, and dangerous at worst.

Does Thomas Moore say we do not have to worry about cholesterol any more? Does he advocate a return to bacon and eggs for breakfast, served with buttered toast? Is this book the idle musings of just another nutrition charlatan? No on all counts. Moore recognizes that a high blood cholesterol level increases the risk of heart disease. But he is very troubled about how public policy decisions are made that affect large segments of the population. And that's what this book is really about.

For starters, Moore takes dead aim at the NCEP with simple but provocative questions: "What is the nature of the process that determines that millions of Americans without symptoms are at risk (for coronary heart disease) and require expensive medical treatment? What kind of scientific evidence is required? How are adverse effects (of treatment) monitored and the benefits measured? Is the new assault on cholesterol built on as solid a scientific foundation as the campaign against hypertension?" He is especially troubled that the NHLBI never conducted a cost-benefit analysis before launching the NCEP, and that the program was never approved by Congress.

Both are legitimate gripes. But when Moore starts to dispute the evidence linking diet, cholesterol, and heart disease, he overextends his authority and his case begins to break down.

In reviewing some of the major scientific findings that gave rise to the NCEP, Moore concluded that the program is unjustified because NHLBI's own clinical trials failed to show, by and large, that lowering blood cholesterol levels reduces heart disease. However, although he cites scores of scientific references, he did not do his homework very well. Rather than considering the evidence as a whole, he focused on the negative aspects of only a few studies, such as the "MRFIT" trial. He also ignored studies in progress whose preliminary data were available at the time he wrote the book. In so doing, he failed to see the big picture.

While discussing the topic of cholesterol, which occupies nearly the first third of the book, Moore made several technical errors in his descriptions of cell membranes and lipoproteins. But his greatest mistakes were errors of omission and misleading innuendoes. For example, he is puzzled that the NCEP

dietary recommendations for reducing serum cholesterol were never tested to see whether they are safe or effective. But the NCEP advises using ordinary foods to help lower cholesterol levels. Is he suggesting there is something inherently dangerous about eating fruits, vegetables, and whole grains? He also states that laboratory tests for cholesterol are inaccurate, but doesn't mention that substantial progress has been made in improving them.

Moore complains that the much-heralded Coronary Primary Prevention Trial (CPPT), the study that sowed the seeds of the NCEP, failed to show that lowering cholesterol prolongs life. He also accused the investigators of fudging their statistics. "In scientific research, people tend to find what they are looking for, to see what they expect to see," he writes, especially when huge amounts of time and money have been invested. But the issues of marginal statistical significance and overall mortality were discussed openly in the medical literature at the time the study was published. Despite these drawbacks, experts around the world still consider the CPPT a success because so many positive trends were associated with reducing cholesterol.

Moore describes how a small circle of friends is responsible for formulating the nation's major policy decisions on cholesterol. These members of the "medical elite" chair scientific meetings, control million-dollar research grants, advise the FDA on drug safety, and interface closely with the NHLBI. Sometimes they even take jobs with drug companies. Moore doesn't doubt the integrity of these individuals or suggest that less-qualified people assume their responsibilities, but he cautions that such a group of like-minded insiders may become too attached to a single point of view. "The terrible danger of such a closed loop is that important and basic questions are neither asked nor answered," writes Moore (an "unbiased" outsider). But many dissenting opinions were heard at the NHLBI consensus conference, and continue to be voiced at meetings and in scientific publications. If there is one thing that everyone agrees upon, it is that the riddle of heart disease has yet to be solved.

Moore reserves his harshest criticisms for the giant pharmaceutical companies. He claims they have failed to demonstrate the safety of their drugs and are making enormous profits from the NCEP. In fact, he states that what started out as a campaign for the public good has become "intertwined with greed," with physicians and food companies also cashing in mightily on cholesterol. He even wonders if reducing cholesterol is such a good idea in the first place, as he points out that some cancer patients have low serum cholesterol levels. "A sea of uncertainty surrounds the territory of cholesterol levels below 200 mg/dl," he warns in a chapter entitled "The Dangers of Low Cholesterol." The American Cancer Society, however, doesn't share Moore's fear. In fact, it endorses a low-fat diet plan similar to the NCEP's to help prevent cancer.

Nowhere in his book does Moore mention the Cholesterol-Lowering Atherosclerosis Study, which provides strong evidence that reducing cholesterol levels slows the progression of plaque, or reverses deposits already formed. And he belittles or ignores other major trials and decades of epidemiologic research, animal experiments, and metabolic ward studies, all of which point to a strong link between diet, cholesterol, and heart

disease. In fact, he doesn't seem to understand that clinical trials, by their very nature, are only capable of showing modest changes in heart disease incidence and mortality. Even the longest studies are still relatively short, inasmuch as the buildup of plaque occurs gradually over the lifetime of an individual.

Despite these numerous shortcomings, *Heart Failure* is a captivating book that is more than just a story about cholesterol. In later chapters, Moore unleashes his considerable writing skills to describe the early battles against heart disease. He gives a riveting account of the major breakthroughs, including coronary bypass surgery, balloon angioplasty, thrombolytic therapy with "clot-busting" drugs, and the people behind them.

But throughout, he returns to his central theme. How much do we really know about the long-term effectiveness of these procedures? Are they worth their incredible expense? And most importantly, do they save lives? The problem, as Moore sees it, is simple: modern medicine places too much emphasis on developing high-tech treatments but invests far too little time, money, and attention in measuring their outcomes.

Moore also weaves suspense into his book, as he describes the perils of open heart surgery, during which life literally hangs by a thread. Later, he whisks the reader to a quiet neighborhood where a recent heart attack victim is locked in a deadly race against time, waiting for paramedics to arrive. And,

in several chilling chapters, he recounts what happens when the mortality rate from heart surgery starts to rise inside a prestigious medical center. It is not just human lives that are on the line, but big egos and big money as well.

Moore criticizes other aspects of American medicine, from coronary care units (do they really save lives?) to the emergency medical system (why is it not available in all communities?). In an engaging comparison, he pines that the airline industry is more accountable for the safety and well being of its passengers than hospitals are for their patients. And he is baffled by the "chaotic and uncontrolled" process that allows physicians to decide whether to try new procedures on patients, quite unlike the orderly process used by the FDA for testing and evaluating new drugs.

Heart Failure is a compelling book that has raised the blood pressure of more than a few individuals. It is intended to highlight a lack of accountability that Moore believes ails modern medicine. Moore asks questions that need to be asked. It will be unfortunate if he also leads readers to abandon dietary caution.

Dr. Kantor is an assistant professor and food and nutrition specialist with the University of Maryland's Cooperative Extension Service, and a regional communicator for the Institute of Food Technologists. His postdoctoral research was in cholesterol and lipoprotein metabolism.

FLUORIDATION ATTACKED UNFAIRLY

Newsweek magazine has published an article based on an unauthorized release of data from an experiment in which rats and mice were exposed to high dosages of fluoride. The experiment was conducted by the National Toxicology Program (NTP), a branch of the National Institute of Environmental Health Sciences. A fact sheet released by NTP indicates that more than 1000 rats and mice drank water containing 0, 11, 45, and 79 ppm of fluoride. There were 80 animals in the control and high-dose groups and 50 in the low- and medium-dose groups. No mice showed any signs of cancer, but one male rat in the 45 ppm group and four males in the 79 ppm group developed bone cancer. In addition, one male rat in the 45 ppm group, three female rats in the 79 ppm group, and one female rat in the control group developed tumors of the mouth.

NTP emphasized that the data were preliminary. Before conclusions are drawn, data normally go through an extensive peer review process by a panel of pathologists and epidemiologists at the agency. But in this case, raw data had been leaked to the press before the review took place.

The American Dental Association and public health

officials, while noting that it was too early to comment on the study's specific data, emphasized that human studies have repeatedly demonstrated fluoride's safety. Among other things, they noted that: 1) the doses given to the rodents were much higher than would be obtained by drinking water fluoridated at 1 ppm; 2) data in one or two animal strains might have nothing to do with what happens in humans; 3) while the number of people drinking fluoridated water has been rising steadily, the incidence of bone cancer (which is not common) has not changed; and 4) many studies comparing fluoridated and nonfluoridated communities have found no evidence that fluoridation affects cancer rates. Thus, while the NTP study is likely to furnish ammunition for antifluoridation propaganda, it is unlikely to be regarded as significant by the scientific community. [*Editor's note: I believe that Newsweek's article is the most irresponsible analysis of a public health topic ever published by a major national news outlet. How sad it is that a magazine which has ignored the real dangers of cigarette smoking is willing to devote two pages to attacking a nonexistent danger.*]

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AIDS FRAUD RAMPANT IN HOUSTON

Nicolas Martin

Between September 20 and October 12, 1989, the Consumer Health Education Council (CHEC) surveyed 41 Houston-area health food stores to determine the extent to which bogus treatments for AIDS are recommended. CHEC volunteers telephoned the stores and asked to speak with the person who provided nutritional advice. Each volunteer caller then explained that he had a brother with AIDS who recently was hospitalized with AIDS-related pneumonia and was now at home with his family. The brother was said to not be taking AZT (the only approved AIDS drug) but was seeking a more effective alternative against the HIV virus. The caller explained that he was the family member given the responsibility for locating the "alternative" treatment and would forward information or products to his brother. The caller also informed the health food store employee that the brother's wife was still having sex with her husband and was seeking products that would reduce her risk of being infected, or make it impossible.

Despite the illegality of their actions, all 41 retailers gave what amounted to medical advice for treating or preventing AIDS. Twenty-nine did so over the phone, while twelve asked the caller to visit the store. None referred the caller to a physician, clinic, or any organization that assists people with the disease. All stated that AIDS affects the immune system of the infected person and that they sold products that could "boost," "enhance," "improve," or otherwise benefit the brother's immune system. While several expressed minor uncertainty about the wife having sex with her infected husband, none suggested that she be advised to cease such a practice or be told of her high probability of becoming infected by HIV. None advised using a condom. All said that their stores sold products that would improve the woman's immunity and protect her against possible harm from the HIV virus. Twenty-seven claimed that if the wife took certain supplements she would be protected against infection.

Our callers emphasized that they were seeking a genuine cure for AIDS, not simply a way to prolong lifespan marginally. Thirty of the employees said they sold products that would cure AIDS. When this was questioned by the caller, most stood firmly by this claim. Some expressed slight reservations, like "I'm pretty confident it will work," and some assured the caller that "people are having good luck" with whatever they recommended.

Many of the employees emphasized the influence of the mind on the susceptibility to infection or bodily reaction to HIV. Several said the products would be more effective if meditation or other ways to induce "positive thinking" were also utilized. One health food store "nutritional counselor," to whom our volunteers were referred by the AIDS Foundation and other local AIDS support groups, said by phone that "people doing drug therapy are not doing well at all" and that it would be better to turn to "natural healing." Several health food stores suggested referrals to herbalists or "nutritional" consultants in private practice. One employee, who recommended hydrogen peroxide, other products, and literature, said that her sister-in-law had died of AIDS.

The recommended products included: vitamins (41 stores); vitamin C (38 stores); immune boosters (38 stores); coenzyme Q10* (26 stores); germanium* (26 stores); lecithin (19 stores); ornithine and/or arginine (9 stores); gamma-linolenic acid* (7 stores); raw glandulars (7 stores); hydrogen peroxide (5 stores); homeopathic salts (5 stores); Bach flower remedies (4 stores); blue-green algae* (4 stores); cysteine (3 stores); and herbal baths (2 stores). [*Editor's note:* Those marked with an asterisk (*) have been subjected to federal regulatory actions but are still being marketed.]

Several subjects were pessimistic about the benefits of using AZT, and some discouraged its use. CHEC knows of cases in which infected individuals decided to take "natural" treatments instead of AZT, a decision that can shorten their life.

Unfortunately, the Houston news media have shown little interest in what we did. Only United Press International and a weekly paper in Houston's heavily homosexual district ran stories based on our survey. One television station used a hidden camera to film a health food store employee claiming to be able to cure AIDS, but the story was not aired. The media seem to view criticism of AIDS product fraud as an attack upon the victims rather than the perpetrators.

Mr. Martin is executive director of the Consumer Health Education Council, a nonprofit agency located in Houston.

QUESTION BOX

Q. What is "alternative agriculture"?

A. A recently released report by a committee of the National Academy of Sciences states that it is not a single system of farming practices. Rather, "it includes a spectrum of farming systems, ranging from organic systems that attempt to use no purchased synthetic chemical inputs to those involving the prudent use of pesticides or antibiotics to control specific pests or diseases. Alternative farming encompasses, but is not limited to, farming systems known as biological, low-input, organic, regenerative, or sustainable. It includes a range of practices such as integrated pest management; low-density animal production systems; crop rotations designed to reduce pest damage, improve crop health, decrease soil erosion, and, in the case of legumes, fix nitrogen in the soil; and tillage and planting practices that reduce soil erosion and help control weeds." In simpler terms, it appears to be a loosely defined philosophy and set of practices aimed at minimizing the use of pesticides, antibiotics, and synthetic chemical fertilizers while protecting soil quality and remaining profitable. The 464-page NAS report *Alternative Agriculture* is available for \$19.95 (softcover) or \$29.95 (hardcover) from the National Academy Press, 2101 Constitution Ave., N.W., Washington, DC 20418.

NUTRITION

Forum

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A KUSHI SEMINAR FOR PROFESSIONALS

Jack Raso, M.S., R.D.

"Laying on that stainless steel table and getting these little lines drawn on me, I felt like a piece of beef. I felt like I had no control, when they were getting ready to do radiation. And the chemo. I went . . . to see the oncologist, and seeing the other people in the waiting room, [I wondered], 'Man, is that what I'm going to be looking like?' I mean, they didn't look well. They did not look healthy. . . . If I had done chemo and radiation, I know for a fact I wouldn't be sitting here and having energy with you right now."

The speaker, whom I shall call John, was a tall, thin, youthful macrobiotic convert in his late forties who said he used to run about 4 to 5 miles a day. He was driving me to the Kushi Institute in Becket, Massachusetts, to attend the Michio Kushi Seminar for Medical Professionals, held on June 20 to 25, 1989. John said his cancer had been diagnosed in November 1988. A week later, friends gave him two books whose authors said they had recovered from cancer while following a macrobiotic regimen. Two days later, after reading the books, John flew to Massachusetts for a consultation with Michio Kushi.

I asked what Kushi had done. John responded, "Basically, Oriental diagnosis is old . . . very old. . . . I don't know how to do it. . . . But he can look at your face. He can look at your hands, your feet, the meridians of the body. . . . You'll see some material evidence of the chakras. He'll take a little thing . . . like a nail clipper dangling [from a thread] . . . and when he puts it over this area of the body where there is a chakra, that thing will start to rotate. For men, it goes clockwise; for ladies, it goes counterclockwise." (In traditional Chinese medicine, meridians are energy conduits regulating "yin" and "yang." In Hindu philosophy, the chakras are the seven occult centers of the body.)

I also asked whether Kushi had performed a physical examination. "Just looking at the face, looking at the arms . . . he can tell how far it's advanced," John replied. "Before my cancer was diagnosed, I remember looking at my hand, and this area right here was just blue and green as hell. It looked like a bruise. . . ."

"You're pretty clean; you're clean" John assured me. "But mine was really blue and greenish, and that is one of the signs of cancer. . . . This area right here [between the thumb and forefinger] is the small intestine. That was so damn sore—in

most people it is from bad eating—that I couldn't press it like that. But everything in the body corresponds. Right now, looking at my hands, which one is the redder of the two? Obviously. The tumor's on this side. It's discharging through an extremity."

When I asked whether Kushi ever referred clients to health professionals, John answered, "No, no. . . . Well, he recommends that you stay in contact with your doctor for the blood tests, which I'm doing. I've got a homeopathic doctor." He also told me that Kushi looks at and comments on his laboratory reports.

John said he had not told his former primary physician, an endocrinologist, of his decision to turn to macrobiotics. "When I was getting ready to leave his office and he told me what the verdict was, he said, 'Be careful. There's all kinds of charlatans out there that will take your money.' In retrospect, I felt like saying, 'Like you? You took my money, and you didn't fix me.'"

John also spoke about Anthony Sattilaro, M.D., whose book, *Recalled by Life* (1982), had helped steer him toward macrobiotics. "Sattilaro got off the diet 3 years ago. His cancer got worse than probably ever. . . . He was eating very wide. . . . And I think when he got well, he kind of disassociated himself with Michio. . . . He always felt like he was being used to bring people in."

Dr. Sattilaro, whose struggle with prostate cancer was widely publicized, underwent conventional therapy but credited macrobiotics for his improvement. In *Living Well Naturally* (1984), he said that his doctors had pronounced him in a state of permanent remission. But he died of his disease last year.

A Brief History

Macrobiotics was founded by Yukikazu Sakurazawa (1893–1966)—better known as George Ohsawa. His first book in English, *Zen Macrobiotics*, was published in mimeographed form in 1960. Macrobiotic insider Ronald Kotzsch, Ph.D., who wrote *Macrobiotics: Yesterday and Today*, portrays Ohsawa as a quixotic Japanese nationalist who, while preaching the "Unique Principle" of yin and yang, smoked heavily and occasionally enjoyed cheesecake, doughnuts, Coca-Cola, coffee, Guinness

Stout, and Scotch whiskey. In Kotsch's words, "Ohsawa was a man who for 40 years taught about health with a cigarette in his hand."

The earliest version of the diet, termed the "Zen macrobiotic diet," was claimed to enable individuals to overcome a wide range of illnesses that its proponents attributed to dietary excesses. This diet had ten progressively restrictive stages. The lowest stage consisted of 10% grains, 30% vegetables, 10% soup, 30% animal products, 15% fruits and salads, and 5% desserts. Each subsequent stage increased the percentage of grains by ten while reducing the percentages from other categories. The fourth stage eliminated fruits, the sixth stage eliminated all animal products, and the final stage eliminated everything but grains. In all stages, fluid intake was discouraged.

In 1967, the *Journal of the American Medical Association* presented a detailed report of a case of scurvy and malnutrition induced by fanatical adherence to a restrictive macrobiotic regimen. This article set the tone for orthodox medicine's view of macrobiotics. In 1971, the AMA Council on Foods and Nutrition said that followers of the diet, particularly the highest level, stood in "great danger" of malnutrition [JAMA 218:397, 1971].

Kotsch's book describes how a young woman in New York who had followed the highest-level diet had died in 1965—apparently of malnutrition and dehydration. That same year, Ohsawa was sued for medical malpractice and the Ohsawa Foundation in New York was closed after a raid by the FDA.

Boston then became the macrobiotic mecca. The Macrobiotic Center of New York was founded in 1984.

Macrobiotic figurehead Michio Kushi was a student of Ohsawa. Kushi was born in Japan in 1926 and studied political science and international law before coming to the United States in 1949. During the mid-1960s he settled in the Boston area and established Erewhon, a "natural" and macrobiotic foods distributor. During the 1970s, he established *East West Journal* (a monthly magazine), the East West Foundation, and the Kushi Institute. In 1982, the Kushi Foundation was established as the parent organization for the institute and magazine.

The Kushi Institute now has two locations in the United States, one in Becket (in the Berkshire mountains) and another in Brookline, Massachusetts, a suburb of Boston. In addition to holding lectures, seminars, and conferences, the institute markets more than 100 books, audiotapes, and videotapes about macrobiotics and other topics consistent with its beliefs. There are affiliated institutes in London, Amsterdam, Antwerp, Barcelona, Florence, and Lisbon, and about 600 independent macrobiotic "centers" located in many parts of the world. Institute publications state that more than 1,000 people worldwide have attended classes at Brookline and Beckett and graduated from leadership training programs.

East West Journal, which has a circulation of about 100,000, contains more than 100 pages per issue. Its news and feature articles cover health, nutrition, psychology, and environmental issues—from the macrobiotic viewpoint. Its editorial philosophy is antagonistic toward scientific medicine and certain public health measures, including fluoridation. Fringe systems, such as acupuncture, chiropractic, homeopathy, naturopathy, Christian Science, and past-life therapy, are promoted in uncritical articles. Full-page ads appear frequently for food supplements, herbs, "natural" cosmetics, subliminal tapes, and similar products. Classified ads involve such offerings as aromather-

apy, biofeedback, meditation for cancer, a solution for hypoglycemia, vitamins, herbal formulas, "spiritual numerology," natural fibers, astrology, tarot readings, "psychic counselors," "mind expansion video," "karmic life reading," and correspondence courses in natural healing, iridology, and Chinese medicine.

What is Macrobiotics?

"Macrobiotic" is derived from the Greek *macrobiotos*—long-lived. *Webster's Dictionary* defines macrobiotics as "the art of prolonging life." But descriptive definitions abound. A "short" one (five paragraphs long) appears in the December/January 1989 *Solstice*, an independent macrobiotic magazine with a circulation of about 12,000. It states: "Macrobiotics is a way of living with respect for the physical, biological, emotional, mental, ecological and spiritual order of our daily lives." But it is "not a particular form of therapy or medicine," or a religion. Kotsch says: "There is no explicit, generally accepted understanding of what it means to be 'macrobiotic.' Macrobiotics is many-faceted. It includes a diet, a system of medicine, a philosophy, a way of life, a community, and a broad social movement." Ohsawa offered a simple definition in *Macrobiotics: An Invitation to Health and Happiness*: "To live in perpetual ecstatic delight is Do-o-Raku. Those who do so are called Do-o-Raku-Mono. If you are Do-o-Raku-Mono, you are Macrobiotic, whatever you eat."

According to ancient Chinese theory, yin and yang are cosmic principles, complementary opposites. Nothing is completely yin or yang. A given object or condition is yin or yang only relative to another object or condition. Citing yin-yang theory, macrobiotics relates itself to everything in the universe, from world peace to sexual orientation.

In *Zen Macrobiotics*, Ohsawa gave cold and heat, expansion and contraction, outward and inward, up and down, purple and red, light and heavy, and water and fire as examples of yin and yang. As the "principal food," he chose whole grains, particularly brown rice, which he considered to be near the

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midpoint of yin and yang. Macrobiotics classifies foods according to: climate (hot yielding yin foods, cold yielding yang foods); pH (acid or alkaline); taste (sweet or salty); color (purple or red); and water content (perishable or dry). But an orange, despite its yang color, is yin because it is cultivated in tropical and subtropical regions, and is acidic, sweet, and juicy. Orange juice is more yin because of its greater water content. Both foods are undesirable from a macrobiotic standpoint, particularly for persons living in temperate or colder regions, because they are too yin relative to whole grains.

The relationship between macrobiotics and Chinese yin-yang theory is not clear-cut. While macrobiotics distinguishes according to structure, the Chinese theory—which includes acupuncture theory—distinguishes by function. For example, macrobiotics classifies the earth (compact) as yang and the heavens (diffuse) as yin, while yin-yang theory does the opposite. Thus, as Kotsch notes, “while Ohsawa purports to present an ancient Oriental way of thinking, in practice his [system] does not correspond to the classical Chinese system.”

In the March/April 1989 *Solstice*, Kotsch suggested that a shift in emphasis toward healing started in the early 1970s: “I remember Michio saying that if macrobiotics demonstrated that it could cure cancer, it would attract attention and influence many people.” Kushi predicted recently that in 50 to 70 years, “the modern scientific orientation will be re-examined and discarded, as a new science, based on a dynamic understanding of natural order and the unifying principle of yin and yang, begins.”

Yin-yang underpinnings, quasi-religious overtones, and a Japanese culinary bias make macrobiotics complicated. Indeed, it could be considered an antiscientific, metaphysical hodgepodge. But as far as diet is concerned, it boils down to the consumption of unprocessed or minimally processed foods, primarily whole grains and vegetables, which, ideally, should be grown “organically” in the region where the consumer lives and eaten in season. *Health Foods Business* estimates that total 1988 sales of macrobiotic foods through health food stores were \$29.8 million.

The Seminar

Throughout the year, the Kushi Institute conducts residential seminars, ranging from weekend workshops to a 5-week program for leadership training. The seminar I attended cost \$450, including tuition, room, and board. However, upon registering, there was an additional charge of \$30 for membership in Kushi's nonprofit organization, One Peaceful World, which is required for participation in all Kushi Institute programs.

Nineteen people, including myself, attended the seminar. Twelve were medical doctors, including one unskempt homeopath. There were also two registered nurses, an endodontist, an osteopath, a chiropractor, and a Ph.D. involved in nutrition research. Their past experience with macrobiotics ranged from dabbling (one M.D. with cancer) to 10 years, but most of the attendees had been practicing macrobiotics for more than 6 months, and some had been practicing it for several years. They had come from as far as Michigan, Tennessee, and Ontario, Canada. Only two were visibly overweight. The diet provided during the seminar was monotonous but appeared to be nutritionally adequate except for vitamins B₁₂ and D.

The Becket facility, located on 600 acres, has three main buildings: a rambling, multistory Main House, which originally had been a hunting lodge and then a Christian monastery; a dormitory; and a house that contained a library, a kitchen, a dining room, and what appeared to be a Buddhist temple (from where I heard chanting). Orientation took place in the library after dinner. A tall, thin, self-possessed man named Charles Millman presided. Millman introduced our program host, Jimmy, who appeared to be either in his late teens or early twenties. Jimmy had completed Level III of the Leadership Studies Program after emigrating from Yugoslavia with his family. Then his parents, who ran the kitchen, were introduced. In broken English, Jimmy's father told how his wife had recovered from ovarian cancer through macrobiotics. Three years earlier, he said, doctors had predicted she would survive only 2 to 3 months.

Next, Millman introduced the codirector of the Berkshire center and plugged her recently published book-length testimonial. She told us she had grown up with a deep appreciation for health professionals, because she had always been sick. But since 1982, her only health problem had been one headache. The last staff member introduced was John, who gave an abbreviated version of the story he had told me that afternoon.

Each of us received a packet containing information about the diet, macrobiotic seminars and publications, traditional Chinese methods of diagnosis, and the Kushis' natural food store (Aveline's, named after Michio's wife) and restaurant (Ghinga). Millman informed us that Michio and Aveline want to turn the Berkshire facility into the world's leading macrobiotic educational center—a One Peaceful World Center. “By creating biological peace, by giving people health, you can create peace in various families, in various societies, nations, and throughout the world, spreading our teachings, and helping people to live healthy, happy lives,” Millman said. Later he asked us to wash our own dishes and silverware. “This is not part of slave labor,” he assured us, but “simply part of standard macrobiotic lifestyle practice, keeping everything very orderly and very neat.”

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The next morning, at 7:00 A.M., we commenced our daily exercise class in the library. Our instructor, Michael Joutras, said the exercises affected the flow of energy ("ki" or "Chi") through body channels ("meridians"), sharing the same system on which acupuncture and shiatsu (finger pressure at acupuncture points) are based. He instructed us to rub our palms together. "Our hands are especially charged with energy," he said. "There's a meridian going through each finger. . . . Now hold your palms slightly apart. Can you feel any electrical sensation? If you can't, pull them slightly apart, then bring them in closer again. . . . If you can't feel it, that's okay."

Joutras said that while nutritional scientists focus mainly on the physical aspects of food—vitamins, nutrients, fat, and so forth—the Eastern view was broader: "Meat has a certain kind of energy. Sugar has a certain kind of energy. Dairy food has a certain kind of energy. And when we ingest these things, then that energy is going into our body, and being released through the process of digestion, and going through the whole body, carried through the meridian system. And so the underlying basis of sickness was always that energy is imbalanced." Later he stated, "The definition of matter is . . . nothing but energy, and waves, and vibration. . . . There is nothing but condensed vibration. . . . Everything is spirit."

Our daily cooking class began at 10:00 A.M. in the Main House. It was conducted by Wendy Esko, a predictably thin, barefaced, 40-year-old woman with long hair, who stumbled onto macrobiotics 19 years ago and has been practicing it ever since. The class topic was "Medicinal Use of Food." We were warned that Cuisinart-processed vegetables caused hyperactivity.

Next came Martha Cottrell, M.D., a feminist with a Southern accent, who described Kushi as "psychic." Cottrell had contributed to the promacrobiotic collection of essays, *Doctors Look at Macrobiotics*, edited by Wendy Esko's husband, Edward Esko.

"I've been macrobiotic pretty much for about 10 years. I started when I turned 50 in 1978," Dr. Cottrell said. "Without any doubt, I feel that macrobiotics has given me at least 10 years' additional life, and maybe more. And I want to use it well, and have fun doing it, too." Before turning to macrobiotics, she said, she had suffered from arthritis, gastrointestinal problems, psoriasis, and other skin conditions. But she noted that some macrobiotic counselors have not learned how to take care of themselves very well. "Michio is so driven by what he wants to do before he dies," she said. "I was in Florida with him not long ago, and he looked extremely tired. And he's still smoking."

Dr. Cottrell's presentation was followed by dinner—which most of the participants appeared to relish. One M.D. even remarked, "If we have any more food like we've had in the last 24 hours, you'll have to roll us all down the hill."

The next speaker was Edward Esko, a tall, thin, blond man who looked anemic despite a mild facial sunburn. "There's a lot of misconception about macrobiotics," he lamented. "Especially the whole Zen macrobiotics and brown rice diet. . . . actually 25 years out of date and it's still on some people's minds." Then he told how a writer who had recently done a computerized literature search found 23 articles on macrobiotics. Twenty-one were negative. "I think what we need is 20 positive articles about the standard macrobiotic diet published in journals, medical journals, which will counteract that false impression that many people have." George Ohsawa chose the

name "Zen" because of a rough connection with Buddhist vegetarian cooking, and because Zen philosophy was popular at that time in New York. "So it was kind of a marketing strategy," Esko said. While explaining yin-yang theory, Esko nonchalantly refuted Newton's Universal Law of Gravitation, stating that gravity simply doesn't exist.

Esko introduced us to a woman from Lima, Peru, who said she had pursued macrobiotics after having been diagnosed with a brain tumor by magnetic resonance imaging (MRI). She was in her twenties and had beautiful, long hair—which had been temporarily lost as a result of therapy. One of the doctors asked whether she had had another MRI after turning to macrobiotics. She said she hadn't because her doctor had said it was expensive and needless.

Kushi's Presentation

Kushi did not appear until the afternoon of the seminar's third day, when he lectured on diagnostic principles. He is a thin, unremarkable-looking man with short, receding, salt-and-pepper hair and pronounced cheekbones. He wore a three-piece, pinstriped, navy blue suit. His broken English often made him unintelligible. Cameras flashed during his lecture.

"Modern medicine is physical, material way, analytical way," Kushi said, "therefore overlooking this universe's force coming in, and the earth force go up, coming in constantly, constantly, constantly."

To demonstrate this alleged force, Kushi produced nail clippers suspended from a dark thread. "This is no gimmick," he assured us. Then, dangling them over a supine doctor, he proceeded to give the chakra demonstration to which John had referred on our way to Becket. According to Kushi, the chakras caused the clippers to trace small circles over corresponding areas of the body. However, close observation revealed that the circling was caused by movements of Kushi's arm.

The methods espoused by Kushi do not correspond to scientific medical practice but are part of what he calls the "traditional arts of Oriental healing." They include pulse diagnosis, visual diagnosis, meridian diagnosis, voice diagnosis, astrological diagnosis, parental and ancestral diagnosis, aura and vibrational diagnosis, consciousness and thought diagnosis, and spiritual diagnosis—all of which were defined in the information packet we received.

Voice diagnosis supposedly identifies disorders of the glands, organs, and certain body systems. Kushi said, for example, that a "watery voice . . . means natural kidney-bladder is overworked. Also must be blood vessels expanded for too much water. . . . So when [you] hear a watery voice, then you should immediately know heartbeat overworked, and kidney overworked, and blood overworked."

Astrological diagnosis uses the time and place of birth and current astrological and astronomical conditions to "characterize the basic constitutional tendencies of the body and the mind as well as the potential destiny of the current and future life of the subject." After outlining nine Oriental "astrological types," Kushi summoned volunteers representing "opposite" types, compared their smiles, and commented that some were "idealistic, very romantic, uplifted" while their supposed opposites were "gentle" and "more reserved."

Behavior diagnosis supposedly reveals dietary imbalances related to psychological functions. For example, if you eat

too much fish, the next day you will make fish-like movements, Kushi said, illustrating his point by sitting in a chair and moving his knees repeatedly apart and together.

Environmental diagnosis uses atmospheric conditions, including temperature, humidity, celestial influences, tidal motions, and other data to reveal the "environmental cause" of a person's physical and psychological disorders. To illustrate, Kushi said: "Your bed, whether you sleep head north, head south, also different. Which should it be? Head should be more north if you are living in northern hemisphere. If you are living in southern, opposite."

After supper, before the lecture resumed, two doctors tried to duplicate Kushi's demonstration with the nail clippers. When I pointed out to one that her arm was moving, she invited me to try. I did, holding my arm still, and when nothing happened, she responded, "Oh, my God, when somebody wants to, they can really botch this."

The next session opened not with Michio, but with his wife, Aveline, in traditional Japanese dress, discussing her recent translation of a Japanese fortuneteller's book on nutrition. Millman then "treated" us to an 9-minute sample of the translation. Later, Michio held the nail clippers over the head of a woman seated on the floor with her eyes closed and said, "Please just remain quiet, okay? . . . Please, very quiet, please. . . . Now, start to think again. . . . Think of husband or boyfriend. Or romance. Your partner. . . . Now, let's change the content of thinking. Think about war. Many of friends is hurt. . . . Towns and cities are burned and destroyed. Many thousand, thousand people are being killed, and we are burning. . . . You can see, huh? By thought, vibration change. . . . The chakra vibration change." I noted how slight movements of Kushi's arm caused the clippers to swing—this time circling the purported crown chakra—at progressive speeds alleged to reflect the intensity of the woman's mental activity.

Unfortunately, I had to leave the seminar before it ended. When I last saw Kushi, he was exhorting the physicians to fulfill their true role as teachers of the macrobiotic way of life. I think they will.

The Bottom Line?

Lawrence Lindner, executive editor of the *Tufts Diet and Nutrition Letter*, saw Edward Esko for a private consultation at the Kushi Institute as part of an assignment for *American Health* magazine and reported his findings in the May 1988 issue. Lindner was told: 1) his heart was enlarged because he ate too much fruit; 2) his kidneys were weak; 3) he was slightly hypoglycemic; 4) deposits of fat and mucus were starting to build up in his intestines; 5) cold drinks could freeze the deposits and cause kidney stones; and 6) he should avoid chicken because it is linked with pancreatic cancer and melanoma. The consultation cost \$200. He concluded: "The macrobiotic lectures, courses, books and tapes . . . besides running into hundreds or thousands of dollars, teach a philosophy of life, not nutrient interactions." In a recent interview, he added, "Some people are attracted to macrobiotics because, like a typical cult, it seems to offer simple solutions to a variety of life's problems."

Stripped of its philosophy and bizarre notions of body function and disease, does macrobiotic eating make any sense? Over the years, many reports have noted arrested growth and

other forms of malnutrition among children eating a macrobiotic diet. Several lawsuits have claimed that cancer patients who relied upon macrobiotic methods instead of proven therapy met with disaster. (As far as I know, no such case has come to trial. They either are still pending or were settled out-of-court with an agreement not to disclose settlement terms.) Dr. Dwyer's article in the March/April *Nutrition Forum* points out how the diet poses significant risks for cancer patients who use it in addition to conventional methods.

Macrobiotic proponents respond to these criticisms in several ways. They state that deficiencies are the result of following the diet incorrectly—in an overly restrictive fashion. They claim that they do not try to lure cancer patients away from medical treatment with promises that the diet will cure them. And they point to research findings that macrobiotic adherents have lower blood pressure and very low cholesterol levels that protect them against coronary heart disease. (A study by William Castelli, M.D., for example, found that over 100 followers of the macrobiotic diet in the Boston area had an average blood cholesterol level of 125, while a control group of similar ages averaged 185.) However, they are not likely to add that other dietary approaches to disease prevention, such as the Pritikin diet or well-balanced vegetarian diets, are nutritionally superior and much more palatable.

No long-range study has been attempted to measure whether macrobiotic devotees wind up, on balance, better off than their nonmacrobiotic counterparts. Since macrobiotics has so many variables, such a study could be difficult to construct. To begin with, as Kotsch has admitted, no one can say with certainty what it means to be "macrobiotic." And if the results of such a study showed that devotees fared better, the reasons for their success might be extremely difficult to identify.

Thus, although macrobiotic eating might improve the health of many American adults—it presents significant and unnecessary risks of nutritional deficiency. Nutrient supplementation, laboratory tests, and consultations with a qualified nutrition professional could minimize this risk. But macrobiotic philosophy discourages such safeguards.

Mr. Raso is Assistant Chief Dietitian at Wyckoff Heights Medical Center in Brooklyn, New York. He has taught nutrition courses at Pratt Institute and Long Island University and has an abiding interest in "alternative" medicine, "New Age" phenomena, and metaphysics.

INFORMATION WANTED

If you find any newsworthy item, such as a published article or news report, or have a personal experience that might interest our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105. We are especially interested in receiving information about enforcement actions by state agencies and lawsuits by victims of nutrition quackery.

THE SAGA OF CAL-BAN 3000

Stephen Barrett, M.D.

During the past few years, many companies have marketed guar gum tablets or capsules with claims that they can cause weight loss. The most aggressive such company has been Health Care Products, Inc., of Lutz, Florida, which also does business as Anderson Pharmacals. Their product, Cal-Ban 3000, costs \$19.95 for a 3-week supply.

Guar gum is a soluble fiber used as a thickener in sauces, desserts, syrups, and various other foods. It has some medically recognized value as a bulk laxative, a cholesterol-lowering agent, and an adjunct to controlling blood sugar levels in certain diabetics. But it has not been proven effective for weight control. No long-term controlled test of guar gum as a weight-control agent has been reported in the scientific literature. Although weight loss has been reported among individuals who took guar gum during studies related to cholesterol and blood sugar control, this finding has not been consistent.

Anderson Pharmacals would like prospective customers to believe otherwise. In 1987, one of its widely circulated ads asserted that "the scientific community has at last developed a powerful, fast-acting weight loss compound that virtually eliminates dieting, eliminates strenuous exercise, and, most importantly, eliminates fat, flab, and cellulite! The powerful bioactive ingredient . . . works by 'short-circuiting' the fat-building process."

"Incredible But True!" the ad continued, "Cal-Ban 3000 bonds with the food you eat and prevents absorption of a substantial portion of the calories. . . . Your weight loss is automatic! . . . Eat all you want and still lose weight. . . . Please note: . . . Do not allow yourself to become too thin. If you start to lose weight too rapidly, reduce your tablet intake or skip a day or two."

Cal-Ban's marketers claim that guar gum causes weight loss by decreasing appetite and blocking the absorption of fat. When taken by mouth, guar gum does form a gel within the stomach, which may contribute to a feeling of fullness and may bind some nutrients so they are not absorbed. However, it has not been proven that either of these things is enough to produce weight loss consistently. For one thing, many overweight people keep eating even when their stomach signals that it is full. For another, if food absorption is decreased, the individual may eat more to compensate.

In September 1987, the U.S. Postal Service charged Anderson Pharmacals and three of its officers with engaging in a scheme to obtain money through the mail by means of false representations. At the same time, a temporary restraining order enabled the Postal Service to begin detaining mail to the company. Three months later, a hearing was held before an Administrative Law Judge who concluded that guar gum had no proven benefit for weight-reduction—and that even if it had some value, it certainly couldn't do what the ads claimed. Accordingly, he forbade further claims that Cal-Ban can prevent food from being converted into stored fat; that it will cause significant weight loss without discipline, calorie-restricted diets, or exercise; or that obese individuals who take it may reasonably expect to lose weight while continuing to eat all they want.

The hearing officer's decision has enabled the Postal Service to intercept Cal-Ban orders sent through the mail and return them to their senders. The company, however, has continued to run misleading ads in newspapers and magazines and on television. To avoid the Postal Service's clutches, orders are now solicited through a toll-free number, with payment by credit card or COD, and delivery via United Parcel Service. Cal-Ban is also being marketed through pharmacies and health food stores, which are outside of the Postal Service's jurisdiction. A few mail-order companies that include Cal-Ban in their catalog are still soliciting orders with payment through the mail—a situation that will probably trigger further regulatory action by the Postal Service.

The weight-loss claims made for Cal-Ban make it a drug subject to regulation by the FDA. So far, however, the agency has refused to take action to stop its sale. Guar gum is one of many ingredients covered by the FDA's OTC Drug Review, a process begun during the 1970s to judge the effectiveness of all nonprescription drug ingredients on a class-by-class basis. In 1979, an Advisory Review Panel concluded that guar gum had not been tested enough to determine whether it is effective for weight loss. Last year, an FDA official informed Congressman Henry A. Waxman (D-CA) that "while guar gum is under the OTC Drug Review . . . and does not present a health hazard, it may be marketed at the manufacturer's discretion." No completion date for the review process had been targeted.

The FDA's position was sharply criticized by Iowa Assistant Attorney General Ray Johnson at a recent hearing held by the U.S. House of Representatives Subcommittee on Regulation, Business Opportunity and Energy, chaired by Representative Ron Wyden (D-OR). Johnson noted that he and his colleagues have stopped many weight-loss scams from operating within Iowa but seen them continue in other states. Expressing outrage, he stated, "Perpetrators of diet fraud have nothing to fear from the FDA as long as their worthless products are not branded as unsafe. The FDA's failure . . . has given purveyors of diet fraud full reign for nearly 30 years to violate the FDC Act. Resulting consumer losses have been in the billions of dollars."

During the hearing, Wyden's subcommittee released a memo accusing the FDA of "sitting on the sidelines" in the regulation of OTC diet products. After the hearing, FDA staff members claimed the regulations had been tied up because studies involving phenylpropanolamine and benzocaine not been completed. However, on May 16, the agency announced that by the end of 1990 it would propose to ban more than a hundred unproved ingredients used in OTC diet products.

Johnson focused on Cal-Ban during his testimony. He estimated that in 1989, Iowa sales were more than \$200,000 and total U.S. sales exceeded \$20 million. In February of this year, the marketers of Cal-Ban promised to stop selling the product in Iowa and pay \$20,000 to cover the state's cost of taking action against them. Under the consent agreement, the company did not admit wrongdoing. But it will notify its 1989 customers that the Iowa Attorney General believes its ads were misleading and that a refund will be sent if requested. The company also agreed to pay restitution for 1987 and 1988, using a formula based on

the response to the refund offer. Up to \$50,000 will go to the state's Consumer Education Fund, while any excess will be given to an appropriate nonprofit organization.

Cal-Ban ads offer an "unconditional 100% money-back guarantee." However, the Better Business Bureau of New Port Richey, Florida, has given Anderson Pharmacals an "unsatisfactory" business performance record for failing to correct complaints of misrepresentation, nondelivery, and failure to refund money. Some of Cal-Ban's ads contain testimonials with "before-and-after" photographs of people who appear to have lost a great deal of weight. *American Druggist* has reported that the company offers a \$1,000 reward for such testimonials.

John M. D. Morse, M.D., a gastroenterologist in Terra Haute, Indiana, has reported esophageal blockage in two men,

ages 21 and 66 [*Gastroenterology* 98:805, 1990]. Both developed complete obstruction after swallowing four Cal-Ban tablets with water. The obstruction, described as "tenacious," required removal through an endoscope, in one case under general anesthesia. Dr. Morse noted that when a tablet is placed in water, it swells to 4 or 5 times its original size and has the consistency of putty. Cal-Ban is now marketed as capsules, which presumably will reach the stomach without swelling. Esophageal blockage has also been reported with a diet tablet containing guar gum and grapefruit fiber [*N Engl J Med* 322:702, 1990].

All things considered, I believe that Cal-Ban deserves considerably more attention from regulatory agencies than it has received so far.

BRIEFS

Kidney disease research volunteers needed. The National Institutes of Health needs more volunteers for its Modification of Diet in Renal Disease (MDRD) Study of the effect of various nutritional factors on kidney function. The study is under way at 15 university medical centers and needs people with kidney impairment who are between the ages of 18 and 70. Participants will receive—free of charge—an individually tailored nutritional program and careful management of their blood pressure. More than 400 people have enrolled so far, but the researchers would like a total of 800. Individuals who think they have decreased kidney function, or who have high blood pressure or diabetes that does not require insulin, can get more information by calling 1-800-344-2428.

Cholesterol lowered in egg experiment. Purdue University researchers have reported that feeding lovastatin to hens produced eggs averaging 168 mg of cholesterol, while hens on normal diets produced eggs averaging 200 mg. The medicated hens produced the same number of eggs as controls and their eggs contained no trace of the drug. However, the drug is too expensive to make commercial use feasible. Lovastatin is the chemical name for the cholesterol-lowering drug Mevacor.

FTC attacks "Gut Buster." The Federal Trade Commission has charged Fitness Quest, Inc., with making false and unsubstantiated claims about the effectiveness of its Gut Buster exercise device and with failing to disclose that the device may break and cause injury to the user. According to the complaint, the company falsely represented that use of the device would significantly flatten the user's stomach, improve the waistline by strengthening the stomach muscles, and reduce stomach fat. The company also claimed that using the device 5 minutes a day would achieve these benefits and that sit-ups using the device would be more effective than ordinary sit-ups.

HeartGuide terminated. The American Heart Association has canceled its HeartGuide food labeling program because of strong opposition by federal agencies. The program was designed to test and certify processed foods for total fat, saturated fat, cholesterol, and sodium and to label products that met the Association's criteria for good dietary health [*NF* 6:37, 7:7]. Just before the program's start-up date of February 1, a threat of legal action by the FDA caused several manufacturers to withdraw.

Breast-feeding hotline. The nonprofit La Leche League now offers information about breast-feeding through two hotlines, one for mothers (1-800-LA LECHE) and the other for health professionals (708-445-7730). The professional line offers fee-based access to a database with more than 5,000 articles.

Illegal "prostate products" will be banned. The FDA has announced that it will ban the sale of nonprescription drugs for the treatment of benign prostatic hypertrophy. The products, which do not have FDA approval, typically contain amino acids and plant extracts.

Health food store sales hit record high. *Health Foods Business* estimates that 37.8% of sales in health food stores last year were for vitamins and other supplements. Based on its annual survey, the magazine reported that 7,200 stores grossed \$1.579 billion for these products, up 76.5% from 1988. Total sales were \$4.034 billion (up 35%), including \$514 million for herbs and herbal teas (up 100.5%) and \$83.6 million for books (down 3.2%). Stores with under 3,000 square feet of selling space averaged \$393,265, while those over 3,000 square feet averaged \$2,587,000.

"Clinical ecology" attacked. The American College of Physicians has issued a position paper concluding that "there is no body of evidence that clinical ecology treatment measures are effective [*Ann Intern Med* 111:168-178, 1989]. An accompanying editorial in the same issue of the journal notes that its promotion has many characteristics of a cult and that its treatment approach should not be considered harmless. Clinical ecology (also called "environmental medicine" by its proponents) is based on notions that very low doses of chemicals in the environment can overload or weaken the immune system and cause hypersensitivity to common substances [*NF* 4:81-83]. Its methods, which are often quite costly, can place severe constraints on the patient's life and encourage invalidism. The position paper can be obtained from Linda Johnson White, Director, Dept. of Scientific Policy, American College of Physicians, Independence Mall West, Sixth St. at Race, Philadelphia, PA 19106. The editorial can be obtained from Ephraim Kahn, M.D., M.P.H., Hazard Evaluation Section, California Dept. of Health, 2151 Berkeley Way, Room 619, Berkeley, CA 94704.

Alcohol warnings proposed. Senator Albert Gore, Jr., (D-TN) and Representative Joseph Kennedy (D-MA) have introduced identical bills requiring warnings on all alcohol ads and displays. The bills are intended to counter the message of social acceptance conveyed by ads for alcoholic beverages. The warnings, which would rotate like those for cigarette packages and advertising, would cover addiction, drunk driving, fetal alcohol syndrome, combining alcohol and various drugs, and buying alcohol for minors. Two years ago Congress passed legislation requiring warnings on the labels of all alcoholic beverages.

Fraud with fish eggs. Top-quality caviar costs hundreds of dollars per pound. *Food Distribution Magazine* has reported that dishonest suppliers of caviar have been substituting low-grade fish roe for the luxury beluga caviar, which comes from sturgeon caught in the Caspian sea. Americans spend \$15–20 million for caviar every year.

Soy drinks inappropriate for infants. After the report of a 5-month-old child who became severely malnourished, the FDA has asked manufacturers of soy drinks to place warnings on their labels against using them as a sole source of nutrition for infants. These drinks, sometimes inaccurately called “soy milks,” may be consumed by children and adults as part of a balanced diet, but they are not nutritionally complete. Unlike soy-based infant formulas, they typically contain too little calcium, niacin, and vitamins C, D, and E. The FDA would like to be notified about any injury resulting from the use of soy drinks as well as promotion of any soy-based beverage as a replacement for infant formula.

Dubious cancer remedy attacked. The California Department of Health has ordered the Livingston-Wheeler Clinic in San Diego to stop treating cancer patients with a vaccine made from their own urine. The clinic's director, 83-year-old Virginia Livingston, M.D., postulates that cancer is caused by a bacterium she calls *Progenitor cryptocides*, which invades the body when resistance is lowered. To combat this, she claims to strengthen the body's immune system with various vaccines; a vegetarian diet that avoids chicken, eggs, and sugar; vitamin and mineral supplements; visualization; and stress reduction. She claims to have a very high recovery rate but has published no clinical data to support this. Attempts by scientists to isolate the organism she postulates have not been successful.

Food innovations. The Institute of Food Technologists (IFT) has listed the following, in order of importance, as the top innovations in the past 50 years: 1) aseptic (germ-free) packaging; 2) safe canning of vegetables; 3) the microwave oven; 4) frozen concentrated citrus juices; 5) controlled-atmospheric packaging of fresh fruits and vegetables (to retard spoilage); 6) freeze drying; 7) frozen meals; 8) improved understanding of water activity in foods; 9) food fortification; and 10) ultra-high temperature (UHT) pasteurization. IFT experts conceived the idea and published it as a staff report in connection with IFT's 50th anniversary [Food Technology 43:308, 1989]. Other important innovations that did not make the “top ten” list included polyunsaturated corn oil margarine, hydrogenation of fat, high-fructose corn syrup, aspartame, and extrusion technology, which is used to make chips, snack bits, and certain dry breakfast cereals.

FDA PLANS TO CHANGE FOOD LABELING RULES

When the FDA issued a proposal in 1987 to allow health claims on product labels, many commenters said the proposal was too broad and would allow claims not justified by scientific research. So the agency has replaced the 1987 proposal with a new one [Federal Register 55:5176–5192, 1990]. If adopted, the plan would allow companies to present specific messages on their products regarding: 1) calcium and osteoporosis; 2) sodium and high blood pressure; 3) dietary fats and heart disease; 4) dietary fats and cancer; 5) dietary fiber and cancer; and 6) fiber and cardiovascular diseases.

Under current laws, any claim that a food is effective in the prevention, cure, mitigation, or treatment of any disease or symptom would subject the product to regulatory action as a “drug.” The new proposal would permit claims about the association between diet and the above-mentioned conditions if the label statements are: 1) truthful and not misleading, 2) limited to describing the relationship between a particular food component and a chronic disease; and 3) consistent with sound total diet.

Under the proposal, a committee of government nutrition experts would help develop scientific summaries, consumer health message summaries, model label statements, and a consumer guide to food labeling. Label claims will be required to be consistent with information in the summary and must indicate the availability of the summary. When judging

claims, the FDA will consider what is left out as well as what is included.

Part of the impetus for the new proposal was a court case in which the FDA had attempted to stop a manufacturer from marketing a supplement product (Exachol) with claims that it could help lower blood cholesterol levels. The FDA charged that the product was both a misbranded food and an unapproved new drug. The manufacturer argued that the FDA had neither formally adopted nor uniformly enforced its 1987 health claims proposal, and that the claims made for Exachol were similar to those made for breakfast cereals and cooking oils. The court sided with the manufacturer, ruling that the agency could not restrict a small supplement-maker while ignoring similar claims made by major food companies.

The FDA has also announced plans for changing the rules for other aspects of food labeling. Current regulations require nutrition labeling only on nutrient-fortified foods or foods about which the company makes a nutritional claim. During the next 2 years, the agency expects to propose that all foods that are a meaningful source of nutrition must have nutrition labeling. Saturated fat, cholesterol, fiber, and calories from fat will have to be disclosed. Uniform definitions of health-related terms such as “low-fat” and “high-fiber” will be developed and required. And the format of nutrition labels will be revised.

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NUTRITION QUACKERY: RECENT TRENDS AND TIDBITS

Stephen Barrett, M.D.

Not much is known about the epidemiology of quackery. Few large studies have been performed to determine how many people are victimized, why they are vulnerable, and how they can be protected. Nor has much been published about the numbers of people and companies involved in the promotion of quackery. I find these issues fascinating and have been devoting increasing amounts of time to exploring them.

Vitamin Advertising

The leading nutrition scam is "nutrition insurance," the concept that everyone should take supplements to be sure they get enough vitamins and minerals. Drug companies making this pitch tend to say it is difficult to get enough from food, while health food industry communications suggest that it is impossible.

"Stress vitamins" are a related scam promoted with claims that stress "robs" the body of nutrients. Lederle Laboratories, the makers of *Stresstabs*, began using this theme in 1975 and continued it in various forms for about 10 years.

During the same period, Hoffmann-La Roche also used misleading ads to promote vitamins. Most of these ads suggested that to be sure of getting enough vitamins, a daily supplement was advisable. But some suggested that "the stress of illness" would lower vitamin C plasma levels or that "as part of everyday living you do things that may be lowering the level of vitamins in your body and robbing you of these vital nutrients." Another ad contained a headline and statement, "Up tight or up in smoke . . . With both acute stress and heavy cigarette smoking, the plasma levels of vitamin C in your blood may be lowered."

Several other drug companies and more than a hundred health food industry manufacturers joined the fray, some using similar advertising and some merely relying on "stress" in their product's name to do the selling for them. Although I have not seen any overall estimate, I suspect that sales topped \$100 million a year at the peak of the "stress vitamins" market.

According to Leon Ellenbogen, Lederle's chief of nutritional science, the concept of high-dosage stress vitamins was based on a 1952 National Academy of Sciences report that

recommended extra vitamins for people suffering from stresses such as general surgery, serious burns, and major fractures. However, the report actually stated that "in minor illnesses or injury where the expected duration of the disease is less than 10 days and when the patient is essentially ambulatory and is eating his diet . . . a good diet will supply the recommended dietary allowances of all nutrients."

In 1986, to settle action taken by New York State Attorney General Robert Abrams, Lederle paid \$25,000 to the state and agreed not to make unsupportable claims that emotional stress causes depletion of water-soluble vitamins, that *Stresstabs* will reduce the effects of psychological stress, or that consumers undergoing ordinary physical stress cannot obtain all necessary nutrients by eating a well-balanced diet or by taking an ordinary potency (about 100% of the U.S. recommended daily allowance [RDA]) multiple vitamin supplement. In 1985 E. R. Squibb & Sons signed a similar consent agreement that included a \$15,000 penalty.

Since these cases were settled, I have seen no ads for "stress" supplements placed by drug companies, but several health food industry manufacturers still use false claims to market these supplements. Ads for "nutrition insurance" have become less frequent and more subtle. For example, Hoffmann-La Roche, which makes most of the raw ingredients used by other vitamin manufacturers, is spending millions of dollars advertising that foods containing beta-carotene may help prevent cancer, that beta-carotene is being studied as a cancer preventive, and that it is a good idea to include foods containing beta-carotene in your diet. (You can decide for yourself whether this information is provided as a public service or to stimulate the sale of beta-carotene supplements.)

Pharmacists

Pharmacies typically carry hundreds of irrationally formulated supplements, some of which are completely useless. Many pharmacies display posters or flyers that tell what vitamins do in the body. (These obviously are intended to promote sales by inducing customers to think that if a little is good, more is better.) Pharmacy schools appear to teach the facts needed to

advise people that "nutrition insurance" is rarely needed, that "stress" supplements are a scam, and that doses above the RDAs are rarely appropriate. Yet pharmacists throughout America seem content to sell supplements to people who do not need them. Their professional journals rarely contain articles criticizing the fraud involved.

Dubious "Supplement" Products

Under federal law, any product "intended for use in the cure, mitigation, treatment, or prevention of disease" is a drug. Drugs that are not generally recognized as safe and effective by experts are considered "new drugs" that cannot be legally marketed without FDA approval. If a product is marketed with illegal therapeutic claims, the manufacturer can be ordered to stop making the claims. The FDA can also initiate seizure of the product, obtain an injunction, and/or seek criminal penalties.

Despite the law, the health food industry markets a steady stream of products intended for the prevention and treatment of virtually every health problem. Hardly a month goes by without a new item added to its endless list. The amount of literature containing illegal claims varies considerably from manufacturer to manufacturer. Some distribute materials marked "for professional use" or "confidential," which retailers can use covertly to advise their customers. Sometimes these are distributed at health expos or at seminars sponsored by the company or a distributor. Some companies distribute literature intended to be displayed or given to customers. Health food stores can obtain these sales aids by contacting the companies or using the reader service card of a trade publication in which the company advertises.

Manufacturers wishing to minimize the risk of triggering regulatory action provide no printed information and assume that customers will be educated through other channels of communication. Magazines catering to the health food industry publish a steady stream of articles encouraging supplement use and supporting the products of their advertisers. These magazines are available by subscription or given free to health food store customers. A few mail-order companies publish newspaper-like catalogs containing articles as well as product information.

Enforcement actions taken by the FDA during the past 2 years have crimped the sales of a few product categories and stopped a few manufacturers from making blatant therapeutic claims about a large number of their products. However, illegal marketing is still common.

Since AIDS became a household word, dozens of products have been claimed to help "strengthen" the immune system. The FDA has taken action against some of these, but many are still marketed.

"Ergogenic aids"—supplement concoctions claimed to increase stamina, endurance, muscle bulk, and/or athletic performance—are probably the health food industry's hottest current product line. About a hundred companies are marketing them. Most if not all products of this type are fakes, but government agencies have shown little interest in curbing their sale.

Food Advertising

Public focus on the relationship between diet and heart disease has spawned a large number of related advertising

claims for food products. Since the public is much more familiar with "cholesterol" than with "saturated fat," many manufacturers have been making "no cholesterol" claims even for foods that are high in fat. Thus, unsuspecting consumers interested in trying to adopt healthier eating habits might actually make things worse by eating these foods. A similar situation exists for some products containing oat bran. Although oat bran can play a valuable role in lowering cholesterol as part of a low-fat diet, some "oat bran" products contain insignificant amounts of oat bran or contain undesirable amounts of fat as well. New rules proposed by the FDA within the past few months should correct these problems.

Mail Frauds

In 1977 I headed a study of ads for products sold by mail through magazine ads. After the Pennsylvania Medical Society obtained 500 nationally circulated magazines, I sorted and evaluated the ads. About one fourth of the magazines carried such ads, with a total of about 155 products from 50 companies. Not one product could live up to its advertised claims. The study touched off a chain of events leading to passage of the Mail Order Consumer Protection Amendments of 1983, which gave the Postal Service the ability to investigate faster and to recommend penalties of up to \$10,000 a day for repeat offenders. It appears that the number of fraudulent magazine advertisements for mail-order products has dropped sharply as a result.

In 1987 I screened five of the tabloid newspapers over a 3-month period and found many misleading ads. I plan to survey both magazines and tabloids again within the next few months. Bad ads for "food supplements" appear regularly in publications allied with the "health food industry." Most invite prospects to obtain the products through retail outlets, but some sell by direct mail. About a dozen companies, which stock and sell hundreds or thousands of supplement products, issue monthly catalogs that contain ads with false or misleading claims. Overall, I suspect that the number of individuals and companies

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engaged in "nutrition-based" mail frauds is now small enough that, once the marketplace has been mapped, the Postal Service will be able to clean it up.

Two areas that are difficult to measure are direct mail solicitations and telemarketing scams. I have seen many direct mail solicitations for weight-reduction schemes and "anti-aging" products. Some of these look like reproductions of newspaper ads (although they may not have actually been published) with a handwritten note in the margin or on a Post-it. The Iowa Attorney General has seen evidence that people who buy one bogus diet product often receive ads for others. Curious to see whether the names of presumably gullible subscribers to the tabloids would wind up on "sucker lists," I used code names to subscribe during my 1987 study. To my surprise, I received no unsolicited mailings under these names.

Telemarketing schemes remain a serious problem. Typically, they involve notification that the recipient has won a "valuable" prize. To collect, the recipient must order a large supply of vitamins, a water purifier, or something else that costs hundreds of dollars. If delivery is made, the prize is invariably worthless, the product order overpriced, and the "money-back guarantee" is not honored. When the product has been ordered by credit card, the buyer can usually prevent loss by asking the credit card company to reverse the payment. But many buyers don't realize this or waste so much time trying to get a refund that the deadline for action through the credit card issuer expires.

Dubious Practitioners

Several hundred physicians practice "clinical ecology" (also called "environmental medicine"), a pseudoscience based on the notion that hypersensitivity to tiny amounts of common foods and chemicals can trigger a wide range of symptoms. Similar numbers practice "orthomolecular therapy" (sometimes referred to as "megavitamin therapy"), which is based on the idea that most ailments will respond to the "correct" doses of nutrients. Some physicians who prescribe supplements for the gamut of ailments call their approach "nutritional medicine." Many of these practitioners diagnose hypoglycemia, hypothyroidism, candidiasis hypersensitivity, and chronic fatigue syndrome in large numbers of their patients.

Some dentists espouse the idea that the mercury in silver-mercury fillings is toxic and can cause a wide range of illnesses. They recommend that such fillings be replaced with other materials, which can cost thousands of dollars. The leading advocate of "mercury-amalgam toxicity," a Colorado dentist, recommends an elaborate program of supplements to minimize negative effects he claims can occur when the mercury-containing fillings are removed.

Significant percentages of chiropractors are involved in unscientific nutrition practices. Many companies market supplements to chiropractors with claims that they are suitable for treating almost anything. The claims, which would not be legal on product labels, do not appear on the labels. Rather, they are made in literature distributed by mail or provided at seminars in which use of the products is described.

State boards have taken a few actions against licensed practitioners who are engaged in unscientific practices, but much more action is needed to protect the public.

Cancer Quackery

During the past decade, there has been a trend away from dubious "drug" products, such as laetrile, into regimens that include diets, enemas, vitamins, minerals, glandulars, enzymes, and various nostrums that are not legally marketable in the United States. Practitioners of "metabolic therapy" claim to diagnose abnormalities at the cellular level and correct them by normalizing the patient's metabolism. They claim that cancer (as well as other diseases) is the result of metabolic imbalance caused by a buildup of toxic substances in the body. They also claim that scientific practitioners merely treat the symptoms of the disease, while they treat the cause by removing "toxins" and strengthening the immune system so the body can heal itself. These ideas have no scientific basis but have popular appeal because the treatment approaches include diet and lifestyle changes that encourage patients to feel they are in control.

Proponents of dubious methods of cancer treatment have been very active politically. They have lobbied, staged demonstrations, and produced considerable literature advocating their case. A few years ago, as a result of Congressional pressure, the Office of Technology Assessment (OTA) began a lengthy investigation of "unconventional" methods of cancer therapy. The first draft of the OTA report, which was circulated for comment this year to advocates as well as critics, looked quite good to me. It was hoped that the final report would be published soon, but the wheels of government turn slowly. Meanwhile, two other important reports are nearing publication, a book I am editing for the Florida Cancer Society and a computerized database developed by attorney Grace Monaco.

Multilevel Marketing

During the past 5 years, I have collected information on more than 30 companies engaged in person-to-person sales of food supplements, homeopathic remedies, herbal remedies,

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and other health products. Virtually anyone can become a distributor by filling out a one-page application and buying a distributor kit for \$20 to \$35. Kits typically contain a sales manual, product literature, order forms, and a 1-year subscription to a magazine published by the company. Once on board, the distributor can buy products "wholesale," resell them at "retail" prices, and recruit other distributors. When enough distributors have been recruited, the recruiter is eligible to collect a percentage of their sales. Companies suggest that this process provides a great money-making opportunity. However, it is unlikely that people who do not join a company during its first few months of operation or are among the early distributors in their community can build enough of a sales pyramid to do well.

Most multilevel companies promote their products with claims that they can prevent or cure a wide range of diseases. A few companies merely suggest that people will feel better, look better, or have more energy if they use supplements.

When illegal therapeutic claims are made in product literature, the company is an easy target for government enforcement action. Some companies run this risk, hoping that the government will not take action until their customer base is well established. Other companies make no claims in their literature but rely on testimonials, encouraging people to try their products and taking credit for any improvement that occurs. Testimonials may be published in company magazines, audiotapes, or videotapes. Many companies hold meetings at which people are encouraged to tell their story to the others in attendance. Testimonial claims can trigger enforcement action, but since it is time-consuming to collect evidence of their use, few government agencies bother to do so.

Government enforcement action against multilevel companies has not been vigorous. Typically, the companies are left alone unless their promotions become so conspicuous and their sales volume so great that an agency feels compelled to intervene. Even then, few interventions have substantial impact once a company is well established. The most effective intervention I have seen was against United Sciences of America, which had been marketing supplements claimed to prevent heart disease and many other health problems. An FDA regulatory letter and an embargo by Texas authorities stopped sales dead in their tracks [NF 4:25-30, 1987]. The company, which had been having financial problems, was unable to recover and was liquidated a few months later. On the other hand, Herbalife and Sunrider International have thrived despite both FDA and state enforcement actions.

The Media

Overall, during the past decade, the media have become a bit more aggressive regarding quackery. *Reader's Digest*, *Family Circle*, *Hippocrates* (now *In Health*) and *Redbook* have published excellent articles. The *Family Circle* article, which told how readers could report problems or send questions to the National Council Against Health Fraud, generated more than 150 queries.

Many well written health and nutrition newsletters have achieved large circulations. My favorites are the *Mayo Clinic Health Letter*, *Mayo Clinic Nutrition Letter*, *Tufts University Diet and Nutrition Letter*, *Harvard Medical School Health Letter*, and *Consumer Reports Health Letter*.

The number of "health food" magazines has increased, but *Prevention*, whose circulation is larger than those of all the others combined, has swung away from nutrition nonsense and now is very careful about its nutrition articles. Although it still tends to emphasize news about nutrients (which may stimulate readers to take them unnecessarily), its nutrition articles undergo expert prepublication review and generally are timely and accurate. The magazine's advertising content has also changed dramatically. Years ago, there were dozens of pages of supplement ads in every issue. Today there are very few.

Rodale Press's book division and its Prevention Book Club still market many titles that are not worth the paper they are printed on, but there is hope that this situation will improve. No clear trend is apparent among other book publishers. Most appear willing to publish anything they think will sell. Nonsensical books involving nutrition are published frequently, but books containing valuable advice about health and nutrition also are published frequently. The antiquackery exposes produced by the George F. Stickley Company during the early 1980s are either out of print or nearly so. I plan to remedy this situation with at least one book per year, starting with *Health Schemes, Scams, and Hoaxes*, which will be published by Consumer Reports Books in December.

Television remains a mixed bag. While the Donahue and Sally Jessy Raphael shows remain meccas for quacks, *Inside Edition*, shown on CBS, has a special interest in exposing quackery. Measuring how radio talk shows fit into the national picture would be a massive undertaking because there are so many of them. But it is clear that in many communities such programs are a major source of misinformation. Several leading promoters of quackery are talk show hosts who provide a forum for a steady parade of irresponsible guests. Programs boosting nutrition nonsense have considerable popular appeal and advertiser support, which encourages stations to keep them on the air.

Antiquackery Activities

Overall, I am optimistic about antiquackery. The American Dietetic Association is working steadily to achieve state laws to outlaw the practice of nutrition by individuals who lack adequate training. The National Council Against Health Fraud has established a growing network of activists who are accomplishing much in their own states and local communities. The council publishes a bimonthly newsletter and maintains many task forces that produce position papers. It helps quackery victims file lawsuits and gives awards to journalists who attack quackery. (Membership information can be obtained by writing to the council at P.O. Box 1276, Loma Linda, CA 92354.)

Last year, John Renner, M.D. began operating the Consumer Health Information and Research Institute (CHIRI) in Kansas City, Missouri. Its purpose is to promote consumer and patient education activities, including studies of misinformation, fraud, and quackery. CHIRI has scheduled a National Health Fraud Conference from September 14 to 16 in Kansas City. (For information call 816-753-8850.)

Drs. Renner and Victor Herbert are still pursuing libel suits against the National Health Federation (NHF) and various other defendants. It is too soon to predict the outcome, but the suits appear to have caused considerable friction among NHF's

present and former leaders. According to a special NHF report distributed in July, its long-time lobbyist was fired for setting up an unauthorized bank account, and its former longtime attorney is suing NHF for \$64,633.17 for allegedly unpaid fees in the Herbert and Renner cases. NHF has generated many mass letter-writing campaigns that were effective in lobbying against government regulation of questionable health methods. But financial difficulties and infighting appear to have weakened NHF greatly.

In July 1990 I retired from my job at a hospital clinic so I could spend more time investigating and writing about the health

marketplace. I still see private patients, but most of my time is spent doing research. Information sent by *Nutrition Forum* readers is very helpful to me.

Dr. Barrett, who practices psychiatry in Allentown, Pennsylvania, edits *Nutrition Forum Newsletter* and is a board member of the National Council Against Health Fraud. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting Nutrition Quackery. In 1986 he was awarded honorary membership in the American Dietetic Association.

BRIEFS

Toxicity of sustained-release niacin. Near-fatal hepatitis has been reported in a previously healthy 32-year-old man who had taken one 500-mg timed-release niacin tablet daily for 2 months, purchased at a health food store [JAMA 264:181, 1990]. Niacin is an effective and relatively safe drug for cholesterol control but is not suitable for self-medication. Crystalline ("regular") niacin has a greater incidence of minor side effects (flushing and burning of the skin) but is considerably less troublesome to the liver. Several observers have expressed concern that sustained-release niacin is too readily accessible without a prescription [JAMA 264:241-243, 1990].

"B₁₅" sellers convicted. Michigan Pharmacal, Inc., of Ferndale, Michigan, was fined \$10,000 plus \$90,000 in costs after pleading guilty to knowingly and willfully (through its employees) making false statements to the FDA in 1983 about the amount of calcium pangamate it had in stock. Company vice president William Farber was fined \$1,000 after pleading guilty to conspiring to mislead the FDA and continuing to distribute the product, which contained N,N-dimethylglycine, which the agency considers a nonconforming food additive [FDA Consumer 24(3):40, 1990]. The criminal charges were filed in 1987. *Editor's note:* Various compounds called "B₁₅," "vitamin B₁₅" or "pangamic acid," have been claimed to enhance athletic performance and to be effective against cancer and many other diseases. The FDA greatly reduced its sale in the early 1980s by securing civil court orders against three manufacturers attempting to market "B₁₅" as a dietary supplement. This case is significant because the agency rarely uses criminal prosecution in cases involving "supplements."

Irradiation of poultry approved. The FDA has approved the use of irradiation to control *Salmonella* and other illness-causing bacteria in chicken, turkey, and other fresh or frozen uncooked poultry. Agency scientists described irradiation as the first approved process to "pasteurize" solid foods. As with the heat-pasteurization of milk, irradiation reduces but does not eliminate all bacteria. Thus processed poultry, like pasteurized milk, would be safer but would still require refrigeration. The FDA has also decided that irradiated foods should continue to carry a representative logo and be labeled "treated with radiation" or "treated by radiation." Poultry industry officials have expressed disinterest in irradiation out of fear that consumers would disapprove.

FDA clips "Body Toddy." Rockland Corporation has signed a consent agreement to stop selling Body Toddy with health claims that lack FDA approval. The company had claimed it is effective against aging, cancer, diabetes, cataracts, high blood pressure, thyroid deficiencies, stroke, heart attack, high cholesterol, depression, loss of memory, and many other problems. The product—touted to "supercharge your immune system"—was claimed to be a liquid concentrate of pure natural minerals that come from a "natural deposit phenomenon of prehistoric vegetable and plant matter."

Quackery report. An excellent article on nutrition fads has been published in the *American Journal of Gastroenterology* [85:510-515, 1990]. Reprints are available from Michael Mogadam, M.D., 5021 Seminary Road, Suite 124, Alexandria, VA 22311.

Book bargains. Firms that sell remaindered books by mail can be a good source of quacky diet and nutrition books that are no longer stocked in bookstores—often at 20-40% of their original list price. One of the best is Edward R. Hamilton, Falls Village, CT 06031.

New Jersey curbs dubious methods. The New Jersey State Attorney General has secured consent agreements barring Linda Choi, M.D., and Pruyakant Doshi, M.D., from: 1) using chelation therapy to treat cardiovascular diseases; 2) using hair analysis as a tool for nutritional assessment; and 3) diagnosing and treating "*Candida albicans* overgrowth syndrome." Both were assessed \$3,000 for investigative costs and had their medical license placed on probation for 1 year. Investigation by the state medical board had concluded that: 1) chelation therapy has not been accepted as safe and effective for the purposes used by the doctors; 2) hair analysis has no medically valid purpose except as a diagnostic screening device for lead poisoning in at-risk populations (not the purpose for which Choi and Doshi were using it); and 3) "*Candida albicans* overgrowth" is not generally recognized as a clinical entity and has not been established as the cause of the conditions they treated.

WIC program endangered? Senator Howard Metzenbaum (D-OH) has charged that infant formula prices are so high that thousands of women and children are being denied much-needed food. At a public hearing held by the Senate Subcommittee on Antitrust, Monopolies and Business Rights, he accused three leading manufacturers of "follow-the-leader" price-fixing that he said might violate federal antitrust laws. The manufacturers denied this and stated that price hikes are legitimately due to rising costs of research and development, capital expenditures, personnel, and other related expenses. Approximately 30% of all infant formula is purchased by the WIC program, which is designed to provide help to low-income women and children considered to be nutritionally at risk. At the end of June, Congress voted to allow states to borrow 3% against next year's appropriation, but it still appears that some states will have to eliminate participants.

FDA law available. Copies of the Federal Food, Drug, and Cosmetic Act, including all amendments, can be obtained for \$7.50 from the U.S. Government Printing Office, Superintendent of Documents, Washington, DC 20402. (Ask for publication #017-012-00347-8.) FDA publication No. 2 (order #107-012-00343-5), which summarizes the laws in lay terms, costs \$2.75.

Lactation suppressants seldom appropriate. The FDA has asked the manufacturer of Parlodel (bromocriptine) to stop labeling the drug for use in drying up milk production and preventing breast engorgement in mothers who do not breast-feed. The agency has also asked manufacturers of products containing estrogens and androgens to stop labeling these as lactation suppressants. Research has shown that the traditional treatment of pain-relievers, ice packs, and a well-fitting bra or specially made breast binder is sufficient. Breast engorgement is short-lived; and although perhaps 10% of women may benefit from drug treatment, the risk of side effects exceeds the likelihood of benefit [FDA Consumer 23(10):3, 1989 and 24(3):25-27, 1990].

Notable quote. "Consumers with misinformation about nutrition typically fall into two categories: the deceived and the deluded. The deceived can respond to education, but the deluded are adamant—even fanatical—about their beliefs, and will refuse to consider good scientific data or a logical presentation."—Victor Herbert, M.D., J.D.

Magazine sued. Martin Katahn, Ph.D., author of *The Rotation Diet*, has filed a \$5.75 million dollar libel suit against *Good Housekeeping*, charging that an article in its March 1990 issue caused "great injury" to his reputation and impugned his veracity. Katahn's diet is based on the premise that rotating daily intakes of 600, 900, and 1,200 calories facilitates weight loss by preventing the metabolic slowdown caused by constant low-calorie dieting. The 172-word article referred to a controlled study reported in the *American Journal of Nutrition* and concluded that rotation does not work. The suit charges that the article misrepresented the results of the study whose rotating diet program was similar but not identical to the Rotation Diet. According to the suit papers, *The Rotation Diet* appeared on the *New York Times* best-seller list for 49 weeks and has more than 1 million hardcover copies and 1.5 million paperback copies in print.

Vitamin store cited. Acting on a complaint by Dr. Stephen Barrett, the Pennsylvania Department of Health has cited the Vitamin Healthcenter in Whitehall, Pennsylvania, for offering to sell misbranded and unapproved new drugs and for being an unregistered distributor of drugs. The citation concerned *Amino Hair*, a high-potency formula claimed to reverse male pattern baldness, and *Immuno-C*, which was promoted as helpful against arthritis, AIDS, flu, atherosclerosis, and cancer. The store—which agreed to correct the violations—is part of a chain located in shopping malls throughout Connecticut, Florida, Maryland, New Jersey, New York, and Pennsylvania.

Great Earth penalized. Great Earth International, the nation's second largest health food store chain, has agreed to pay \$100,000 in penalties plus \$9,520 in costs to settle charges brought by the Orange County District Attorney. The case involved advertising claims made for vitamin E ("helps dissolve existing clots . . . making the heart a more efficient pump"), *Yeasterol* ("to control . . . *Candida albicans*, a troublesome yeast"), *Lowestrol* ("may not only counter the build-up of cholesterol deposits, but may also appear to reduce the blood's tendency to clot"), *Elavita Formula DP* ("gives the body and brain the special nutrients it needs" for alertness, memory, motivation, learning, sex drive, and positive emotions), *Nutrimune* ("shown to boost the body's defense system"), *Thymosin* ("boosts the body's resistance to disease!"), *Rejuva-cell* ("anti-aging . . . retards hair loss . . . lowers blood pressure, improves sexual function . . . reduces cholesterol"), and *PMS Formula*. Without admitting wrongdoing, the company signed a consent agreement pledging to refrain from marketing products that are misbranded or are unapproved new drugs.

"Organic" bill advances. A national organic food certification program funded by tax dollars was included in the 1990 Farm Bill package approved on April 27 by the U.S. Senate Agriculture Committee but is not yet included in the Farm Bill in the House of Representatives. The legislation calls for a USDA "organically produced" label for agricultural products that meet federal standards set with the help of a 13-member advisory board. States could set stricter standards but could not restrict sales of USDA-certified products from other states. The Agriculture Department, which opposes the "organic" legislation, has proposed forming a national commission to study the most effective means to establish a national certification program. Daniel D. Haley, administrator of the Agriculture Department's Marketing Service, has expressed concern that consumers may be led to believe that "organic" foods are significantly safer, more nutritious, or of higher quality. In an article in *USA Today*, he said his department supports national minimum standards supported by industry user fees, but the current legislation "is impractical, unwieldy, costly, and would require excessive government surveillance at both the national and state levels."

Impact of cholesterol education. Cholesterol-consciousness is increasing. National surveys conducted by the FDA and the National Heart, Lung, and Blood Institute have found that the proportion of persons who reported ever having had their blood cholesterol checked rose from 35% in 1983 to 58% in 1988, and the proportion knowing their cholesterol level rose from 3% to 17%. State health departments have observed slightly smaller numbers in surveys conducted during 1988 [JAMA 263:3133-3135].

Sokolof strikes again! Early this Spring, Phil Sokolof attacked McDonald's in a series of ads headlined "The Poisoning of America." The ads said that the company's hamburgers should have their fat content reduced by 10%. Although McDonald's termed Sokolof's ads "reckless and misleading," it subsequently reduced the fat content of its shakes, began phasing out the use of beef tallow for cooking french fries, and said it will post complete nutritional information about its products at all outlets. Sokolof is a Nebraska businessman who became concerned about diet and cholesterol after he had a heart attack. In 1988 he launched a \$2 million campaign attacking tropical oils—a move that probably helped persuade major food companies to stop using them in many of their products [NF 6:37]. McDonald's, which has 11,000 franchised outlets in the United States and 52 other countries, is celebrating the 35th anniversary of its founding.

Calories and aging. According to researchers who spoke at a recent international conference, evidence continues to accumulate that diet and caloric restriction may lengthen life span and retard the susceptibility of animals to cancer and other age-associated diseases and physiological processes. It was also noted that some animals studied this way had decreased fertility and problems with bone development. Human studies to explore the significance of these findings have not been performed. The conference, held in March in Washington, D.C., was sponsored by the International Life Sciences Institute.

Fiber cookie crunched. In response to an FDA regulatory letter, Phoenix International Marketing Corporation of Sparks, Nevada, has agreed to halt distribution of its Phoenix Fiber Cookie, Phoenix Fizzie, Phoenix Nutritious Beverage, and Phoenix Vitamin and Mineral Capsules. The FDA notified the company that promotional material distributed with the "Phoenix for Life" Weight Control System made unsubstantiated medical claims that the products were useful for weight control, cardiovascular disease, colon cancer, diabetes, and diverticulitis. In addition, government tests had shown that the cookies contain twice the claimed 120 calories.

Novel weight-control device. A New Jersey man has offered a \$25,000 reward to anyone who catches him in the act of eating at a restaurant. (The money would be given to a charity selected by the recipient.) So far, according to CBS TV's *Inside Edition* the man has lost 67 pounds.

Tryptophan update. As of mid-May, 1,500 cases of eosinophilia-myalgia syndrome, including 23 deaths, have been reported among L-tryptophan users in the United States, and 10 cases have been reported in Canada. Most cases appear to be linked to products from one Japanese manufacturer [JAMA 264:213-217, 1990], which health food industry trade publications have identified as Showa Denka.

VITAMIN A CASES SETTLED FOR RECORD SUM

Two victims of vitamin A toxicity have obtained out-of-court settlements totalling nearly \$900,000. Their problem arose in 1979 after chiropractor Vernon P. Mannon of Peoria, Illinois, prescribed massive doses of vitamin A for Judith Cramton and her children, Lynne and Dale II. Mrs. Cramton had sought help for her children's ichthosis, a congenital disorder in which the skin is scaly and resembles that of a fish. For 9-year-old Lynne, Mannon prescribed 750,000 international units (IU) daily for several weeks to be followed by 370,000 IU daily for 2 months. For 4-year-old Dale, he prescribed 675,000 IU daily for 2 months and then half that amount. Mannon also advised Mrs. Cramton to take 1,250,000 IU plus scores of other supplements because he said her diet had been inadequate.

Within a few months, all three Cramtons developed symptoms of vitamin A poisoning. Mrs. Cramton developed swelling of the brain, manifested by blurred vision and headaches. Lynne experienced similar symptoms plus musculoskeletal pain and tenderness, hair loss for 2 months, and damage to the growth centers of several of her bones. Dale developed bone pain and enlargement of his liver and spleen.

Although their acute symptoms subsided after the vitamin A was stopped, both children were permanently damaged. One of Lynne's legs is several inches shorter than the other, which has caused her to develop scoliosis. Dale has permanent damage to his liver and spleen.

The vitamin A products Mannon prescribed—and sold—were manufactured by Nutri-Dyn, Inc., and Biotics Research Corporation, both of which market primarily through chiropractors. In 1984, Mrs. Cramton and her husband began a series of suits against Mannon and the manufacturers, charging negli-

gence in failing to warn that high doses of vitamin A were dangerous. The suits also claimed that the products had been marketed illegally because vitamin A is not generally recognized as safe and effective for the treatment of ichthosis. In fact, several weeks before Mrs. Cramton consulted Mannon, the FDA had proposed a rule to ban OTC marketing of vitamin A for ichthosis [Federal Register 44:16126-16164, 1979]. Ironically, Nutri-Dyn's product, a liquid emulsion containing 12,500 IU per drop, was labeled, "Keep out of reach of children."

In 1986, Dale's case against Mannon was settled out-of-court for the \$100,000 limit of Mannon's insurance. Nutri-Dyn paid \$245,000 to settle the children's cases in 1987, and Biotics settled for \$450,000 in 1988. In 1989, Lynne's case against Mannon was settled for the \$100,000 policy limit. Their lawyer was Thomas H. Tate of Coale, Kananack & Murgatroyd, Washington, D.C., who specializes in product liability and birth defect litigation. Mr. Tate believes that vitamin A products should carry warnings on their label, particularly about use by children.

Vitamin A toxicity can result from ingesting excessive doses of vitamin A on a regular basis for weeks or years. The signs and symptoms that develop as body stores build up include dry and itchy skin, headache, hair loss, bone malformations, bleeding tendencies, bone fractures, muscle and joint pain, visual problems, and liver toxicity. Most adverse effects disappear after excessive intake is stopped, but permanent damage to the liver, bones, and eyes can occur. The settlement in this case is the highest payout ever reported in a lawsuit involving vitamin A toxicity.

BOGUS DEGREES IN THE NEWS

Raymond J. Salani operates Nutri-Care Health Center in Shrewsbury, New Jersey. Since the early 1980s, he has represented himself as a nutritionist and health consultant with a Ph.D. degree. According to his ads, Nutri-Care is "a preventive health care facility that helps you fight disease, resist stress, and reach your best level of health—nutritionally—without drugs." A Nutri-Care brochure asked whether you would like to "strengthen yourself" against 96 "common health problems" ranging from bad breath and dandruff to cancer, heart disease, and stroke.

In some ways, Salani conducted himself like a medical doctor. He saw clients by appointment, took their medical history, ordered laboratory tests, and prescribed products. He even provided statements for insurance companies. But his activities were neither legal nor medically sound.

In February 1989, the New Jersey attorney general and the state board of medical examiners charged Salani with practicing medicine without a license, violating the state's clinical laboratory act, and committing insurance and consumer fraud. The complaint stated that Salani misused the term "doctor," prescribed "excessive quantities" of food supplements that were ineffective or potentially toxic, and issued fraudulent reports to insurance companies.

The complaint was supported by affidavits from six former patients and four undercover investigators who had consulted "Dr." Salani for leg cramps, stomach cramps, migraine headaches, obesity, epileptic seizures, hypoglycemia, allergies, and attacks of shortness of breath. In most cases, he had ordered urine and blood tests and outlined a program of vitamins, minerals, and other dietary supplements that would cost hundreds of dollars. Nutri-Care performed the urine tests although it was not licensed to operate a bioanalytic laboratory. The blood tests were ordered from a licensed laboratory using preprinted request slips with "Nutri-Care Health Center" stamped on the line that said "Physician's Signature." Several patients complained that Salani's charges exceeded his original estimates, that the amounts reported to insurance companies were less than what they had paid, and that he had billed for tests that had not been performed.

Salani led many of his patients to believe that his work was done under medical supervision. His receipts and reports to insurance companies were made using "Physician's Statements" preprinted with the words "Mill Run Associates, J. Willard Cook, M.D., Medical Director," at Nutri-Care's address. Dr. Cook—a family practitioner in Shrewsbury—occasionally referred patients to Salani and sometimes saw some of Salani's patients for consultations. But Salani did most of his work independently. Although Cook knew that Salani billed insurance company reimbursement for services performed by Salani under Cook's name, he continued to maintain his relationship and perform medical screenings for Nutri-Care. Cook was also aware that medical laboratory work was being done under his name even though he had not seen the patients and the results went to Salani.

In November 1989, New Jersey's medical licensing board reprimanded Cook for permitting his name to be used in connection with Salani's operation of Nutri-Care Health Center. The board also fined Cook \$2,500 for aiding and abetting Salani's unlicensed practice of medicine.

Salani's "Ph.D. degree" is from Donsbach University, an unaccredited correspondence school operated by Kurt Donsbach, a chiropractor who has been a major figure in the food supplement industry. In 1971, Donsbach pleaded guilty to practicing medicine without a license after agents of the Fraud Division of the California Bureau of Food and Drug observed him representing to customers at his health food store that vitamins, minerals, and/or herbal tea were effective against cancer, heart disease, and other ailments. He was assessed \$2,750 and served 2 years' summary probation.

Accredited nutrition degrees require several years of study based on current scientific knowledge. Degrees from Donsbach University—which taught that virtually all ailments have nutritional solutions—could be obtained in less than a year. In December 1989, a New Jersey superior court judge permanently enjoined Salani from representing to the public that he has a doctoral degree unless he acquires one from an accredited school. "He's not entitled to give people the impression he is super extra," the judge commented. "He did not get a Ph.D. from an accredited university. . . . If the public was aware that there were mail-order courses, they would say it's a Mickey Mouse degree."

In March 1990, the judge approved a consent agreement barring Salani from representing himself as a doctor, recommending supplements for the prevention or treatment of any specific medical condition or complaint (except under medical supervision), diagnosing medical conditions or symptoms, or filling out insurance forms in a misleading manner. Salani is also required to inform his clients that the FDA does not recognize any need or usefulness for the products he typically recommends. To settle the case, Salani paid the state \$11,000, part of which was used for restitution to insurance companies and former patients.

Donsbach himself is involved in a scandal involving "naturopathic" degrees. In June 1988, the Arizona Naturopathic Physicians Board of Examiners revoked the naturopathic license of Jess Franklin Lee after determining that he had used a counterfeit credential to obtain his license. In 1983, when Lee applied for his license, he submitted a diploma dated "17th June 1961" from the "Hollywood College School of Naturopathy" in Los Angeles, California. Subsequently, however, Arizona authorities concluded that no such school had existed and that the "diploma" had been created by making altered photocopies of a 1961 diploma from the Hollywood College School of Chiropractic. A few months ago, the Oregon Office of Educational Policy and Planning concluded that Donsbach and four others had done the same thing to become licensed as naturopaths in Oregon. The Oregon Board of Naturopathic Examiners is expected to revoke their licenses.

Donsbach now operates a Mexican hospital that "specializes in the treatment of chronic, degenerative diseases including cancer and multiple sclerosis." In 1989, he resigned as board chairman of the National Health Federation (an aggressive health food industry lobbying group) and founded the Confederation of Health Organizations "to unite the major elements of the alternative holistic health movement." He has also launched another unaccredited school to issue "Ph.D." degrees. A lengthy account of his activities was published in the October 1987 issue of *Nutrition Forum*.

Forum

V O L . 7 N U M B E R 5

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NATURAL HYGIENE: STILL ALIVE AND DANGEROUS

Jack Raso, M.S., R.D.

Natural Hygiene is a comprehensive philosophy of health and "natural living" that advocates a raw food diet of vegetables, fruits, and nuts, denounces virtually all medical treatments, and promotes fasting as desirable during health and beneficial against disease. According to its philosophy:

Health is the result of natural living. When people live in harmony with their physiological needs, health is the inevitable result. By supplying the organism with its basic requirements (natural, unadulterated food; sunshine; clean, fresh air; pure water; appropriate physical, mental and emotional activities; and a productive lifestyle) while simultaneously eliminating all harmful factors and influences, the self-constructing, self-regulating, self-repairing qualities of the body are given full rein.

Background History

Health Science, the magazine of the American Natural Hygiene Society, states that the Natural Hygiene movement was founded during the 1830s by Sylvester Graham, "America's first crusader for healthful living in diet, exercise, sleep, bathing, clothing, and sexual, emotional and mental expression." The movement enjoyed considerable popularity, but declined until "resuscitated" from "almost dead" by Herbert M. Shelton (1895-1985).

In a 1978 interview in *Natural Living*, Shelton described his educational background: "I postgraduated from the University of Hard Knocks and left before I got my diploma. I went through the usual brainwashing process of the school system in Greenville, Texas and revolted against the whole political, religious, medical and social system at the age of sixteen." During the next several years, he obtained a "Doctor of Physiological Therapeutics" degree from the International College of Drugless Physicians, a school established by Bernarr Macfadden, and took a postgraduate course at the Lindlahr College of Natural Therapeutics in Chicago. Then he went to New York where, "after nine months of brainwashing," he acquired degrees in chiropractic and naturopathy.

In 1920, after further study and apprenticeship at various institutions, Shelton published the first of his 40 books, *Fundamentals of Nature Cure*. In 1928, he founded Dr. Shelton's Health School in San Antonio, which operated at seven different locations until 1981. From 1934 through 1941, he produced a 7-volume series under the title *The Hygienic System*. In 1939, he launched *Dr. Shelton's Hygienic Review*, a monthly magazine that was published for about 40 years.

Organized Activity

The fountainhead of today's Natural Hygiene activity is the American Natural Hygiene Society (ANHS), founded in 1948 by Shelton and several associates and now headquartered in Tampa, Florida. Regular ANHS membership costs \$25 and includes a subscription to *Health Science*, a 32-page bimonthly magazine. In 1989, ANHS had about 6,000 members and an income of about \$500,000. ANHS has been active in promoting certification of "organic foods" and opposing compulsory immunization, fluoridation, and food irradiation.

Each issue of *Health Science* contains a Professional Referral List. Most of those listed are chiropractors, but a few hold medical, osteopathic, or naturopathic degrees. The list includes 13 "certified members" and 7 "associate members" in the United States, and 15 more members in other countries. Certified members include ANHS founders and subsequent members who have "successfully completed an internship (or its equivalent) in Natural Hygienic care with an emphasis on Fasting Supervision and are certified by the International Association of Professional Natural Hygienists as Specialists in the Application of Fasting Supervision and Natural Hygienic Care."

Therapeutic Philosophy

According to an ANHS brochure:

A thoroughgoing rest, which includes fasting, is the most favorable condition under which an ailing body can purify and repair itself. Fasting is the total absti-

nence from all liquid or solid foods except distilled water. During a fast the body's recuperative forces are marshalled and all of its energies are directed toward the recharging of the nervous system, the elimination of toxic accumulations, and the repair and rejuvenation of tissue. Stored within each organism's tissues are nutrient reserves which it will use to carry on metabolism and repair work. Until these reserves are depleted, no destruction of healthy tissue or "starvation" can occur.

ANHS publications promote fasting for children as well as for adults.

The brochure also states:

Natural Hygiene rejects the use of medications, blood transfusions, radiation, dietary supplements, and any other means employed to treat or "cure" various ailments. These therapies interfere with or destroy vital processes and tissue. Recovery from disease takes place in spite of, and not because of, the drugging and "curing" practices.

In 1982, a federal court jury awarded over \$800,000 to the survivors of William Carlton, a 49-year-old man who died after undergoing a distilled water fast for 30 days at Shelton's Health School. An article in the *Los Angeles Times* stated that Carlton had died of bronchial pneumonia resulting from a weakened condition in which he lost 50 pounds during his last month of life. The article also noted that he was the sixth person in 5 years who had died while undergoing treatment at the school. Shelton and his chiropractic associate, Vivian V. Vetrano, claimed in their appeal that Carlton had persisted in fasting after Dr. Vetrano had advised him to stop. However, the verdict was upheld by the Fifth Circuit Court of Appeals and the U.S. Supreme Court declined further review.

"Food Combining"

Another conspicuous component of Natural Hygiene is its system of "food combining." In *Food Combining Made Easy* (a "nutrition classic," according to its cover), Shelton wrote: "To a single article of food that is a starch-protein combination, the body can easily adjust its juices . . . to the digestive requirements of the food. But when two foods are eaten with different . . . digestive needs, this precise adjustment of juices to requirements becomes impossible." Natural Hygienists believe, for example, that consuming a high-protein food and a high-carbohydrate food at the same meal will, at the least, tax the body's enzymatic capacity.

Such pronouncements were debunked more than 50 years ago in both scientific and popular literature, but the Hygienic faithful still hold them dear. In a review of studies of human gastric digestion of proteins and carbohydrates in health and disease, published in 1934 in the *Journal of the American Medical Association*, researcher Martin E. Refhuss, M.D., presented detailed evidence that "clearly proves that any presumed incompatibility between protein and carbohydrate food . . . is certainly not sustained." Of the likes of Shelton, Dr. Refhuss wrote: "One searches in vain through the literature revealing several thousand contributions by research workers on diet and nutrition to find any real scientific work by these reformers."

In *Food Combining*, Shelton grouped foods into seven categories "according to their composition and sources of origin": 1) proteins such as nuts, peanuts, and avocados; 2) starches, including sweet fruits, such as peanuts (again), chestnuts, pumpkins, bananas, and mangos; 3) fats such as most nuts (again) and avocados (again); 4) acid fruits such as citrus fruit and tomatoes; 5) "sub-acid" fruits such as pears and apricots; 6) non-starchy and green vegetables such as lettuce, broccoli, and watercress; and 7) melons such as watermelon, honeydew, and cantaloupe. Hygienic classification schemes differ somewhat, but certain listed foods, such as garlic (an "irritant"), and all animal-source foods, are not recommended under any circumstances.

Shelton taught that the following combinations are indigestible: "acids" and starches; proteins and starches; acids and proteins; fats and proteins; sugars and proteins; sugars and starches (note that Shelton classified sweet fruits as starches); melons and anything other than fresh fruit; and even two different proteins.

Despite a plethora of absurdities, Natural Hygiene has enjoyed a renaissance of late, thanks to Harvey and Marilyn Diamond and their books *Fit for Life* (1985) and *Living Health* (1987). Harvey received his "Ph.D. in nutritional science" from T. C. Fry's unaccredited American College of Health Science in Texas—now called the Life Science Institute—which offers a voluminous correspondence course detailing Fry's views. Natural Hygiene advocates have written two other popular books: *The Beverly Hills Medical Diet* (1982), by Judy Mazel, and *Unlimited Power* (1986), by Anthony Robbins.

The 1990 Conference

Both Harvey Diamond and T. C. Fry were present at the American Natural Hygiene Society's 42nd Annual International Natural Living Conference, held at Hofstra University in New York from July 27 to August 1, 1990. I attended the morning and afternoon sessions on July 28 and found a revivalistic atmosphere with about 250 people present. One person sitting near

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me in the first row insisted, mysteriously, that Hygiene "changes you." I didn't pursue the subject.

Ronald G. Cridland, M.D., Director of the Fundamental Health Center in Toronto, Canada, was the first speaker of the day. His topic was "Natural Hygiene: The Science of Health." Cridland referred to Greek mythology and great medical reformers such as Ignaz Semmelweis and Louis Pasteur in an effort to lend credence and historical depth to the work of Shelton, Sylvester Graham, and other Hygienic pioneers. Cridland eulogized Semmelweis as a man who "did everything he could to try and raise the education of his peers. He gave lectures, and he wrote papers . . . and he was always put down. In fact, eventually he died insane . . . a couple of hundred years before his time." Cridland then trivialized the practice of immunization.

Cridland summed up Hygienic philosophy: "Disease is a result of a susceptible organism, because you are not living within your capacity. . . . The idea is to identify and remove factors that interfere with the healing process in our diet, in our environment, in our activity, and in our psychology." Regarding diet, he said that "raw vegetables probably should provide the majority of your diet" and also that "At one time we may have been designed to subsist largely on fruits, because fruits were more like vegetables than they are today. They had less sugar content, more fiber content."

When Cridland was finished, the moderator instructed us to turn to the people next to us and hug them twice.

The next speaker was Alec Burton, M.Sc., D.O., D.C., Director of the Hygeia Health Institute in Sydney, Australia. His lecture was titled "Diet and Nutrition from the Natural Hygiene Perspective."

Burton likened extracted oils to sugar, stated that "no fat or oil should be added to food in any way at all," and described processed fats as "highly dangerous." He claimed (incorrectly) that the National Research Council "recommends one percent of calories from fat . . . about thirty calories or . . . the equivalent of half a teaspoon of oil. And that's what they recommend as probably the ideal."

Taking aim at what he considered the follies of nutritional science, Burton opined that "the history of nutrition . . . often reads like the work of a mentally defective person on a bad day." He cited the mistaking of beri beri for an infection and a commission's conclusion that pellagra was caused by the bite of a horsefly. "I want to go on," he said. "There are endless stories associated with very, very serious errors and serious mistakes."

Burton suggested that the need for protein is about 20 grams a day, and warned against eating polar bear liver (which is extremely high in vitamin A). Unlike macrobiotic adherents, he boasted, Natural Hygienists do not develop scurvy. But later he advised not to eat too much fruit. Burton ended his talk saying that "Really good science is also good common sense."

He was followed by Ralph Cinque, D.C., Director of the Hygeia Health Retreat in Yorktown, Texas, whose topic was: "Setting Your Goals as a Natural Hygienist."

"More than anything else," said Cinque, "hygiene should free you from therapeutic dependencies, both physically and psychologically. I want to remind people of something: that there is a veritable army of therapists out there waiting like sharks to justify giving you treatments. And I believe that the best attitude that you can have is to be skeptical of all of it. . . .

And I believe that the extent to which you can be free of therapeutic dependencies should be the measure of your success as a Hygienist."

At lunchtime I asked a gentleman for directions to the dining room. He engaged me in conversation and introduced me to his daughter. They had come to the conference from the Midwest. His daughter had been diagnosed with chronic fatigue syndrome due to Epstein-Barr virus. I interviewed both of them and obtained a diet history from the daughter.

She was 22 years old, was about 5' 5" tall, and weighed between 98 and 100 pounds—at least 11% below a desirable weight of 113 pounds based on an assumed small body frame type. Her total energy need for weight maintenance is at least 1,675 kilocalories per day. Her typical food intake consisted of melons for breakfast; two bananas and three peaches at lunch; a salad of Romaine lettuce, carrots, zucchini, avocado, and tomato—sans dressing—at dinner; and water between meals. She had recently undergone a medically supervised 18-day fast, during which she had consumed only distilled water.

Her father explained: "We went all over the country looking for a cure, and there is no cure for it." Many drugs were considered, he said, "but drugs have such a significant adverse effect."

Despite some improvement in her condition over a month she spent in the care of an orthodox physician in California, he said, they went to Denver to meet with an uncredentialed "natural healer" who had worked with rock stars, using diet, "mental control," exercise, and relaxation to maintain their "high energy level." At that point, his daughter "was really feeling bad. She could hardly get up in the morning. . . . She couldn't go to college. [She was] very depressed." The "healer," using *Fit for Life* as a guide, worked with her five days a week for six weeks—about two years ago. But for about a year and a half, she had been following a stricter Hygienic regimen. Now she was on the verge of emaciation. "We went on blind faith," her father admitted.

Lunch consisted of raw, fresh, non-starchy vegetables, fresh fruit (no melons), and raw almonds. As we neared the end of a long buffet table, I expressed my concern that no dressing would be available. But in fact there were two dressings of a sort—one a thick, bland avocado dip, the other like watered-down, unsweetened punch. I did not enjoy lunch.

Nor did I enjoy the next lecturer, Jim Lennon, Executive Director of the American Natural Hygiene Society and a former musician. Jim offered "faith-keeping" tactics to ward off inquiries by well-meaning but "misguided" significant others into the safety and wherefores of Hygienic eating, and then gave a pep talk.

"What is the famous question?" he asked. "Right: 'Where do you get the protein?' The answer is, 'It's in everything! Thanks for asking; how are the kids?' Because you don't want to talk about that, do you? . . . You can change the subject. You are not working for the other people that you run into in your life. You don't have to answer every question. You don't have to be a physiologist."

He told the attendees they were leaders, celebrities, because they "don't go along with the crowd. You're different. You have the courage to go your own way. How unique that is!"

"Who bothers you?" he asked. "The answer is, the people who know they should be doing it. . . . As soon as someone starts bothering you, that's a victory. . . . They're

trying to figure out a way to make it okay that they don't [follow the diet]." Later Lennon stated that grandparents "can only inspire" dietarily recalcitrant grandchildren.

The last afternoon speaker, D. J. Scott, D.C., restated Lennon's sentiments toward doubters of Natural Hygiene: "You start out with the realization that people challenge you because . . . somehow or other they feel a wee bit threatened."

"Hygienists don't need those surgical procedures," Scott declared, referring to hysterectomies and prostate surgery. "I've seen massive tumors of the pelvic organs, women with thyroid tumors as large as a 7-month pregnancy, ovarian cysts that completely fill up an abdomen. And those things, even though they have had them for lengthy periods of time and have been recommended to have immediate surgery, do diminish. They do gradually diminish, not in one week of fasting, not in a month of fasting, but over months of Hygienic living."

Throughout the program, there was considerable talk about "vitality." Yet, in just the vicinity of my seat, I counted 13 people, young and old, who were napping.

Overview

In *Science and Unreason* (1982), Daisie and Michael Radner explain the "marks of pseudoscience," among them anachronistic thinking, a grab-bag approach to evidence, argument from spurious similarity, research by exegesis (regarding science as all statements by scientists, open to interpretation), and refusal to revise in the light of criticism. The authors suggest that just one of these characteristics is sufficient to render a theory or practice pseudoscientific. Natural Hygiene encompasses all five of them.

Any philosophy, pseudoscientific or other, is dangerous to the extent that it promotes practices likely to produce illness or unnecessary hardship and discourages those likely to prevent or relieve health problems. The degree of danger also depends on the extent to which unhealthful recommendations are followed.

Natural Hygiene is dangerous because it trivializes nutrient needs, encourages prolonged fasting, and discourages medical interventions almost across the board. While its recommended diet has two admirable characteristics (low fat content and high fiber content), its proscription of both dairy products and supplements in its primarily raw food diet is an invitation to osteoporosis.

Although Natural Hygiene's dietary rules are rigid and restrictive, its adherents vary considerably in the extent to which they follow them. Acknowledging this in a *Health Science* interview, Ralph Cinque has conceded: "I don't think it is right to tell a person that bad things are happening inside them because of a certain [food] combination. . . . I don't think . . . that they should suffer mental distress over their food combinations." The Diamonds, too, in *Fit for Life*, give reluctant consent to the consumption of milk (preferably unpasteurized) and plain yogurt; and their dinner menus include seafood and fowl.

No scientific study has ever compared the disease and death rates of Hygienists with those of other people. But it appears to me that the hazards far outweigh the possible benefits.

Mr. Raso is Assistant Chief Dietitian at Wyckoff Heights Medical Center in Brooklyn, New York.

BRIEFS

Pork producers squealing. Some of Pennsylvania's pig farmers have objected to the use of pigs in ads for a statewide anti-litter campaign. The \$400,000 campaign, announced in July, identifies people who litter as pigs. One television ad, for example, shows a young man gradually transforming into a pig as he admits littering. According to an Associated Press report, the farmers complained that the ads created an unfair image of pigs, which are intelligent and clean.

Perrier relabeled. Perrier mineral water bottled for U.S. distribution may no longer be labeled "natural sparkling" mineral water. The FDA says that this is a false claim because the water is not carbonated when it emerges from the spring in Vergese, France, but is added when carbon dioxide is added to the mineral water. Last February, Perrier's manufacturer conducted a worldwide recall after benzene (a carcinogen) was discovered in samples of its products. It turned out that minuscule amounts of benzene and other impurities are naturally present in the carbon dioxide gas, which is mixed into the water to give Perrier its fizz. The problem was traced to negligence in changing filters that remove chemicals in the gas before it is mixed with the mineral water. The manufacturer has agreed to relabel bottles as containing "natural mineral water" and to provide the FDA with the results of daily laboratory tests for possible benzene contamination.

Free booklet. The American Dietetic Association and the International Food Information Council have developed "10 Tips to Health Eating," which can be obtained by sending a stamped, self-addressed, 4" x 9 1/2" envelope to 10 Tips, P.O. Box 1144, Rockville, MD 20850.

Sugar information. "About Sugar: A User's Guide," a booklet that explains sugar's role in food technology and provides illustrative recipes, is available free of charge from the Sugar Association, 1101 15th Street, N.W., Suite 600, Washington, DC 20005. The Association also is distributing a brochure called "A Chef's Guide to Low Fat, High Pleasure Eating," which contains recipes and cooking tips useful for reducing dietary fat.

Court protects diet book publisher. A Pennsylvania Superior Court has upheld a lower court summary judgment dismissing a suit against the publisher of *The Last Chance Diet*, by Robert Linn, D.O. The suit had been brought by the administrator of the estate of a woman who died in 1977 of complications allegedly caused by a liquid protein diet recommended by the book. The appeals court reasoned that publishers are protected by the First Amendment right to freedom of speech and that a book cannot be considered a defective product under tort law [Smith v. Linn, 563 A. 2d 123 (Pa. Superior Ct., Aug. 7, 1989)].

Phony steroid ring smashed. A lengthy investigation by the FDA, Internal Revenue Service, and Justice Department has led to the breakup of one of the largest counterfeit steroid rings in the United States. The ringleader, Don L. Tirado, of San Jose, California, was sentenced to 4 years in prison after pleading guilty to three felony counts of counterfeiting, money laundering, and conspiracy. According to a report in the July/August *FDA Consumer*, Tirado and two associates marketed 14 fake anabolic steroid products during 1986 and 1987. Their tablets were low-dose vitamins that had been obtained from legitimate manufacturers in unlabeled bottles and packaged to mimic brand-name steroids. Their injectables were composed of sesame oil, water with artificial sweetener, or diluted milk of magnesia. Anabolic steroids, which can cause serious harm, are widely abused by athletes, especially bodybuilders and weightlifters.

Another "anti-Candida" product snuffed. During 1988, the FDA initiated a seizure of *Yeastop*, a vitamin concoction claimed to be effective against yeast micro-organisms that have become "overgrown" or "out of control." The manufacturer, Nature's Herbs, of Orem, Utah, claimed that the product was a "dietary supplement." But the FDA charged that the therapeutic claims on its label made it an illegal drug. In January 1990, a federal judge ruled that *Yeastop* was a drug and ordered Nature's Herbs to pay for its destruction and for other court costs and fees.

Opposition to BST. Two of the nation's leading milk-producing states have passed laws temporarily banning the use of bovine somatotropin (BST), a hormone that increases milk production. Minnesota has enacted a 1-year ban, while Wisconsin has banned BST until July 1, 1991, or 6 months after the FDA approves its use, whichever comes later. The main reason for the ban is political: fear that BST use will drive small farmers out of business. However, small farms are failing anyway. An editorial in the *Journal of the American Medical Association* notes that, since 1980, more than 10,000 dairy farms have stopped operating in Wisconsin alone, indicating an intrinsic trend toward larger, more efficient farms [JAMA 264:1028, 1990]. The editorial also notes that BST's opponents tend to use groundless safety and health issues as a red herring to strengthen their economic concerns. Although milk produced by BST-treated cows is no different from milk produced by untreated cows, five large supermarket chains have agreed not to use it for their house brands of dairy products. FDA scientists have concluded that BST presents no health risk to consumers [Science 249: 875-883, 1990]. A reprint of their report can be obtained by writing to C. Greg Guyer, Ph.D., FDA Center for Veterinary Medicine, 5600 Fishers Lane, Room 8-81, Rockville, MD 20857.

Dubious clinic operator dies. Virginia Livingston-Wheeler, M.D., who claimed to cure cancer by strengthening the immune system with various vaccines and dietary measures [NF 7:24], died in June at the age of 84.

More alcohol warnings. Representative Joseph Kennedy (D-MA) and Senator Albert Gore, Jr. (R-TN) have introduced bills to require warnings in all broadcast and print ads for alcoholic beverages. Print ads would also have to include a toll-free number readers could call for more information about the risks of drinking. Proponents of these bills note that the alcoholic beverage industry spends some \$2 billion per year for ads and other promotions. "For years, the American public has been receiving a lopsided message from the industry," Kennedy said at a recent hearing. "It is time we wake up and say 'enough is enough.'" The National Institute on Alcohol Abuse and Alcoholism estimates: 1) more than 18 million Americans age 18 and older abuse alcohol; 2) each year, more than 40,000 infants are born with alcohol-related birth defects; and 3) each year, about 24,000 people die and 500,000 are injured in alcohol-related motor vehicle accidents. However, ads portray alcohol use as fun and relaxing with no adverse consequences. A law requiring label warnings went into effect in November 1989. Like the tobacco industry, the alcohol industry maintains that its ads are not directed at children, do not cause increased consumption, and are intended to promote brand loyalty and brand switching by competitors' customers.

Libel suit dismissed. On August 7, a federal judge dismissed the suit filed against *Good Housekeeping* by Martin Katahn, Ph.D., author of *The Rotation Diet*. Katahn [NF 7:30]. The judge ruled that the article was not libelous.

USDA hotline busy. During fiscal year 1989, a record 64,000 consumers called the Agriculture Department's Meat and Poultry Hotline (800-535-4555) for advice on food safety. Most inquiries concerned basic safe food handling and storage. The service operates weekdays from 10 AM to 4 PM, EST.

AIDS videotape. The FDA, Centers for Disease Control, and Whitman-Walker Clinic have produced a videotape to show how people with AIDS can reduce their risk of acquiring food-borne infections through careful food selection and preparation. Copies are available for \$8.95 from the National AIDS Information Clearinghouse, P.O. Box 6003, Rockville, MD 20850. The clearinghouse maintains a toll-free number (800-458-5231) for answering questions. A CDC official has stressed that AIDS infections are not acquired by eating food or drinking liquids.

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Parents sentenced for child's death. A Toronto couple, Sonia and Khachadour Atikian, have been sentenced to 2 years in prison for "failing to provide the necessities of life" for their daughter, Lorie, who died in 1987 at the age of 17 months. Testimony at the trial indicated that the child died of pneumonia and malnutrition after being kept on a Spartan diet. Mrs. Atikian maintained that she was following the advice of herbalist Gerhard Hanswille, who claimed his system could help make Lorie a "superbaby." Hanswille admitted that, on the day before Lorie died, he had treated her with an "electromagnetic machine" and advised that she be wrapped in cabbage leaves. But he denied influencing Mrs. Atikian against conventional treatment and said he had told her to seek medical advice. Hanswille, who was unlicensed, also told the court that in 1972 he had obtained a "doctor of naturopathy" degree from Bernadean University (an unaccredited correspondence school in Nevada that was never licensed to operate or issue degrees). The judge and jury apparently believed that the Atikians should have realized that Lorie was desperately ill and needed medical care.

Smoking impairs ability to smell. A study of 638 individuals for whom detailed smoking histories were available has shown that smoking decreases the sense of smell in a dose-related manner in both current and previous smokers [JAMA 263:1233-1236, 1990]. Although improvement usually occurs when smoking is stopped, restoration of olfactory function to the level observed in nonsmokers requires about as long as the number of years smoked. Previous studies have been contradictory, but the researchers believe this happened because former smokers were included in the "nonsmoking" groups. Reprints are available from Richard L. Doty, Ph.D., Smell and Taste Center, Hospital of the University of Pennsylvania, 3400 Spruce St., Philadelphia, PA 19104.

"Right-to-die" verdict. The U.S. Supreme Court has affirmed that competent people have a right to refuse life-sustaining treatment, including artificially given food and fluids. But when patients are incompetent, the court said, they are unable to make informed and voluntary choices. States are therefore justified in requiring "clear and convincing evidence" of the patient's wishes before allowing withdrawal of such support measures. The ruling was applied to the case of 32-year-old Nancy Cruzan, who has been in a coma due to irreversible brain damage since a 1983 car accident. By a 5-4 vote, the Supreme Court upheld a Missouri Supreme Court ruling that Ms. Cruzan's guardian could not terminate her treatment because there was not sufficient evidence of her wishes. The verdict has stimulated many hospitals to become more aggressive about having patients sign living wills or other "advance directives" to be used if they become irreversibly ill and are unable to speak for themselves. Groups promoting the concept of living wills have been flooded with requests for forms. U.S. Senator John Danforth (R-MO) has introduced the Patient Self-Determination Act, which would require hospitals and nursing homes to inquire about advance directives. The American Medical Association (AMA) has asked that the bill be modified to ensure that patients are not unduly pressured during the admission process. Similar legislation pending in the House of Representatives was modified to conform with the AMA's wishes.

Death associated with "tanning" pill. Canthaxanthin is a fat-soluble carotenoid that the human body cannot convert to vitamin A. It is legally used in tiny amounts as a food coloring agent. Despite a warning by the FDA, it is illegally sold in tanning parlors and by mail as a tablet for skin tanning, under such names as *Orobronze*, *Darker Tan*, and *BronzGlo*. Ads for *Darker Tan* promise "a rich dark bronze glowing tan without risking skin cancer." A case has been reported of a 20-year-old woman who took high doses and developed aplastic anemia, a serious condition in which the production of blood cells is impaired [JAMA 264:1141-1142, 1990]. The authors note that although a single case cannot establish a cause-and-effect relationship, no other cause was apparent. Previous reports have linked canthaxanthin use to hepatitis, generalized itching, hives, and eye problems.

Weight loss and gallstones. Several researchers have reported increased gallstone formation and gallbladder sludge (probably a precursor of stones) among patients who lost weight rapidly with gastric bypass surgery or very-low-calorie weight-loss programs. According to the July 1990 Medical World News, Nutri/Systems is facing many lawsuits.

Cholesterol and colon cancer. A study has found that 69 patients with colon cancer had significantly lower blood cholesterol levels than matched control subjects who were followed over a 10-year period [JAMA 263:2083-2085, 1990]. The data were obtained from the population of a large outpatient medical clinic that performed periodic examinations with emphasis on early detection of cancer. Each of the cancer patients was matched with a control patient of the same sex and within 1 year of age in whom cancer did not develop. The researchers concluded: 1) individuals who develop colorectal cancer share the same serum cholesterol level as the general population initially; 2) during the 10 years preceding the cancer, they demonstrate a gradual decline opposite to the rising level generally seen with age; 3) cholesterol levels of the cancer patients did not become lower as their cancers advanced; 4) the data support the hypothesis that the decline is associated with the genesis of the cancer rather than a consequence of the cancer; 5) it is possible that genes on one particular chromosome are responsible for both decreased cholesterol synthesis and development of the cancer; and 6) further research must be done to elucidate the significance of the study's findings. Reprints can be obtained from Sidney J. Winawer, M.D., Gastroenterology Service, Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY 10021.

Cholesterol-lowering drug use soaring. U.S. retail pharmacies filled nearly 13 million prescriptions for cholesterol-lowering drugs during 1988, a five-fold increase over 1983 [JAMA 263:2185-2188, 1990]. Niacin sold over-the-counter is not included in these figures.

Selenium and breast cancer. A prospective study of registered nurses has found no relationship between selenium intake during adult life and the risk of developing breast cancer [JAMA 264:1128-1131, 1990]. The study was performed by comparing the selenium content of toenail clippings from 434 nurses who developed breast cancer with those of 434 who did not.

Fluoridation census. The U.S. Centers for Disease Control estimates that as of December 31, 1988, 132 million Americans (53% of the population) were served by fluoridated water.

Chiropractic group opposes fluoridation. In May, the International Chiropractors Association (the nation's second-largest chiropractic group) adopted a policy opposing fluoridation of public water supplies. The group considers fluoridation "possibly harmful and a deprivation of the rights of citizens to be free from unwelcome mass medication." They are also opposed to compulsory immunization.

Hair analysis for drug detection. FDA Compliance Policy Guide 7124.06, issued on May 31, 1990, states that analysis of hair by radioimmunoassay (RIA) for the presence of abused drugs is "an unproven procedure unsupported by the scientific literature or well controlled studies or clinical trials."

BOOK REVIEW

Title: Treating Arthritis: Medicine, Myth and Magic (1989)

Author: Felix Fernandez-Madrid, M.D., Ph.D.

Publisher: Plenum Press, New York

Price: \$22.95, hardcover

Reviewed by: William T. Jarvis, Ph.D.

This much-needed treatise lives up to its billing as the "alternative to quackery." It explains the diseases we know collectively as "arthritis," provides tools to protect against quackery, and explains the principles of modern scientific treatment. Most important, it does a superlative job of explaining why early treatment is important to keep inflammation from doing irreversible damage to the joints.

The author believes that the roots of diet-related arthritis quackery can be traced back 5,000 years to the Egyptian belief that all diseases are attributable to food intake. The book begins with a fascinating imaginary journey through time by an arthritic patient who is treated by the ancient Mesopotamians, East Indians (Ayurvedic medicine), Chinese, Egyptians, primitive shamans, and many other types of healers. Some of what these people did was useful, but most was not. It also demonstrates that there is nothing new under the sun when it comes to self-treatment and quackery. It exposes the faulty rationales for "glandulars," adrenal extracts, Liefcort, DMSO, bee stings, snake venom, and other dubious remedies. And it discredits the notion that rheumatoid arthritis is caused by an infectious organism.

In the remainder of the book, the author describes the symptoms and treatment of a wide range of arthritic disorders. He includes information on nutrition and skeletal health and describes the role of rest and exercise as well as proper medical management.

For a look at arthritis past and present, and how sufferers can face the future, this book is excellent.

Dr. Jarvis is professor of preventive medicine at Loma Linda University and president of the National Council Against Health Fraud, Inc.

Notable quote. "Every newspaper in America has a daily astrology column, with one or two exceptions. Virtually no newspaper in America, as far as I know, has a daily science column. . . . Newspapers continue to publish astrology and sleight science in order to sell more newspapers. If making money is the only object, the situation will continue. But if the health of the country or the satisfaction of the citizens—their ability to understand the world they live in—is what we're after, then we've got a lot more serious science to report in all media; especially daily newspapers."—*Carl Sagan.*

New food safety newsletter. Lilian Langseth, publisher of *Nutrition Research Newsletter*, has launched the *Food Safety Notebook*, a monthly newsletter covering scientific and political news about foods, food chemicals, and food safety. Introductory subscriptions are \$45/year. For further information or a free sample contact her at P.O. Box 700, Palisades, NY 10964.

COSTS OF FOODBORNE DISEASE

Manfred Kroger, Ph.D.

While some people express alarm about hypothetical health problems related to food technology and agricultural practices, the food industry and public health officials are struggling to stem the tide of *real* hazards confronting consumers. Although it is clear that foodborne diseases have caused more fatalities and misery to humans than all the wars ever waged, it is difficult to assess the full health and economic impact of these diseases throughout the world. However, a recent analysis by E. C. D. Todd, an official of Canada's Department of Health and Welfare, delineates in broad strokes the costs in the United States. He estimates that there are 12.6 million cases costing \$8.4 billion annually [Journal of Food Protection 52:595-601, 1989].

Microbiologic diseases represent 84% of these costs, led by salmonellosis (\$4 billion for 2.9 million cases per year) and staphylococcal intoxications (\$1.5 billion). Other costly outbreaks are toxoplasmosis (\$445 million), listeriosis (\$313 million), campylobacteriosis (\$156 million), trichinosis (\$144 million), *Clostridium perfringens* enteritis (\$123 million), and *E. coli* infections including hemorrhagic colitis (\$223 million). Botulism costs \$87 million; but with an average of only 270 cases per year, it is the costliest (\$322,200) per case. These estimates include both medical costs and lost earnings. They would be much worse if the food processing and food service industries were not of such high quality in this country.

These data on foodborne diseases should come in handy for setting priorities for research and regulatory efforts. Despite the concerns they may engender, anyone familiar with foreign travel or the state of food hygiene elsewhere, should realize that things are really quite good at home. Further improvement can come about through technological improvements and better education of food handlers.

Dr. Kroger is professor of food science at The Pennsylvania State University and associate editor of the *Journal of Food Science*.

DUBIOUS TEST DEBUNKED

Researchers at the University of California have demonstrated that provocation and neutralization—the principal diagnostic tests used by “clinical ecologists”—are not valid. The determination was made with a double-blind study of 18 patients, each of whom received three injections of suspected food extracts and nine of normal saline (dilute salt water) over a 3-hour period [New England Journal of Medicine 323:429–433, 1990].

The tests were performed in the offices of seven proponents who had been treating the patients. In unblinded tests, these patients had consistently reported symptoms when exposed to food extracts and no symptoms when given saline injections. But during the experiment, the patients reported as many symptoms after salt water injections as they did after food extract injections, indicating that their symptoms were nothing more than placebo reactions.

“Clinical ecology” is based on the dubious premise that multiple symptoms can be triggered by hypersensitivity to tiny doses of foods and environmental chemicals. The symptoms reported during the experiment included itching of the nose, watery or burning eyes, plugged ears, a feeling of fullness in the ears, ringing ears, dry mouth, scratchy throat, an odd taste in the mouth, tiredness, headache, nausea, dizziness, abdominal discomfort, tingling of the face or scalp, tightness or pressure in the head, disorientation, difficulty breathing, depression, chills, coughing, nervousness, intestinal gas or rumbling, and aching legs.

“Clinical ecologists” also claim that “neutralizing” doses of offending allergens can relieve the patient’s symptoms. However, seven patients who were treated during the experiment had equivalent responses to extracts and saline.

The experimental protocol was developed in consultation with proponents and critics who agreed that it was a fair and appropriate test. Proponent organizations also provided financial support. Despite this, one prominent proponent claimed in an Associated Press interview that incorrect dosages were used. Reprints of the *New England Journal of Medicine* article are available from Don L. Jewett, M.D., Special Studies Unit, Department of Orthopedic Surgery, University of California, San Francisco, CA 94143.

QUESTION BOX

Q. Was Chiquita Banana correct in warning that bananas should “never-never” be refrigerated?

A. Yes! Sustained cold temperatures interfere with certain physiological functions that are vital during post-harvest storage. When kept at room temperature, bananas continue to ripen and eventually will spoil. But spoilage occurs more rapidly if they are refrigerated. In the refrigerator, banana peels become dull and later turn gray (“dead”), then brown/black. Refrigerated bananas remain edible for only a few days before their flesh loses its flavor and texture and turns dark. Also, they are easily damaged by handling or by pressure from packaging materials and may burst along their ridges. Other cold-sensitive foods include green beans and certain types of apples.

CAL-BAN SCUTTLED

State and federal agencies have permanently stopped the sale of *Cal-Ban 3000*. The ingredient in this product is guar gum, which swells to several times its size when exposed to water. *Cal-Ban*’s marketers claimed that their product expanded in the stomach and produced a feeling of fullness that caused people to eat less. However, there is little scientific evidence that guar gum is effective for weight reduction [NF 7:22-23]. In addition, many *Cal-Ban* users have been seriously harmed.

On July 5, postal authorities obtained a temporary injunction prohibiting sales through the mail and by telephone and directing telephone companies to disconnect the company’s toll-free lines.

On July 6, the Hillsborough County Sheriff filed charges of fraud against three company officials. On July 18, the Florida Department of Health and Rehabilitative Services issued an emergency order requiring Florida retailers to remove *Cal-Ban* from their shelves and to stop selling the product immediately. The department said it took this action after reviewing complaints from more than 100 individuals, at least 50 of whom needed some type of medical intervention. The complaints included esophageal obstruction, gastric obstruction, upper and lower intestinal obstruction, nausea, vomiting, headache, and dizziness.

On July 25, the FDA issued a regulatory letter notifying the company that the product was an unapproved new drug and was misbranded and asked that it be recalled immediately. At the same time the agency announced that it had collected reports of at least 17 cases of esophageal obstruction. Hospital stays were required by 10 of these people, one of whom had died.

On July 26, the California Department of Health Services warned consumers not to use *Cal-Ban 3000* and warned retailers not to sell it. California authorities also embargoed shipment and sale of more than 20 million tablets and capsules at a warehouse and manufacturing plant in Anaheim, California.

In August, the Florida civil case was settled with payment of \$1.3 million, and the criminal case was settled with a plea bargain in which the company pled guilty to one count of organized scheme to defraud, paid a \$5,000 fine, and pledged never to sell guar gum or *Cal-Ban* again in the United States. The Postal Service case was settled with a similar consent agreement plus a penalty of \$25,000. In addition, if the three company officials ever promote another weight-loss aid, the promotional material must make it clear that any weight loss will result from increasing exercise and/or consuming fewer calories.

The FDA has indicated that by the end of 1990 it will ban the use of guar gum and more than 100 other ingredients in nonprescription diet aids. Guar gum will remain approved as a food additive for thickening or stabilizing cheeses, salad dressings, and ice cream. When used in a food formulation, it poses no health hazard and is superior to starch or gelatin.

Cal-Ban 3000 had been marketed since 1986. Sale through the mail has been prohibited since 1987, but the company continued to secure orders by telephone, with payment by credit card or COD and delivery by United Parcel Service. Action by Florida authorities or the FDA could have stopped its sale several years ago.

NUTRITION

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DEVIOUS CLAIMS THE ANATOMY OF A MARKETING SCHEME

Ira Milner, R.D.

Enzymatic Therapy, Inc., of Green Bay, Wisconsin, markets "nutritional supplements," "herbal extracts," and "sports nutrition formulas" sold through health food stores. On March 25, 1990, I joined more than 100 retailers and a few chiropractors at a seminar in New Jersey to learn about the company and its products. Before the program began, we were asked to sign a "guarantee" that we were not agents of the FDA, the Better Business Bureau, or any other consumer protection agency and would not tape the seminar for any government agency to use against Enzymatic Therapy. The statement also acknowledged that the sole purpose for attending was to obtain "educational information."

The seminar, which was held at the Radisson Newark Airport Hotel, lasted from 9:00 AM to 6:00 PM, with a break for lunch. Enzymatic Therapy products were displayed and could be ordered at a special 15% discount. Three speakers made presentations:

- Terence J. Lemerond, president of Enzymatic Therapy and three other companies: Biotherapeutics/PhytoPharmica (which markets supplements and botanical extracts to professionals), Bay Natural Foods (a health food store), and the Naturalean Wellness Center (next door to the store). Company publications state that Lemerond has "studied nutrition for 20 years" and was a "nutrition consultant" for 9 years. From 1977 to 1983 he served on the board of governors of the National Health Federation, which lobbies aggressively against government regulation of the health marketplace. His other activities have included a radio talk show and a newspaper column. In the local Yellow Pages, his name is followed by the initials "N.D., B.S., C.N.C."

- Kenneth R. Daub, D.C., a chiropractor from Rockford, Illinois, who was described as "specializing in circulatory and metabolic diseases."

- Michael T. Murray, N.D., who practices naturopathy in Bellevue, Washington, and teaches "therapeutic nutrition" and "botanical medicine" at Bastyr College, a naturopathic school in Seattle.

This report is based on my experience at the seminar plus information from government reports and company documents.

Background History

According to an article distributed by Enzymatic Therapy, Terry Lemerond was inspired to enter the health food business after solving a weight problem with the help of a friend who operated a health food store. In 1969, he acquired his own store (later renamed Bay Natural Foods) and engaged in "nutritional consultation." During the seminar, he described how the company was started in the back room of the store after he concluded it was much better to combine many nutrients into single products for specific conditions. He and his wife incorporated Enzymatic Therapy in January 1981. Later that year, in advertisements in *Natural Foods Merchandiser*, the company announced a "money-back guarantee on an extraordinary new system of nutritional health care!"

"The success of our case histories would astound you," the ads continued, "Enzymatic Therapy is a dynamic new concept in nutritional supplement formulas. They are directed straight at the ailments of our modern age. Created by a nutritional counselor from his highly successful practice, these formulas are the results of experience—not conjecture."

The advertisements listed 11 products: *Acne-Zyme* (to support healthy skin tissue and improve complexion), *Acid-A-Cal* (to improve joint function), *Liv-A-Tox* (to support liver function and detoxification), *Vira-Plex* (strengthens against colds, flu, and infection), *Pro-Gest-Ade* (for digesting protein), *Liga-Plex* (supports weak ligaments, tennis elbow), *Nucleo-Pro F* (for female problems), *Nucleo-Pro M* (for male problems), *Arthro-Flex* ("joint pain, etc., etc."), *Relax-O-Zyme* ("muscle and nerve relaxant"), and *Hypo-Plex* (weight loss, appetite depressant, and control of high or low blood sugar). Each product had a formula number on its label.

A brochure subsequently mailed to retailers stated that "in one and a half years of testing our products through a few selected health food stores, sales exceeded \$10,000 per month per store." The accompanying price list contained more specific claims. *Nucleo-Pro M*, for example, was said to be for "prostatitis, impotence, male hormonal problems, fatigue, and lack of stamina," while *Nucleo-Pro F*, was for "female hormonal problems, impotency, irregular menses, fatigue, menstrual

cramps." The mailing also included "Research Bulletin #105: ACNE," a two-page flyer that listed and discussed the ingredients in *Acne-Zyme No. 105*. The flyer did not mention the product by name but said there was a formula available to meet criteria described in the article. The second page contained disclaimer: "This material is for educational purposes only and is not meant to diagnose or prescribe. Researched by Siri Khalsa, *Nutrition News*, Pomona, CA. . . . Permission to reprint granted to Enzymatic Therapy, Inc."

In 1982, Ms. Khalsa published a book *You Can Do Something About Common Ailments*. Enzymatic Therapy is not identified in the book, but most chapters are almost identical to the "Research Bulletins." The appendix lists the formula numbers and ingredients of Enzymatic Therapy's products, and a footnote states, "If the health food store in your neighborhood cannot accommodate you, please write us and we'll tell you where you can locate the formulas."

At the end of 1984, the company boasted that "No other line of supplements can offer you the service, support, and the profitability that comes from working with Enzymatic Therapy formulas" and promised to supply "unlimited quantities of bag stuffers and promotional material." By that time, it offered about 50 numbered formulas with corresponding "Research Bulletins." Some of these were still attributed to Ms. Khalsa, but most were "researched by the American Society of Nutritional Research" in Phoenix, Arizona.

These flyers, which had four pages, were intended for distribution to customers. The first page of each contained a box in which retailers could print their store's name and address under the message: "For professional health care, shop at. . . ." Retailers also received Enzymatic Therapy's "Professional Price List," which listed "suspected symptoms" for which each of the products were supposedly useful, plus a four-page flyer entitled "Restricted for Professional Use Only" in which detailed therapeutic claims were made for each product.

Nutrition News, edited and published by Ms. Khalsa, appears to be an independent publication that was launched in 1976. Each issue contains four pages and discusses the supposed relationships between nutrients and various health problems. No products are named, but the substances involved are common ingredients in health food store products. The newsletter is available by individual subscription and is sold in bulk to health food stores for free distribution to customers. ("Your customers want to know what your products can do for them," said a recent solicitation, "Each month we publish an attractive, topical newsletter geared specifically to inform them and motivate them to buy those products. . . . Put *Nutrition News* in your store and you put the finest sales money builder money can buy right into your customers' hands.")

A Minor Setback

Under federal law, any product "intended for use in the cure, mitigation, treatment, or prevention of disease" is a drug. If a product is marketed with drug claims that lack FDA approval, the agency can issue a regulatory letter, initiate a seizure, obtain an injunction, and/or seek criminal penalties. The claim need not be on the product label itself. Any claim traceable to the manufacturer is considered part of the label. Thus, the literature distributed by Enzymatic Therapy made its products misbranded and unapproved new drugs.

In May 1985, after an extensive undercover investigation, *Consumer Reports* magazine listed Enzymatic Therapy among more than 40 companies that were violating federal law by making unapproved drug claims for "supplement" products. About 1 year later, the FDA issued a regulatory letter ordering Lemerond to stop using the "Research Bulletins" to make "false and misleading" representations for *Renatone*, *Liv-A-Tox*, *Vira-Plex*, and other Enzymatic Therapy products. The FTC also communicated with the company but took no formal action.

In 1986, Enzymatic Therapy launched *Nicorest*, an alleged "smoking deterrent tablet," composed of vitamins and herbs, whose name was similar to Merrill Dow's *Nicorette* (a nicotine chewing gum). After Merrill Dow learned of the similarity, *Nicorest* was changed to *Nico-Tabs*.

But the Beat Goes On

After receiving the regulatory letter, Enzymatic Therapy stopped using the Research Bulletins but continued to make illegal claims for its products through seminars and various publications.

The heart of its communication system to customers is a series of 45 brightly colored "Health Guides." These, according to a company flyer, "explain how our specific nutritional and herbal formulas support and enhance a full range of body functions. . . . Once your patrons realize the many health benefits of proper nutrition, you will have loyal customers for life." Most of the guides describe the ingredients in various formulas, the products that contain them, and the body organs or functions they can "support." For example, Guide No. 12, "A Comprehensive Guide to Healthy Kidneys," touts *Renatone No. 184* ("to aid the kidney in its vital roles") and *Arbutin Complex No. 802A* ("diuretic and urinary tract antiseptic"), and *K Com No. 808* ("a general tonic for the urinary system").

Health Guides can be obtained from Lem's Contract Printing in Green Bay by mail or by calling a toll-free number. Retailers can order up to 1,200 per month per store and have been encouraged to display them in a special 48-pocket rack that, until recently, was sold by Enzymatic Therapy. At the seminar, Lemerond said that 500,000 to 750,000 of the guides

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have been distributed each month and that they were used in his Green Bay store. In November 1990, John H. Renner, M.D., a board member of the National Council Against Health Fraud, visited the store and observed a clerk giving inappropriate advice to two customers.

In 1986, Enzymatic Therapy began publishing *Formula for Health*, an 8-page newsletter for retailers, which now is issued monthly. Recently, to boost its monthly specials, the newsletter has been accompanied by reproducible 1-page inserts that contain a box for the retailer's business card. The first three specials have been products "for a healthy immune system," "for healthy digestion," and "to help you breathe easy." Enzymatic Therapy guarantees that if a customer returns a product for any reason, it will replace it free of charge or credit the retailers account. It also offers retailers a full refund on any product returned within 1 year in resalable condition.

In January 1989, Enzymatic Therapy began publishing *Health Counselor*, a magazine "designed to help educate your customers on the value of health, and ways to support the body by using nutritional and herbal formulas." Single copies are distributed free-of-charge, but retailers are encouraged to buy multiple copies for distribution or sale to their customers. The magazine contains articles boosting herbal remedies and ads for Enzymatic Therapy products. Many ads contain illegal therapeutic claims. In the first issue, for example, on a page marked "advertisement," several formulas were claimed to "support the heart and entire cardiovascular system" and to be "particularly useful for individuals with atherosclerosis (hardening of the arteries)." In the May/June 1990 issue, an advertisement states that "Liv-A-Tox No. 125 is a unique combination of nutrients, herbs, and glandular concentrates to support liver functions for a healthy flow of fats and bile."

Lemerond also operates Biotherapeutics/Phyto-Pharmica, which markets nutritional supplements and herbal extracts through chiropractors and other health professionals. Its 1990 catalog lists about 80 products, including *Hepatox* ("to support the liver"), *Cardioplex* ("support for the heart and cardiovascular system"), *Glucoril* ("to deeply revitalize the pancreas"), and *Vision Tone* ("to support eye function").

In addition to expanding its product lines, Enzymatic Therapy has been expanding its operating space. It moved to larger quarters in 1987 and has just built a 30,000-square-foot facility.

The Seminar

For several years, Enzymatic Therapy has invited retailers to attend free "nutritional seminar and sales training" sessions. About 20 were scheduled during 1990.

During the seminars, Lemerond shows slides of the products and describes how to use them for specific health

problems. "Our products are specifically designed to nutritionally aid and support the various systems and the functions of the body," he said at the seminar I attended. "The goal of Enzymatic Therapy is to provide you and your customers with the finest nutritional formulas of the highest quality, backed by sound scientific research."

"I think we provide some of the best literature in the industry," Lemerond continued, "it is a tremendous sales tool. It's like having another person in the store selling for you without having to pay that person." He then described how one retailer who bought between \$600 and \$1,000 of product a month told him he had "never sold" an Enzymatic Therapy product—he just puts the rack in the center of the store and lets people take the literature and sell themselves.

Samples of the guides were distributed at the seminar. According to Lemerond, seminar participants have experienced an 80% increase in their sales of Enzymatic Therapy products.

As he talked about the products, Lemerond related many anecdotes. The most memorable was about a California woman who took *Hair and Nutrition #180*, which provides "nutritional support for healthy skin and hair" and "definitely affects the growth of hair." Lemerond said that the woman "could never grow long hair," but soon after taking the product, she grew "somewhere around 6 inches of hair." Several seminar participants sitting near me wondered aloud whether Lemerond—who is balding—had ever used it.

The Murray Connection

Michael Murray, N.D., a 1985 graduate of Bastyr College, is a consultant to Enzymatic Therapy and has been closely allied with Lemerond for several years. At the seminar, Lemerond described Murray as "one of the finest scientists in the United States in the nutritional field" and said he had formulated or reformulated many Enzymatic Therapy products. Enzymatic Therapy, which undoubtedly views naturopathy as a marketing channel for its products, has donated at least \$15,000 to Bastyr College.

Murray is a prolific writer. He wrote *The 21st Century Herbal* ("a layman's guide to botanical extracts") and is co-author of the *Encyclopedia of Natural Medicine* (a reference guide for patients) and *A Textbook of Natural Medicine* (a massive collection of information about naturopathic methods). He also edits *Phyto-Pharmica Review* (a newsletter related to the herbal products marketed by Lemerond's professional division), and *The Health Series* (booklets about herbs and common ailments written for laypersons).

Murray also is doing business as president of Vital Communications, of Bellevue, Washington. Near the end of 1989, Vital Communications took over as "sponsor" of the seminars and publisher of both *Health Counselor* and *Phyto-*

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Pharmica Review. In a letter to retailers early in 1990, Murray stated, "Your customers need help in selecting natural products they use to treat themselves, which is their constitutional right. Can you realize how little time you have to help each and every customer who comes into your store, as well as the legal implications involved with trying to be too helpful? *Health Counselor* magazine will solve those problems for you. . . . With just six issues of this bimonthly magazine in publication, *Health Counselor* already has a circulation of 105,000 per issue."

Enzymatic Therapy appears to be using Murray as a "front"—to create an illusion of distance between the company and many of its claims. Bulk orders for *Health Counselor* are still placed through Lem's Contract Printing (which also ships the Health Guides), with order forms variously addressed to Lem's or Vital Communications Post Office Box 1332 in Green Bay.

The Health Series also is being used to promote Enzymatic Therapy products. A recent mailing to health food stores contained Murray's booklet on irritable bowel syndrome (IBS), an Enzymatic Therapy flyer for products whose ingredients are discussed in the booklet, and a cover letter in which Murray tells how he prescribes one of the products to patients and suggests that the booklet can help customers "understand how to handle IBS naturally." The mailing was sent from Post Office Box 1332 under bulk mailing permit #436, which Enzymatic Therapy has used for years to mail its catalogs and other publications.

At the seminar I attended, Murray discussed herbs and various symptoms and conditions for which he said specific Enzymatic Therapy products should be recommended. Participants also were given *The Professional Guide to Nutritional and Herbal Formulas*, a 158-page looseleaf manual "published and distributed by Vital Communications, Dr. Michael Murray, N.D." which describes Enzymatic Therapy products and more than 80 diseases and conditions they supposedly can help. In addition, the manual contains "protocols" for using various products against AIDS, multiple sclerosis, cancer, arthritis, and other serious health problems.

The Daub Connection

The third speaker at the seminar was Kenneth Daub, D.C., clinic director of Vascular Associates International Corp., in Rockville, Illinois. His topic, "The Management of Arterial Disease," was a rambling account of his views on atherosclerosis and some of the patients he has treated.

Daub is the developer of *MVP*, a supplement program he says was adapted from the work of Hans Neiper, a German physician. At the seminar, Daub distributed a booklet entitled "Owners Manual for a Healthy Circulatory System," which claims that *MVP* can "help the body nutritionally cleanse itself of the life-threatening plaque in the arteries." Daub also encouraged attendees to request his videotape, which makes similar claims and contains testimonials from people who say his product was effective against high blood pressure, obesity, numbness of the hand and leg, chest pain, fatigue, and lack of energy. The tape, which he sells for \$20, appears intended to interest people in marketing the product as well as using it. At one point, the narrator even refers to "a lifetime of financial freedom," words multilevel companies typically use to attract distributors.

A note accompanying the videotape states that it was made in 1985 when Daub's program was called *VMP*, which stood for Vascular Maintenance and Prevention. "Our friends in the FDA didn't like that name so they made us change it," the note said. "It would have been too costly to re-make the videotape, therefore when *VMP* is mentioned. . . . you'll know why it has been changed to *MVP*."

Actually, the FDA objected to a bit more than the product's name. The regulatory letter Daub received in June 1987 ordered him to stop stating or suggesting that *VMP* was useful against occlusive vascular disease, strokes, heart attacks, elevated cholesterol levels, high blood pressure, arthritis, and other forms of inflammation, eczema, hyperactivity in children, and "problems from alcoholism to obesity to cancer."

At that time, Daub was marketing his program through a company called Total Concept in Health Corporation. Currently, the exclusive distributor is Enzymatic Therapy. The slogan "Don't be bypassed, use *MVP*," appears in both the company's brochure and on refrigerator magnets distributed at the meeting.

The PR Connection

Enzymatic Therapy also uses S & S Public Relations, Inc., of Northbrook, Illinois, a public relations firm that issues news releases and arranges interviews with Lemerond. Like the Health Guides, the releases make claims for the products that would be illegal on product labels.

In January 1990, when Lemerond opened his Naturelean Wellness Center, S & S announced that it was directed by a medical doctor and offered "diet counseling, exercise, toning, EKGs nutritional analysis, massage therapy, rolfing, lean body analysis and other programs."

The Bottom Line

According to federal law, drugs must be proven safe and effective for their intended purpose before they are marketed, and their labels must contain adequate directions for use. When this information is not printed on the label or a package insert, the intended purpose can be determined by examining other evidence. Enzymatic Therapy's products are obviously being marketed for the treatment of disease.

Rather than seek FDA approval, Lemerond and his associates have been using subterfuge to "distance" illegal claims from their product labels. The fact that this effort has prospered is not the result of its cleverness but of FDA sluggishness. As should be obvious from this report, evidence of wrongdoing is not difficult to obtain.

At the National Health Fraud Conference held a few months ago in Kansas City, a high-ranking FDA enforcement official announced plans for greater use of criminal prosecution in health fraud cases. Lemerond has been flaunting the law for years and deserves nothing less.

BRIEFS

Postal Service attacks mail-order company. On November 7, United States Postal officials filed a false representation complaint against Nature's Bounty, Inc., of Bohemia, New York (doing business as Puritan's Pride). The complaint charges that at least 19 of the company's nutritional products were falsely advertised in Puritan Pride mail-order catalogs. The products include *Cholesto-Flush*, *Fatbuster Diet Tea*, *Kidney Flush*, *Memory Booster Prostex*, and *Stress B with 500 mg Vitamin C*. In 1985, General Nutrition Corporation signed consent agreements with the Postal Service to stop making unsubstantiated claims for 14 products sold through the mail. In 1989, Nature's Bounty purchased GNC's mail-order division for approximately \$7 million. The transaction included the right to use the Puritan's Pride trademark.

Adverse food reaction protocols. Free reprints of "Workshop on Experimental Methodology for Clinical Studies of Adverse Reactions to Foods and Food Additives" are available from Karen A. Taylor, International Life Sciences Institute, 1126 16th St., N.W., Washington, DC 20036.

New diet brochure. The FTC has issued an excellent 2-page flyer to help consumers evaluate weight-loss programs. Free copies of "Diet Programs" can be obtained from the Public Reference Branch, Room 130, Federal Trade Commission, 6th and Pennsylvania Ave., N.W., Washington, DC 20580.

Newsletter expands. *Obesity and Health*, which covers news and research related to weight control, has expanded into a bimonthly journal format. The introductory rates are \$49 for one year and \$89 for two years from Healthy Living Institute, 402 S. 14th St., Hettinger, ND 58639.

FDA pesticide report. The FDA's annual pesticide residue study again has found that 65% of domestically grown foods showed no pesticide residue and 34% had residues well within the limits set by the Environmental Protection Agency (EPA). The agency's annual Total Diet Study found that dietary intakes of pesticides for all population groups were well within international and EPA standards. Copies of the report, "Residues in Food—1989" are available from Norma Yess, FDA, HFF-420, 200 C St., S.W., Washington, DC 20204.

Silver fillings under attack. Irresponsible press reports suggesting that mercury-amalgam fillings are toxic have been increasing as a result of experiments conducted on sheep by researchers at the University of Calgary, Canada. On October 15, *Newsweek* reported the study and said that "no one has really looked" for evidence tying any disease to mercury from silver fillings. The article was coauthored by Sharon Begley, who wrote the scurrilous anti-fluoridation article *Newsweek* published in February [NF 7:15, 1990]. An FDA dental official has termed the sheep studies "very, very flawed" and irrelevant to what happens in humans. The American Dental Association states that adverse reactions to amalgam fillings are extremely rare. Although billions of fillings have been used successfully, fewer than 50 cases of allergy have been reported.

Report on unconventional cancer treatment. The United States Office of Technology Assessment has issued *Unconventional Cancer Treatments*, a thoroughly researched 312-page book containing a wealth of previously unpublished information. Copies (GPO stock #052-003-01207-3) are \$14 each from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. A 32-page summary report (#052-003-01208-1) costs \$1.75.

Homeopath stopped. The North Carolina Supreme Court has reversed two lower court decisions and ruled that the state board of medical examiners may ban physicians from using homeopathy. In 1985, the board voted to suspend the license of George Guess, M.D., because he refused to stop practicing homeopathy. Dr. Guess has announced plans for a federal court appeal.

In case you didn't know. Life Chiropractic College is offering a bachelor of science program in nutrition, which includes courses in basic sciences, food preparation, and clinical nutrition from a chiropractic viewpoint [Today's Chiropractic, October 1990]. The program also includes special projects in which the students "come to grips with the real world and the role nutrition plays in people's lives." Some students work in a soup kitchen to "appreciate the nutritional problems of the poor and homeless." Others work in an organic garden to gain "firsthand experience at growing pesticide-free, natural foods." According to a faculty member, "Chiropractic, through the specific [spinal] adjustment, can release nerve interference to help make the transportation of nutrients easier and improve the body's ability to absorb them. . . . Proper eating also affects the way patients think, how they feel, and the body's ability to hold an adjustment." The program is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools, but is not approved by the American Dietetic Association to prepare students to become registered dietitians.

CANAH may fold. The Coalition for Alternatives in Nutrition and Healthcare (CANAH) may cease operations for lack of funding. According to an article in *Health Foods Business*, Catherine Frompovich, CANAH's founder and president, announced this together with her resignation at a regional health food industry convention. The group (mostly Frompovich herself) lobbied aggressively against fluoridation, food irradiation, and nutritionist licensing.

Oreo boycott. STAT (Stop Teenage Addiction to Tobacco) is mounting a boycott of Oreo cookies, Ritz crackers and other products marketed by RJR Nabisco. STAT believes that the company "is conducting a massive advertising and promotion campaign to encourage children and adolescents to become addicted to cigarettes. Many of RJR Nabisco's advertisements that target young people violate even the tobacco industry's own code of advertising ethics." Product lists and other information are available from STAT, 212 Lyman Street, Suite 210, Springfield, MA 01103. [Editor's note: I urge all food service personnel to join STAT's worthwhile effort!]

Raw milk verdict upheld. The California Court of Appeals has reinstated a verdict against the country's largest raw milk producer/distributor. In 1987, a jury awarded \$40,000 to the family of Paul B. Telford, finding that his death resulted from drinking Alta-Dena Certified Raw Milk. But the trial judge overturned the jury's verdict on grounds of "insufficient evidence." Although raw milk cannot be marketed across state lines, it is still produced and sold within California under the name "Stueve's Natural." The Alta-Dena name and pasteurized product line were sold by the Stueve family to a French company, so all "Alta-Dena" products are now pasteurized.

Depression and weight change. Albert J. Stunkard, M.D., and colleagues at the University of Pennsylvania have found that the direction of weight change tends to remain stable from one episode of severe depression to another. Among 53 patients undergoing two such episodes, 23 lost weight during both, 17 gained weight during both, and 5 showed no change. No relationship was found between the severity of the depression and the amount of weight gained or lost [Archives of General Psychiatry 47:857-860, 1990].

Dale Alexander dies. Dale Alexander, author of *Arthritis and Common Sense* and four similarly titled books about good health,

the common cold, healthy hair, and dry skin, died in June at the age of 70. His arthritis book advocated taking cod liver oil, mixed with orange juice, to "lubricate the tissues surrounding the joints." The first edition was published in 1951 and sold more than a million copies. A second edition was published in 1984.

FDA attacks food claims. The FDA has sent regulatory letters to six food companies, warning them to stop making health claims that are not backed by scientific evidence. Ralston Purina was ordered to stop claiming that eating *Oat Chex*, "may help reduce cholesterol levels." The letter to Ralston said that even if scientific evidence eventually supports a link between eating oat bran and reducing coronary heart disease risk, *Oat Chex* contains insufficient fiber to support its health claim. The other letters concerned *Toasted Oat Bran Shake* (J&J Snack Foods Corp.), *Rice Bran Oil* (Select Origins, Inc.), *Oatmeal Goodness Bread Wheat Oatmeal* (Continental Baking Co.), *Vita Fiber Rice Bran* (Pacific Rice Products, Inc.), and *Oat Bran Fruit Jumbo Cookies* (Health Valley Foods, Inc.).

Defunct magazines. Three magazines that promoted dubious health concepts have stopped publication: *Bestways*, *Medical Self-Care*, and Jeffrey Bland's *Medical Nutrition* (originally *Complementary Medicine*).

BOOK REVIEW

Title: Health Schemes, Scams, and Frauds (1990)

Authors: Stephen Barrett, M.D., and the editors of Consumer Reports Books

Publisher: Consumer Reports Books, New York

Price: \$13.95 softcover

Reviewed by: James Harvey Young, Ph.D.

Quackery has been a concern of Consumers Union for the more than the half century of its existence. In 1980 it compiled articles from *Consumer Reports* plus additional information on health deceptions into a most useful book. But, sadly, pseudoscience does not stand still. A decade later, the book required updating.

To manage this task, CU selected *Nutrition Forum's* editor, Stephen Barrett, M.D. *Forum* readers are well aware of his dedication to exposing falsehood and fraud and of his imaginative methods of undercover investigation. His information bank has contributed greatly to the crisply written pages of CU's revamped classic.

The book's 14 chapters flow from a historical overview through present problems and what our society should do about them. The allure and hazards of quackery are fully described, as are a wide range of dubious therapies for cancer, arthritis, and AIDS. The tactics used to sell unnecessary vitamins and worthless (usually illegally marketed) nutrient concoctions are revealed in detail. Fringe medical practices, including fanciful diagnoses of "hypoglycemia," "candidiasis hypersensitivity," and "total allergy syndrome," get their critical due. Orthomolecular therapy, chelation therapy and homeopathy are keenly analyzed. The scam is described in which dentists persuade patients to have their mercury-amalgam fillings replaced to ward off "mercury poisoning." Chiropractic, in its current setting, is

carefully examined, leading to the same judgment as in the book's first edition: "not recommended." A glossary of questionable methods and a detailed index round out the book.

The new edition urges regulatory agencies to increase the vigor and rigor of their enforcement endeavors with respect to deceitful and dangerous wares. In particular, the Food and Drug Administration is besought to resume an almost abandoned weapon: criminal prosecution of the quacks. CU believes, as do I, that the ripple effect of heavy fines and imprisonment could have significant deterrent impact.

The Dread Disease, James Patterson's study of popular American attitudes toward cancer, describes a century-long entrenched cancer counterculture which remains skeptical of scientific medicine. Its constituents include not only the ill-informed and the poor but members of the middle and upper classes whose decision-making abilities have become clouded with fear. In other fields as well as cancer, this counterculture provides fertile soil for the clever proselytizing of the quack.

Quackery has deep roots. Centuries ago, Phaedrus said: "Vulgus vult decipi" (the average person wants to be deceived). Centuries from now, observers may still echo this sentiment. Quackery may not be conquerable, but it deserves to be constantly attacked. *Health Schemes, Scams, and Frauds* is an important weapon for this purpose.

Dr. Young, who is emeritus professor of history at Emory University, is a social historian with special interest in the development of food and drug regulation in America. His books, *The Toadstool Millionaires* and *The Medical Messiahs*, trace the history of quackery in America and efforts to control it. *Health Schemes, Scams, and Frauds* is available for \$13.95 postpaid from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

A VISIT TO NATURAL FOODS EXPO

Norra Tannenhaus

Practitioners of "alternative" health methods love to announce breakthroughs and miracle cures. However, if my visit to the March 1990 Natural Foods Expo West in Anaheim, California, was any indication, their products and interests have not changed very much during the past few years. Hypoglycemia, organic foods, enemas, mercury in dental fillings, alleged immune system hazards and boosters, and the dastardly deeds of "allopathic" physicians continue to preoccupy the industry. Many of the exhibitors served a turgid stew of half-truths, doctor-bashing, and back-to-nature fantasies.

"Them-versus-Us"

Natural Foods Expos are held twice a year, once on each coast, sponsored by New Hope Communications, publisher of *Natural Foods Merchandiser* (a trade magazine) and *Delicious!* (a consumer magazine) and *Organic Times*. In May, *Natural Foods Merchandiser* described the meeting as "a winning show," with about 12,000 visitors, 826 exhibit booths filled by 657 manufacturers, and 65 educational seminars. To me, however, the meeting's most striking feature was pervasive criticism of the medical profession. This approach was most apparent in the literature distributed, but I encountered it at exhibits and in seminars as well.

The most dangerous provider of advice was probably the Cancer Control Society, which distributed information in envelopes marked "ALTERNATIVE CANCER THERAPIES—NUTRITIONAL APPROACH—ALSO HELP FOR ARTHRITIS, DIABETES, MS, AND HEART DISEASE" in bright red letters. These packets included lists of "nutrition-minded doctors in the Los Angeles area," clinics providing "non-toxic therapies," and people offering testimonials for laetrile, Hoxsey therapy, natural foods, and other "alternative" methods. The society also sponsors \$75 bus tours of Tijuana clinics that offer treatment for cancer, arthritis, multiple sclerosis, and other "degenerative" diseases. A flyer states that for \$10 extra, nurses taking the tour earn 10 hours of continuing education credit recognized by the California Board of Registered Nursing.

Marketing Techniques

Another striking feature was the sophistication of the marketing techniques employed. Most of the stores and manufacturers avoided illegal claims themselves on their product labels, but almost invariably, literature extolling a product's virtues was available nearby. Twinlab, for example, displayed *Twinfast*, an 80-calorie meal offered in a large, inviting exhibit, as a "very-low-calorie weight-loss formula." Next to it were stacks of a book called *Prevent Cancer Now: Your Guide to Self-Protection*, by Michael Colgan. Two of its chapters were entitled "Low Calories Prevent Cancer" and "Overweight Causes Cancer."

Another company that has developed some savvy marketing techniques—probably because of past run-ins with the law—is Michael's Naturopathic Programs. According to a representative at the booth, retailers can suggest that their customers try what has worked for others in the past, but "We don't want to get into prescribing." Nevertheless, the company offers in-store teaching by a "Wholistic Lifestyle Consultant whose training includes Iridology and Reflexology," to coach retailers in topics such as "How each of Michael's programs work in the body" and "How to insure health improvement and create loyal customers." The brochure for a product called "Instant Energy" contained this message:

"For some consumers the desired effects may require a little additional time before being completely felt. This obviously is due either to slower metabolic rates in their bodies, to some kind of dietary hindrance, to a particular medicine they may be on, to a specific physiological dysfunction, or even to the time in which such product was consumed. The ages, sexual genders, and weights of consumers for whom the product does not work well also needs to be considered." In other words, it's your fault if it doesn't work.

Other manufacturers were less polished. PC Teas Co. promoted a vile-tasting tea called Lin Chi Toucha, a combination of ginseng and two other herbs. Said marketing manager Sunny Wong, "Eat anything you like, drink this tea after each meal, and it will lower your cholesterol by 20% after 1 month."

At Least the Food was Good

The exhibits promoted everything from blood builders to maple sugar candy. In fact, the industry seems to have made its greatest strides in food. Amidst the tofu and organic vegetables, I found a delicious candy bar called the President's Lunch because Ronald Reagan had once sampled it. The ingredients: oats, sunflower seeds, bee pollen, kelp, lecithin, honey, raisins, and peanut butter. There was also a First Lady's Lunch, with almonds and dates replacing the raisins and peanut butter. Tofu burgers also seem to have come a long way, if the ones I tried were representative. More than a hundred food companies had exhibits.

Seminars

Herbs and their properties are among the most enduring preoccupations of natural foods proponents. In a seminar on reducing stress, a panel of herbalists suggested that audience members do something "natural," like watching a sunset or hugging a tree. "To be whole against stress, you have to be whole in your life," one speaker warned. According to another, herbs function as "nervines" and "adaptogens." In the right combinations, these substances supposedly relax body and mind. Ginseng, a perennial favorite, seems to be maintaining its popularity. At yet another seminar, echinacea and astragalus

were described as "superstars" for strengthening the immune system.

Other advice was less innocuous, however. One speaker, Ed Alstat, N.D., R.P.H. (introduced as "Dr." Ed Alstat) instructed his listeners—many of whom appeared to be owners or employees of health food stores—on how to make differential diagnoses and tailor remedies to each customer. While noting that patients/customers (he used the terms interchangeably) should sometimes go to a physician or an emergency room, Alstat explained how to check hair for signs of thyroid deficiency and nails for possible "mineral imbalance." He also suggested examining customers' eyes and teeth for signs of "neural breakdown" and offering toothpaste, dental floss, and B₁₂ supplements as remedies. Members of the audience asked many questions and seemed genuinely interested in trying to help customers with a wide variety of health problems.

Shoddy treatment by doctors and the press were the subjects of another seminar entitled "Natural Foods and the Media." Gardiner Harris, editor of Jeffrey Bland's now-defunct magazine *Medical Nutrition*, declared that the use of supplements to prevent birth defects was a discovery more important than the Salk polio vaccine. He characterized the objections of "traditional" scientists as "silly," but didn't elaborate. [*Editor's note*: High levels of vitamin A supplementation during pregnancy can cause birth defects. RDA-level supplementation begun prior to conception is probably harmless. However, it has not been proven that, in women who are eating a nutritious diet, it is likely to benefit the developing fetus.] After expressing admiration for Bland and Adelle Davis, Harris alleged that one outspoken critic of the health food industry had been shown, on at least three occasions, to have falsified data to support his contention that supplements were harmful.

At the "Annual Industry Trends Update," a GNC executive said that during the next 5 years, his company planned to open 100 new stores per year and focus on such categories as weight loss, sports nutrition, fitness equipment, and workout apparel. The bulk of its advertising dollars will be used to

sponsor such events as marathons, nationally televised "Ms. Fitness America" competitions, and bodybuilding exhibitions, fashion shows, and bench press competitions in shopping malls. Other panelists suggested that increased public concern about the environment could be used by the health food industry to persuade people to improve their "internal environment."

Dubious Literature

Pamphlets, newspapers, brochures, and magazines reflected the general tone of the exposition. For example, the October/November issue of *Body and Soul*, a newspaper intended for distribution through health food stores, carried an article about colon-rectal cancer that recommended colonics because ordinary enemas are not enough. The author suggested that readers who could not find someone to administer the colonic should go to a health food store and read about colon cleansing (presumably to do it themselves). The procedure is necessary, the article said, because "it is important to keep your colon free of 'crusting, gooey, gluey material.'" Other articles in this and other issues touted chelation therapy for atherosclerosis and called *Ginkgo byloba* the "biggest buzzword in herbal products today."

Overall: Out of Step

Although the health food industry has become very sophisticated about marketing, it promotes many theories and practices that were discredited long ago. Thus, while medical science is advancing steadily, the "alternative health industry" seems to be standing still.

Ms. Tannenhaus, a freelance writer based in Los Angeles, is author of *Preconceptions: What You Can Do to Help Yourself Have A Healthy Baby* [Contemporary Books, 1988].

FTC BLASTS "STRESS VITAMIN" ADS

The Federal Trade Commission has secured a consent agreement forbidding Miles Inc., of Elkhart, Indiana, from making unsubstantiated claims for its One-A-Day brand multiple vitamins. According to the FTC Complaint, Miles' ads on radio and television had stated:

- "Strenuous exercise can actually knock essential minerals right out of your system. But One-A-Day vitamins are uniquely formulated to help put back what your world takes away."

- "The stress of daily living can take a lot out of you. . . . Your B vitamins, for example, are being chipped away by everyday problems and pressures. But One-A-Day puts them back. One-A-Day vitamins are uniquely formulated to put back what your stressful world takes away."

- Defending your lungs against air pollution requires vitamins A, E, and C. Daily stress can chip away at your B vitamins. And rigorous physical training can actually knock essential minerals right out of your system. That's why One-

A-Day vitamins are uniquely formulated to help put back what your world takes away. So eat a balanced diet and take One-A-Day, every day."

- The consent agreement forbids Miles to represent, directly or by implication, that any vitamin or mineral supplement:

- Affords any protection or benefit to human lungs.
- Is necessary or beneficial in replacing any vitamin and/or mineral lost through physical exercise.
- Is necessary or beneficial in replacing any vitamins and/or minerals lost as a result of, or provides any benefit with regard to, the stress of daily living.

Miles also is barred from making any other unsubstantiated claim for any of its products. After the Commission issues a final order, any violation can trigger a civil penalty of up to \$10,000 per day. This case is highly significant because it involves a large corporation and is the first federal case to strike at the heart of fraudulent "stress vitamin" claims.

Forum

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THE LEGACIES OF EDGAR CAYCE

Jack Raso, M.S., R.D.

Edgar Cayce (1877–1945), dubbed the “Sleeping Prophet” by biographer Jess Stearn, was born in Christian County, Kentucky. He was a precursor of “New Age” trance channeling, giving well over 14,000 “psychic readings” between 1910 and his death. A poorly educated photographer and Sunday school teacher with no medical training whatsoever, Cayce gained nationwide renown for diagnosing illnesses and prescribing dietary remedies while in a self-induced hypnotic state. His current promoters claim:

He could see into the future and the past . . . describe present far-off events as they were happening; and . . . astound doctors with his x-ray vision of the human body. His readings—his words while in this state—were carefully transcribed while they were spoken. He is undoubtedly the most documented psychic who ever lived. And the accuracy of his predictions has been put at well over 90%! At his death, he left a legacy of thousands of case histories that science is still at a loss to explain completely.

Cayce reportedly preferred the appellation “psychic diagnostician” to “healer.” His “revelations” were allegedly derived from our “collective consciousness” rather than from particular spirits.

The *New Age Encyclopedia* states that Cayce’s career as a clairvoyant was launched at age 23 after a hypnotic session in which he diagnosed and prescribed a cure for his own persistent case of laryngitis. As news of the healing spread, people sought his help. Cayce would enter a trance and offer guidance to someone present or who had mailed a request for service. His “readings” answered questions about health conditions, astrology, and supposed previous incarnations. In *The Outer Limits of Edgar Cayce’s Power* (1971), Cayce’s sons stated that the readings comprise over 50,000 single-spaced typewritten pages and more than 10 million words. The Edgar Cayce Foundation was formed to preserve them.

In *Edgar Cayce on Diet and Health* (1969), Hugh Lynn Cayce (1907–1982) wrote of his father:

At the age of six or seven he told his parents that he was able to see and talk to “visions,” sometimes of relatives who had recently died. His parents attrib-

uted this to the overactive imagination of a lonely child who had been influenced by the dramatic language of the revival meetings which were popular in that section of the country.

Cayce’s health-related pronouncements also may have reflected his early association with Wesley Ketchum, a homeopathic physician. As for his predictions, the failure of Atlantis to resurface in the late 1960s is but one of a score of not-so-near misses. In 1941, Cayce predicted that land would appear in both the Atlantic and the Pacific within a few years, that most of New York City would disappear within another generation, and that the southern portions of Carolina and Georgia would disappear even sooner.

A.R.E.’s Enterprises

In 1931, Hugh Lynn Cayce helped found the Association for Research and Enlightenment (A.R.E.). In 1976, he became board chairman while its presidency was assumed by his son Charles Thomas Cayce, Ph.D., whose degree is in child psychology.

A.R.E. functions as an eclectic “New Age” nerve center, from which emanates a steady flow of seminars and publications. Its headquarters, a modern three-story building in Virginia Beach, Virginia, contains a visitor/conference center, a library, and the A.R.E. Bookstore. Its 1988 gross income was \$7.8 million, including \$2.2 million for membership dues and \$2.4 million for educational materials.

A.R.E. membership costs \$30 per year, but 9-month “introductory memberships” cost \$15 or \$20. Members receive the bimonthly magazine *Venture Inward*; may borrow books from the A.R.E. Library, join a study group, and attend or send their children to A.R.E.’s summer camp in the Appalachian foothills; and are entitled to discounts on A.R.E. conferences and referrals to over 400 practitioners who use the Cayce approach. Members also are invited to participate in “home research projects,” in which they carry out some psychic activity and report the results. The study groups concern themselves with such things as diet, the laws of reincarnation (“karma”), metaphysical dream interpretation, and the spiritual legacies of ancient Egypt and Atlantis.

A.R.E. mailings to prospective members state: "There is no human problem for which the Cayce predictions do not offer hope." A.R.E. "research reports" based on Cayce readings are available on 15 health-related topics ranging from scarremoval, moles, and warts to arthritis, diabetes, and multiple sclerosis.

Many of Cayce's remedies are sold through the mail by Home Health Products, Inc., which specializes in "natural products for a holistic approach to health care." Its own products include skin conditioners, laxatives, and a few supplements, but its catalog also includes supplements made by other companies. These include *Cata-Rx* ("a safe nonprescription formula that counteracts nutritional deficiencies associated with age-related cataracts"); *Prostate Plus* (suggested as an alternative to surgery); *Livcleanse* ("help for toxic overload"); *Kidney Flush* (to "help flush away urinary infections"); *Thyro-Vital* (to improve thyroid function); and *His Ease* (to increase sexual virility). According to the company's brochure, "In addition to changes in diet, Edgar Cayce frequently recommended specific remedies and treatments. Many of these had to be custom-formulated from herbs, oils, and other naturally occurring substances."

The A.R.E. Bookstore, which also sells by mail, features many books by or about Cayce, including the 24-volume "library series" of excerpts from his readings (usual price \$395). It also carries a large selection of books and tapes on psychic and metaphysical topics, including dream interpretation, reincarnation, tarot, I Ching, and pyramid power. Its health-related books deal mainly with dubious nutritional methods and other unscientific approaches. One book—*Third Opinion*, by John Fink—is a directory of "alternative" cancer centers.

Another item sold by the bookstore is the *Physician's Reference Notebook*, by William A. McGarey, M.D., and several colleagues, which contains commentaries on over 50 ailments. Several years ago, an A.R.E. mailing to chiropractors stated:

This book is a "magic tool" to be used in conjunction with your professional skill and knowledge in healing some of your more difficult cases. One of our colleagues, using the information in our commentaries, has cured dozens of psoriasis cases. . . . Even some of the neurological degenerative conditions, such as M.S., A.L.S., or even . . . (foot drop), have responded exceptionally well to these recommendations.

The A. R. E. Clinic

In 1970, William McGarey and his physician-wife Gladys founded the A.R.E. Clinic in Phoenix, Arizona. According to an article in *Medical World News*, they opened this facility to offer "comprehensive care to patients seeking holistic medical alternatives." In an interview in *Health Talks* (1989), McGarey said that the clinic had a staff of 45 or 50 persons, including five physicians (one an osteopath), a chiropractor, and a psychologist with a doctoral degree.

In the book, he denies any conflict or contradiction between his Cayce-based practices and his medical education. "The philosophy behind the A.R.E. clinic," he says, "is that everyone is a whole human being . . . created in the image of God." According to McGarey, the clinic consists of a general practice, a "brain injury center," and an "energy medicine

center that looks at the biomagnetic energies of the body." Among other things, the clinic offers "electromagnetic field therapy," "relaxation training," and "the laying on of hands." The clinic also offers the Temple Beautiful Program, a 11-day "rejuvenation program" that includes dream analysis, stress reduction, visualization, biofeedback, exercise, nutrition, and supplementation. During the previous 10 years, McGarey reported, 160 to 170 such programs were conducted with 10 to 18 attendees at most of them. It now costs \$4,100.

McGarey lamented that "When doctors fail to recognize the spiritual aspect of the human being, they miss the most important part." When one recognizes our destiny as "getting back to our spiritual origin," he said, "there is a different kind of emphasis on healing; you do not get tied up with modalities. Healing is more of a spiritual event." McGarey also noted, "When you treat someone, we cannot consider ourselves as the healer. We are only the . . . channel of the Great Healer."

"Most any kind of condition," McGarey stated, "is not as significant as the cause and what we can do to direct the body back to normal." He further stated that "Any time you are disturbing what is normal, you are creating disease." In the *Edgar Cayce Remedies* (1983), he advocated potato poultices to the eyes (for cataracts), monthly "high-colonic" enemas for angina pectoris, and castor oil packs for epilepsy and cat bites.

A Recent Conference

Each year, A.R.E. holds dozens of conferences in Virginia Beach and various other cities. Many deal with "awakening" psychic powers, but some deal with astrology ("the key to self-discovery") and such mundane topics as weight control and "managing your financial resources holistically."

On September 8, 1990 I attended an A.R.E. "Special Event" entitled "Wellness: The Cayce Approach to Health and Healing," held in the cafeteria of the Baptist-denomination Riverside Church in Manhattan, near Columbia University. "Tuition" at the door was \$89. I estimate that 300 people attended, most of them white and apparently over 30. Books for sale covered two tables near the cafeteria entrance. I was

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Editorial correspondence should be sent to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105.

POSTMASTER: Send address changes to Nutrition Forum, Downsville Pike, Route 3, Box 20-B, Hagerstown, MD 21740.

accompanied by a social worker from India with a master's degree in theology, who likened the situation to a retreat.

The opening remarks were made by Charles Thomas Cayce, who asked us to rate the applicability of 25 items on a "health inventory" included in a scanty information packet. The items included: "I have a sense of well being," "I do not depend on medicines, including prescription drugs, to maintain my health," "Silence is enjoyable," and "I have a personal definition of God which has meaning to me." He told us to take a few minutes to discuss one negative response with someone nearby.

Dr. Cayce said the conference would take "a closer look at alternative explanations for illness [and] alternative approaches to wellness." He stated that over two thirds of the "readings" given by his grandfather concerned illnesses and their cure, and that another large portion dealt with general aspects of healing such as "emotional imbalance" and "at-tunement of the body and the mind to the spiritual aspect of ourselves." He said that in the Cayce readings, the term "spirit" is used interchangeably with the terms "God," "creative forces," and "life force," and that one force, God, can be used in "good ways or bad ways that we label evil." He then spoke of the "universal Christ-consciousness . . . an awareness within each soul imprinting its pattern on the mind, waiting to be awakened by the will, of our oneness with God."

"The premise here," he explained, "is that the mind is more than brain, cortex, blood, cells." He defined healing as "the process of awakening that God-pattern within," and quoted a phrase common in the Cayce readings: "Spirit is the life, mind is the builder, the physical is the result." He stated that with every thought we have, we are building patterns, or "thought-forms," that "create a mental body, an energy body . . . a nonphysical body manifesting as colors and images depending on how it's perceived by people with various sorts of sensitivities."

Dr. Cayce introduced the first speaker, Eric Mein, M.D., a former "Fellow-in-Residence" at the Edgar Cayce Foundation who was finishing his medical residency at the University of Washington in Seattle. Dr. Mein led us in breathing and stretching exercises while the slide projector and screen were being readied. Then he wondered aloud why it is "un-heard-of" for the "spirit-body connection" to be discussed in conventional medical circles. Later he referred to the many temples of Aesculapius, the ancient Greek god of healing, as "holistic centers." He suggested that everything affects the immune system but dismissed the details of a pivotal slide on the subject as "gibberish."

The next speaker was Gladys McGarey, M.D., who, in addition to her role of co-director of the A.R.E. Clinic, has been president of the American Holistic Medical Association. Her topic was "The Healing Energy of Pain." After describing her dog as "a real pain," but still her friend, she stated that pain is "our friend" also. This is so, she explained, because pain awakens within us "the awareness that we're alive. If you don't feel pain . . . you're dead." Her idea of pain, she said, comprises not only physical pain, but "mental pain" such as the pain of confusion, "the pain of forgetting," as in Alzheimer's disease, and the "pain that comes from remembering."

Dr. McGarey recounted the story of a mother whose baby was hospitalized and near death from a large cyst on her right lung. "It didn't look like the baby was going to make it through the night. We called our study group and had the . . . group begin to pray for [them]." The mother "got up to go to the

hospital. but as she walked past her bed, she laid on the bed and she fell asleep. About a half an hour later she woke up just throwing up this huge amount of mucus . . . but again she fell back asleep and she didn't wake up until morning," at which time she called the hospital and was told her baby was "doing much better." The next morning an x-ray revealed that the lung was clear. "You see," said McGarey, "what had happened was that the mother took on her baby's condition and she threw up a whole lot of mucus that cleared the situation for the baby."

Of another patient, who had "severe" lung cancer and was understandably very angry and miserable, she said, "It was his anger, actually, that had probably precipitated the cancer." He died two months later, but McGarey judged that massage and other "alternative" therapies had been successful because the patient had "died in a completely connected state." McGarey also expressed belief in reincarnation, "past-life regression," and "the chakra system," which she equated with the endocrine system.

Drs. Mein and McGarey were joined by Roger Jahnke, C.A., O.M.D., for a panel discussion and question-and-answer session moderated by Dr. Cayce. Jahnke said that as a premed student he had worked in various hospital departments, including dietary, but had "never found in the hospital what I felt . . . true healing was all about. So I dropped out basically . . . and I became an English major and started writing poetry." In the literature of aboriginal cultures, he found that "the spiritual tradition and the medicine are one." Now he teaches at the unaccredited Santa Barbara College of Oriental Medicine. The initials after his name stand for "Certified Acupuncturist" and "Doctor of Oriental Medicine."

In response to a question, Dr. Mein stated that chronic fatigue syndrome is often the result of "impaired eliminations" or "toxic buildup" and suggested "the apple diet or mono [single food] diet." Dr. Jahnke recommended tai chi, a Chinese martial art comprising ballet-like exercises.

Near the discussion's end, Cayce asked the panelists: "When you consider causes for a physical problem, do you include past-life influences?" Dr. Mein replied "sometimes" and Dr. McGarey said yes.

Before breaking for lunch, we were referred to brochures describing local A.R.E. activities and to the catalog of Atlantic University, an unaccredited institution in Virginia Beach that offers a master's degree in "Transpersonal Studies," the philosophies of the Edgar Cayce tradition.

After lunch, Jahnke instructed us in acupressure, "personal reflexology" and "freestyle" tai chi. "After you get into this . . . new health care revolution," he said, "if you get confused about what to do . . . go to the Chinese literature, or go to the Ayurvedic Hindu-Buddhist literature, or go to the Native American literature, or go to the Polynesian literature. Go to any . . . health literature of any [aboriginal] culture."

Jahnke emphasized that his "self-applied health-enhancement methods" could be learned in a few minutes and "can't be forgotten because [they] are so deep within . . . your cellular nature. . . . These ideas are in you, and they've been covered over with . . . an unfortunate misunderstanding." He then took about 45 minutes to give us a sketchy idea of the methods.

"We've paid too much for health care," Jahnke lamented. "Somebody was complaining earlier: All the good stuff Medicare doesn't pay for."

After teaching "alternate nostril breathing," he mar-

velled aloud that Edgar Cayce—who had traveled very little—had known about it: “It just really was one of the first things that blew my mind. I mean, there he was in Hopkinsville, Kentucky, and maybe the circus came to town, and maybe there was a Buddhist monk in the side show but maybe not.”

A woman in the audience asked what it meant to have “very extra-long ear lobes.” Jahnke replied that if she had such ear lobes, she “may be a relative of the Buddha.” In response to the laughter, he assured us he wasn’t joking. With regard to herbal tonics, he said, “Be sure you know what you’re taking—and then go ahead because the herbs are good.” Although “we love all this esoteric stuff,” he said, the salient message of the day is that healing takes an investment of time and that we should not interfere with healing by taking too many medicines.

Later Jahnke told us to pinch our fingers to discover tenderness at acupuncture points. A woman reported some in her pinky, which Jahnke said was the channel for the heart and the small intestine. “Eat good,” he advised her. “Don’t forget to love yourself . . . [and] get a little exercise.” When he informed us that acupuncture points lie throughout the palm of the hand and told us to “find a sore spot,” my companion aptly noted, “When you push it real hard, you get sore all over.”

A question from the audience prompted Jahnke’s return to the subject of herbs, which he described as “super-nutrients because our food is kind of in trouble,” even in health food stores. Vitamin supplements, he said, “are a little difficult because they’re nutrients that are extracted from their source. . . . n herbal medicine . . . you’re deriving the full nutritional benefit, especially if the herbs are concentrated in a very special way.” But he was evasive when asked to give an example of a tonic herb, calling the question “inappropriate” and repeating his recommendation that interested persons sign a sheet at the information table.

During the last break, a woman hurriedly handed me a business card advertising a Reverend Jean’s channeling classes.

The final presentation covered Cayce home remedies, a collection of 16 methods detailed in a videotape covered by the cost of admission. They include: castor oil packs (“to help with arthritis, colds, gallstones, ulcers and more”); peanut oil massages (“to prevent arthritis”); potato poultices (“to relieve tired or strained eyes”); castor oil liniments (“to remove warts”); and coffee ground foot baths (“to soothe sore feet and improve circulation in the legs”).

Diet Basics

“New Age” popularizer Hans Holzer, Ph.D., has called Cayce the “greatest of all dietetic healers.” In *Beyond Medicine* (1987), Holzer writes: “Edgar Cayce abundantly made clear in his writings [that] certain combinations of foodstuffs are chemically incompatible in the human system [and] can create damage or at the very least ill health.” For example, coffee should be taken black or with hot milk, but not with cold milk. And tea with sugar, especially white sugar, is hepatotoxic; tea with honey is not.

According to an A.R.E. chart: (1) 80% of one’s daily food intake should consist of fruits and fruit juices, vegetables, water, and herbal teas; (2) 20% should consist of dairy products including whole milk and butter, whole-grain breads, high-fiber cereals including granola, honey, soups, fowl, lamb, and fish; (3) desserts such as ice cream, beef, brown rice, oils, potatoes with skin, spices, gelatin products, cheese, and eggs should be

consumed about three times weekly; and (4) fried foods, alcohol, pasta, white bread, pork (except crisp bacon occasionally), and “processed foods” are to be avoided.

The “readings” in *Edgar Cayce on Diet and Health* include the following tidbits:

Canned tomatoes are usually preferable to fresh.

Gelatin facilitates glandular activity.

Certified raw milk is to be preferred, except from cows that eat certain types of weeds or grass growing in January.

Raw green peppers should not be eaten alone.

Citrus fruits and cereals should not be eaten together. Have a percentage of 80% alkaline-producing to 20% acid-producing foods in the diet.

Don’t combine white bread, potatoes, spaghetti, or any two foods of such natures, in the same meal.

Ice cream is far preferable to pie, which combines starches and sweets.

Orange juice and milk should be consumed separately at opposite ends of the day.

It is preferable to consume meats with sweets than with starches.

Citrus juice or tomato juice should not be consumed with any starch other than whole wheat bread.

Lime juice should ideally be added to orange juice, and lemon juice to grapefruit juice (an idea, the authors admitted, “probably new to those working in the science of modern dietetics and food research”).

It is “normal” to consume above-ground and below-ground vegetables in a ratio of three to one.

Squirrel should be stewed or well cooked.

Cheese and cream are good for the system.

Beet and “raw” cane sugars are the best for everyone.

The book’s foreword stresses that all the readings it contains pertain to “normal” healthy people who are not overweight.

Critical Comments

In *Health and Healing: Understanding Conventional and Alternative Medicine* (1983), ethnopharmacologist Andrew Weil, M.D., a “natural medicine” sympathizer, says of the Cayce readings:

Much of this material sounds like hogwash. I, for one, do not expect California to fall into the sea by 1998, creating a new coast near Phoenix, Arizona. I find many of Cayce’s metabolic and hormonal explanations of specific diseases to be garbled and fanciful, such as his assertion that multiple sclerosis is an imbalance of the endocrine glands due to deficiency of gold.

I certainly agree. As far as I know, no study has determined the extent to which Cayce advocates follow his advice or what impact it has on their lives. Nor has it been determined whether they seek appropriate medical help when it is needed. If such studies could be done, what do you think they would find?

Mr. Raso is Assistant Chief Dietitian at Wyckoff Heights Medical Center in Brooklyn, New York.

DIETARY GUIDELINES REVISED

The third (1990) edition of *Nutrition and Your Health: Dietary Guidelines for Americans* has been published. The document presents dietary advice for healthy Americans and constitutes the central statement of federal nutrition policy. Issued jointly by the U.S. Departments of Agriculture and Health and Human Services, the guidelines were released originally in 1980 and updated in 1985. The two Departments distributed more than five million copies of the 1985 edition, and millions more were printed and distributed by others.

The new edition is based on recommendations of a nine-member advisory committee: Malden C. Nesheim, Ph.D. (chairman); Lewis A. Barnes, M.D.; Peggy R. Borum, Ph.D.; C. Wayne Callaway, M.D.; John C. LaRosa, M.D.; Charles S. Lieber, M.D.; John A. Milner, Ph.D.; Rebecca M. Mullis, Ph.D.; and Barbara O. Schneeman, Ph.D. This committee and departmental reviewers concluded that the central messages of the 1985 guidelines remain sound and of major importance in choosing food for a healthful diet. The new edition is more specific and quantitative than previous versions, and is written in a more positive tone. The changes reflect new scientific evidence on the relationships between diet and health, information on the usefulness of the earlier editions, and formal comments from individuals and groups outside the government.

Seven Guidelines

The new report states that food alone cannot make people healthy. Smoking, alcohol abuse, other lifestyle factors, and heredity are also important. The American food supply is varied, plentiful, and safe to eat. But many Americans eat diets with too many calories, too much fat (especially saturated fat), cholesterol and sodium, and low in complex carbohydrates and fiber. The revised guidelines are:

- *Eat a variety of foods.* To assure variety and a well-balanced diet, choose foods each day from five major food groups: vegetables (3–5 servings); fruits (2–4 servings); breads, cereals, rice, and pasta (6–11 servings); milk, yogurt, and cheese (2–3 servings); and meats, poultry, fish, eggs, and

dry beans and peas (2–3 servings). Vitamin or mineral supplements at or below the RDAs are safe, but are rarely needed except by women who are menstruating, pregnant, or breast-feeding. Many women and adolescent girls need to eat more calcium, and children, teenage girls, and women of childbearing age should take care to consume enough iron-rich foods.

- *Maintain healthy weight.* Obesity is associated with many serious illnesses. Being too thin is linked to osteoporosis in women and early death in both men and women. The guidelines recommend ranges of weights for adults ages 19 to 34 and higher ranges for those 35 and over. Waist measure should be smaller than hip measure. For those who are overweight, the recommended loss of 1/2 to 1 pound a week should be accomplished by increasing physical activity and eating less fat and fatty foods, more fruits, vegetables, and cereals, less sugar and other sweets, and little or no alcohol.

- *Choose a diet low in fat, saturated fat, and cholesterol.* This advice is tied to the goal of maintaining blood cholesterol level below 200 mg/dl. It recommends a fat intake of 30% or less of calories, with less than 10% of calories as saturated fat. Have your blood cholesterol level checked. If it is within a desirable range, help keep it that way with a diet low in saturated fat and cholesterol. If it is high, follow the doctor's advice about diet and medication.

- *Choose a diet with plenty of vegetables, fruits, and grain products.* This guideline recommends that adults eat at least three servings of vegetables and two servings of fruit daily. It also recommends at least six servings of grain products, with an emphasis on whole grains. Because foods differ in the kinds of fiber they contain, it is best to include a variety of fiber-rich foods. Fiber should be obtained from foods, not supplements.

- *Use sugars only in moderation.* The major health concern with excess sugar consumption is tooth decay. The risk does not depend simply on the amount of sugar consumed but on the frequency of consumption of sugars and starches and how long they remain in contact with the teeth. Eating such foods as frequent between-meal snacks may be more harmful to teeth than having them at meals. Teeth should be brushed (with a fluoride toothpaste) and flossed regularly. Fluoridated water or

COMPARISON OF 1985 AND 1990 DIETARY GUIDELINES

1985	1990	Reason for Change
Eat a variety of foods	Eat a variety of foods	(No change)
Maintain desirable weight	Maintain healthy weight	Focus on total diet in more positive way
Avoid too much fat, saturated fat, and cholesterol	Choose a diet low in fat, saturated fat, and cholesterol	New interim health-based weight criteria
Eat foods with adequate starch and fiber	Choose a diet with plenty of vegetables, fruits, and grain products	Focus on foods, rather than food component, in total diet
Avoid too much sugar	Use sugars only in moderation	Focus on targeted food in a more positive way
Avoid too much sodium	Use salt and sodium in moderation	Focus on both in more positive way
If you drink alcoholic beverages, do so in moderation	If you drink alcoholic beverages, do so in moderation	(No change)

another fluoride source is especially important for children while their teeth are forming.

- *Use salt and sodium in moderation.* Noting that high sodium intake can be a factor in high blood pressure, the guidelines suggest that sodium intake be moderated. This can be accomplished by learning to enjoy the flavors of unsalted foods; adding little or no salt during cooking or at the table; flavoring foods with herbs, spices, or lemon juice; and limiting intake of foods that are obviously salty or contain significant amounts of hidden salt. A blood pressure check is also recommended.

- *If you drink alcoholic beverages, do so in moderation.* Alcoholic beverages supply calories but few or no nutrients. Drinking them has no proven health benefit and is linked with many health problems, is the cause of many accidents, and can lead to addiction. Since birth defects have been attributed to drinking during pregnancy, women who are pregnant or trying to conceive are advised to abstain completely from alcohol. People planning to drive a car or engage in another activity that requires attention or skill are also advised to abstain.

In October 1990, Congress enacted the National Nutritional Monitoring and Related Research Act of 1990 (Public Law 101-445), a bill intended to ensure more complete information while reducing duplication of efforts among government agencies studying the eating habits of Americans. The bill calls for

the establishment of a National Nutrition Monitoring Advisory Council and an Interagency Board for Nutrition Monitoring and Related Research. It also states that *Dietary Guidelines for Americans* will be updated and published every five years.

Copies Available

Single copies of *Nutrition and Your Health: Dietary Guidelines for Americans* (HG 232) are available free from the Consumer Information Center, Department 514-X, Pueblo, CO 81009; at county extension offices; or through DHHS, ODPHP, National Health Information Center, P.O. Box 1133, Washington, D.C. 20013.

The report of the Dietary Guidelines Advisory Committee was published in May 1990. It contains the committee's recommendations, the rationale for proposed changes, and an overview of public comments to the committee. Free copies are available from the Human Nutrition Information Service, USDA, Room 325A, Federal Building, Hyattsville, MD 20782.

Detailed suggestions for implementing the guidelines are included in *Dietary Guidelines and Your Diet*, publication 001-000-04467-2 (1986), available for \$4.50 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

BOOK REVIEW

Title: Dubious Cancer Treatment—A Report on "Alternative" Methods and the Practitioners and Patients Who Use Them (1991)

Editors: Stephen Barrett, M.D., and Barrie R. Cassileth, Ph.D.
Publisher: American Cancer Society, Florida Division, Inc., Tampa, Florida

Price: \$10.00 (softcover)

Reviewed by: Manfred Kroger, Ph.D.

Scientifically based cancer treatment is visible and measurable. Its methods are sanctioned and supported by the public as well as by medical institutions. But dubious methods (those lacking a scientific basis) operate in the shadows. Their promoters rarely, if ever, collect meaningful data on their results. Investigations by outsiders are sparse and done mainly by a handful of devoted "quackbusters." The national office of the American Cancer Society collects data and issues position papers on "unproven methods," but it has shied away from publishing them as a unit.

Dubious Cancer Treatment is the first book of its kind to bring together prominent experts on cancer quackery. It evolved from a seminar sponsored by the society's Florida division, with all material updated under the editors' guidance. Each participant has particular insights into the subject.

Gary K. Lyman, M.D., an oncologist in Florida, compares proven and dubious treatments. William T. Jarvis, Ph.D., president of the National Council Against Health Fraud, provides useful definitions, delineates how quackery is promoted, and spells out how it can harm. Victor Herbert, M.D., J.D., a prolific nutrition researcher and lawyer, briefly deals with

ethical considerations. Co-editor Barrie R. Cassileth, Ph.D., a researcher on social aspects of cancer, has a chapter on historical trends and patient characteristics. Psychiatrist Jimmie C. Holland, M.D., a leading scholar on cancer and emotions, analyzes why patients choose dubious treatment. Benjamin R. Wilson, M.D., an Oregon surgeon, spotlights dubious degrees and spurious science on a quack-by-quack basis. James A. Lowell, Ph.D., who has visited the notorious Mexican cancer clinics many times, describes his unique findings. Surgeon Joseph J. Zaveritnik, M.D., analyzes "immuno-augmentative therapy," while pathologist Edward R. Friedlander, M.D., critiques mental imagery. Edward T. Creagan, M.D., a leading Mayo Clinic researcher, reports on three Mayo studies of vitamin C and cancer. Grace P. Monaco, J.D., a specialist in health law, deals with legal and insurance issues. James Randi, widely known as a "magician" and investigator of occult and supernatural claims, appeals for more antiquackery action. And Helen G. Brown, a community educator from the University of California, Los Angeles, challenges patients to approach cancer rationally.

This slender monograph is terribly important for professionals as well as for patients. The Florida Division of the American Cancer Society deserves congratulations for its courage and persistence in coordinating this project.

Dr. Kroger is professor of food science at The Pennsylvania State University and associate editor of the *Journal of Food Science*. The book is not available through bookstores but can be ordered for \$10 postpaid from LVCAHF Inc., P.O. Box 1747, Allentown, PA 18105.

MY QUICK TOUR OF WHOLE LIFE EXPO

Stephen Barrett, M.D.

Ads for Whole Life Expo describe it as "the world's largest exposition for health, fitness and awareness of the body, mind and spirit." The ads promised over 200 speakers and 300 exhibits at locations in New York City (October 26-28, 1990) and Los Angeles (February 15-18, 1991). At the New York event, some 120 exhibitors promoted a wide array of products, procedures and philosophies for dealing with life's problems. The products included self-help books and videos, subliminal tapes, crystals and other "new age" jewelry, special lights, supplement products, herbal remedies, and all sorts of gadgets to relieve stress. Hands-on treatment was offered by many types of "holistic" and occult practitioners. Animal rights and environmental groups were also represented. During my 3-hour tour of the exhibits, I acquired an armful of brochures and observed the following:

- An exhibitor for a blue-green alga (spirulina) product said it was "the best source of B₁₂ on the planet," was effective against cancer, Alzheimer's disease, and worked by "sucking out the toxins from the body."

- A gentleman hawking a red "phototherapy" light said that the aorta was so close to the surface that holding the light near the body for 20 minutes would enable it to benefit all of the body's blood cells.

- A company selling aloe products displayed a sign that said "Aloe is to an AIDS patient as insulin is to a diabetic." Other signs suggested that aloe "settles nerves," "stimulates cell growth," and is useful against arthritis, AIDS, yeast infections, ulcers, intestinal disorders, high blood pressure, skin problems, and chemotherapy.

- Occult modalities included "psychic astrology" (\$20 for 15 minutes), "aura" photographs and readings (\$10), "past-life regression" pyramidal gadgets, and "energy balancers."

- At one exhibit, reflexologists claimed that foot massage can reduce stress, cleanse the body of toxins, increase

circulation, assist in weight loss, and improve the health of organs throughout the body. Six practitioners, whose services were available for modest fees, were kept busy massaging people's feet throughout the time I toured the exhibit hall.

- A chiropractor who examined my spine expressed amazement that I didn't suffer from back pain and urged me to visit his office for preventive treatment.

- After completing a brief questionnaire to determine my "body type," I was informed by a Maharishi Ayur-Veda exhibitor that my "doshas" were imbalanced and offered to sell me a tea to correct this. When I indicated that my health was good, he replied that achieving balance through Ayurvedic measures would prevent future trouble.

- Several companies offered juice made from "green foods." One salesman said that the B-vitamins in his product would provide a "burst of energy." I tried one, which tasted like grass.

- More than a dozen exhibitors represented multilevel companies that market nutritional or herbal products. The most noteworthy were Omnitrition International, which was formed to market products formulated by Durk Pearson and Sandy Shaw (authors of *Life Extension*), and Showcase International, a Rexall subsidiary. Showcase plans to market homeopathic remedies, a "health tonic, high in natural nutrients," and guar gum/nutrient drinks and high-fiber brownies claimed to help control weight and cholesterol levels. I also had the opportunity to sample *Km*, an herbal product claimed by various distributors to do just about everything. I have never tasted anything worse.

Dr. Barrett, a practicing psychiatrist and consumer advocate, is a board member of the National Council Against Health Fraud. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting Nutrition Quackery.

BRIEFS

CANAH dissolved. The Coalition for Alternatives in Nutrition and Healthcare ceased operations on October 31, 1990, due to lack of funding. It was launched in 1984 with the primary goal of seeking a "healthcare rights amendment" that would forbid Congress from restricting "any individual's right to choose and to practice the type of healthcare they shall elect for themselves or their children." Shortly before its dissolution, it presented a petition with nearly 100,000 signatures to an official of the U.S. Department of Health and Human Services.

French Parliament limits alcohol and tobacco ads. In 1993, tobacco advertising will be banned in France and alcohol advertising will be limited to late-night radio. The U.S. Leadership Council on Advertising has estimated that similar bans in this country would eliminate as many as 249 magazines that depend on the revenue from such ads.

Report criticizes "organically grown foods." The Institute of Food Technologists has issued an excellent report debunking the mythology of "organic" foods. Copies are available for \$1.00 from the Institute of Food Technologists, 221 N. LaSalle St., Chicago, IL 60601.

More One-A-Day enforcement actions. Miles Laboratories has signed a 3-year "assurance of discontinuance" order with the attorneys general of New York, California, and Texas and agreed to pay \$10,000 to each of these three states. Without admitting wrongdoing, Miles pledged not to claim that: 1) the average consumer needs a supplement to prevent mineral and vitamin loss; 2) vitamins can prevent or reverse lung damage caused by pollution; 3) routine daily stress depletes vitamins; or 4) routine physical exercise such as the aerobics shown in Miles' television ad depletes essential minerals.

New MR FIT findings. The Multiple Risk Factor Intervention Trial, funded by the National Institutes of Health, was designed to see whether an intensive educational program could lower the death rate for heart disease. The study involved more than 12,000 middle-aged men whose levels of cigarette smoking, blood cholesterol, blood pressure, or a combination of these factors, placed them at high risk for heart disease. After careful evaluation, the men were randomly assigned either to a special intervention (SI) program or to their usual sources of health care (UC). The program ended after participants had been followed for more than 6 years. At that time, the researchers were surprised to find no overall difference in death rates between the two groups [JAMA 248:1465-1477, 1982]. However, after 4 additional years, the SI group had experienced fewer heart attacks and had a lower overall death rate [JAMA 263:1795-1801, 1990]. Both groups were smoking less and had lower blood cholesterol levels, but the improvement was greater in the SI group:

	Baseline		10-year follow-up	
	SI	UC	SI	UC
Cigarette smoking	63%	63%	48%	34%
Blood cholesterol	240	240	233	228

Reprints can be obtained from Marcus O. Kjelsberg, Ph.D., Coordinating Centers for Biometric Research, School of Public Health, University of Minnesota, Room 200, 2221 University Avenue, S.E., Minneapolis, MN 55414.

BST booklet. The American Council on Science and Health has published a position paper strongly supporting the use of bovine somatotropin (BST) to increase the amount of milk cows can produce. Copies are available for \$3.85 from ACSH, 1995 Broadway, 16th Floor, New York, NY 10023.

Fluoridation booklet. The American Council on Science and Health has published a position paper supporting fluoridation of public water supplies. Copies are available for \$3.85 from ACSH, 1995 Broadway, 16th Floor, New York, NY 10023.

Suit filed over Alar scare. Apple growers are seeking damages from CBS-TV's *60 Minutes* and the Natural Resources Defense Fund for sales lost during a scare over the growth chemical Alar. The industry estimates that growers lost more than \$100 million after the program, "Intolerable Risk: Pesti-

cides in Our Children's Food," was broadcast in February 1989. A few months later, Alar's manufacturer stopped selling it.

Notable quote. "We live in a society exquisitely dependent on science, and most of the people know nothing about science. That is a prescription for disaster . . . Science is a way of thinking much more than it is a body of knowledge."—Carl Sagan, Ph.D. [JAMA 261:2169, 1989].

Mercury-amalgam scam boosted. On December 23, 1990, CBS-TV's *60 Minutes* aired a vicious attack on the safety of "silver" fillings. Segments of the broadcast claimed that they emit toxic amounts of mercury that cause serious disease. Although removal temporarily raises body mercury load, a woman was permitted to state that her symptoms of multiple sclerosis disappeared overnight after her fillings were taken out. The program triggered an avalanche of queries to dentists and induced many viewers seek replacement of their fillings with other materials. "Silver" fillings are actually an alloy of silver, tin, copper, zinc, and mercury. Although liquid mercury is toxic, there is overwhelming evidence that mercury in the alloy is stable and safe. The American Dental Association, which criticized the program, considers it unethical for dentists to represent that removing amalgam fillings can cure disease. In a letter to Executive Producer Don Hewitt, Dr. Stephen Barrett characterized the program as "the most irresponsible report on a health topic ever broadcast."

Water testing scams. The Federal Trade Commission has warned that offers for free home-testing of tap water are almost always part of a sales promotion. Nor can home-testing provide the in-depth analysis required to determine whether water actually needs treatment or what type of system would be best. Although contaminants have been reported in some water supplies, most households have no cause to worry. But fraudulent sellers who offer "free home water testing" suggest otherwise. Some add tablets or drops to tap water, claiming that particle formation or a color change signifies contamination. When the change occurs (due to normal chemical reactions), they claim the water is polluted and may cause cancer. Some sellers say that our government recommends widespread use of purification systems, has approved their testing method, or has approved or licensed their equipment. These claims are false. The government does not endorse water tests or water treatment products, and an Environmental Protection Agency (EPA) registration number does not signify agency "approval." The FTC advises people worried about their water supply to call EPA's Safe Drinking Water Hotline (800-426-4791) or to consult their local or state health department or a state-certified laboratory. A free brochure, "Water Testing Scams," can be obtained from the FTC Public Reference Branch, 6th & Pennsylvania Ave., N.W., Washington, DC 20580.

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Forum

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HOW QUACKERY SELLS

William T. Jarvis, Ph.D.
Stephen Barrett, M.D.

Modern health quacks are supersalesmen. They play on fear. They cater to hope. And once they have you, they'll keep you coming back for more . . . and more . . . and more. Seldom do their victims realize how often or how skillfully they are cheated. Does the mother who feels good as she hands her child a vitamin think to ask herself whether he really needs it? Do subscribers to "health food" publications realize that articles are slanted to stimulate business for their advertisers? Not usually.

Most people think that quackery is easy to spot, but it is not. Its promoters wear the cloak of science. They use scientific terms and quote (or misquote) scientific references. On talk shows, they may be introduced as "scientists ahead of their time." The very word "quack" helps their camouflage by making us think of an outlandish character selling snake oil from the back of a covered wagon—and, of course, no intelligent people would buy snake oil nowadays, would they?

Well, maybe snake oil isn't selling so well, lately. But acupuncture? "Organic" foods? Mouthwash? Hair analysis? The latest diet book? Megavitamins? "Stress" formulas? Cholesterol-lowering teas? Homeopathic remedies? Nutritional "cures" for AIDS? Or shots to pep you up? Business is booming for health quacks. Their annual take is in the *billions!* Spot reducers, "immune boosters," water purifiers, "ergogenic aids," systems to "balance body chemistry," special diets for arthritis. Their product list is endless.

What sells is not the quality of their products but their ability to influence their audience. To those in pain, they promise relief. To the incurable, they offer hope. To the nutrition-conscious, they say, "Make sure you have enough." To a public worried about pollution, they say, "Buy natural." To one and all, they promise better health and a longer life. Modern quacks can reach people emotionally, on the level that counts the most. This article shows how they do it.

Appeals To Vanity

An attractive young airline stewardess once told a physician that she was taking more than 20 vitamin pills a day. "I used to feel run-down all the time," she said, "but now I feel really great!"

"Yes," the doctor replied, "but there is no scientific evidence that extra vitamins can do that. Why not take the pills one month on, one month off, to see whether they really help you or whether it's just a coincidence. After all, \$300 a year is a lot of money to be wasting."

"Look, doctor," she said. "I don't care what you say. I KNOW the pills are helping me."

How was this bright young woman converted into a true believer? First, an appeal to her curiosity persuaded her to try and see. Then an appeal to her vanity convinced her to disregard scientific evidence in favor of personal experience—to *think for herself*. Supplementation is encouraged by a distorted concept of *biochemical individuality*—that everyone is unique enough to disregard the Recommended Dietary Allowances (RDAs). Quacks will not tell you that scientists deliberately set the RDAs high enough to allow for individual differences. A more dangerous appeal of this type is the suggestion that although a remedy for a serious disease has not been shown to work for other people, *it still might work for you. (You are extraordinary!)*

A more subtle appeal to your vanity underlies the message of the TV ad quack: *Do it yourself—be your own doctor.* "Anyone out there have 'tired blood'?" he used to wonder. (Don't bother to find out what's wrong with you, however. Just try my tonic.) "Troubled with irregularity?" he asks. (Pay no attention to the doctors who say you don't need a daily movement. Just use my laxative.) "Want to kill germs on contact?" (Never mind that mouthwash doesn't prevent colds.) "Trouble sleeping?" (Don't bother to solve the underlying problem. Just try my sedative.)

Turning Customers Into Salespeople

Most people who think they have been helped by an unorthodox method enjoy sharing their success stories with their friends. People who give such *testimonials* are usually motivated by a sincere wish to *help their fellow humans*. Rarely do they realize how difficult it is to evaluate a "health" product on the basis of personal experience. Like the airline stewardess, the average person who feels better after taking a product will

not be able to rule out coincidence—or the placebo effect (feeling better because he thinks he has taken a positive step). Since we tend to believe what others tell us of personal experiences, testimonials can be powerful persuaders. Despite their unreliability, they are the cornerstone of the quack's success.

Multilevel companies that sell nutritional products systematically turn their customers into salespeople. "When you share our products," says the sales manual of one such company, "you're not just selling. You're passing on news about products you believe in to people you care about. Make a list of people you know; you'll be surprised how long it will be. This list is your first source of potential customers." A sales leader from another company suggests, "Answer all objections with *testimonials*. That's the secret to *motivating* people!"

Don't be surprised if one of your friends or neighbors tries to sell you vitamins. More than a million Americans have signed up as multilevel distributors. Like many drug addicts, they become suppliers to support their habit. A typical sales pitch goes like this: "How would you like to look better, feel better and have more energy? Try my vitamins for a few weeks." People normally have ups and downs, and a friend's interest or suggestion, or the thought of taking a positive step, may actually make a person feel better. Many who try the vitamins will mistakenly think they have been helped—and continue to buy them, usually at inflated prices.

Faked endorsements are being used to promote anti-aging products and other nostrums sold by mail. The literature, which resembles a newspaper page with an ad on one side and news on the other, contains what appears to be a handwritten note from a friend (identified by first initial). "Dear Anne," it might say, "This really works. Try it! B." Although both the product and the "newspaper page" are fakes, many recipients wonder who among their acquaintances might have signed the note.

The Use of Fear

The sale of vitamins has become so profitable that some otherwise reputable manufacturers are promoting them with misleading claims. For example, for many years, Lederle Laboratories (makers of *Stresstabs*) and Hoffmann-La Roche advertised in major magazines that stress "robs" the body of vitamins and creates significant danger of vitamin deficiencies. Another slick way for quackery to attract customers is the *invented disease*. Virtually everyone has symptoms of one sort or another—minor aches or pains, reactions to stress or hormone variations, effects of aging, etc. Labeling these ups and downs of life as symptoms of disease enables the quack to provide "treatment."

"Reactive hypoglycemia" is one such diagnosis. For decades, talk show "experts" and misguided physicians have preached that anxiety, headaches, weakness, dizziness, stomach upset, and other common reactions are often caused by "low blood sugar." But the facts are otherwise. Hypoglycemia is rare. Proper administration of blood sugar tests is required to make the diagnosis. A study of people who thought they had hypoglycemia showed that half of them had symptoms during a glucose tolerance test even though their blood sugar levels remained normal.

"Yeast allergy" is another favorite quack diagnosis. Here the symptoms are blamed on a "hidden" infection that is treated with antifungal drugs, special diets, and vitamin concoctions.

Food safety and environmental protection are important issues in our society. But rather than approach them logically, the food quacks exaggerate and oversimplify. To promote "organic" foods, they lump all additives into one class and attack them as "poisonous." They never mention that natural toxicants are prevented or destroyed by modern food technology. Nor do they let on that many additives are naturally occurring substances.

Sugar has been subject to particularly vicious attacks, being (falsely) blamed for most of the world's ailments. But quacks do more than warn about imaginary ailments. They sell "antidotes" for real ones. Care for some vitamin C to reduce the danger of smoking? Or some vitamin E to combat air pollutants? See your local supersalesman.

Quackery's most serious form of fear-mongering has been its attack on water fluoridation. Although fluoridation's safety is established beyond scientific doubt, well-planned scare campaigns have persuaded thousands of communities not to adjust the fluoride content of their water to prevent cavities. Millions of innocent children have suffered as a result.

Hope for Sale

Since ancient times, people have sought at least four different magic potions: the love potion, the fountain of youth, the cure-all, and the athletic superpill. Quackery always has been willing to cater to these desires. It used to offer unicorn horn, special elixirs, amulets, and magical brews. Today's products are vitamins, bee pollen, ginseng, *Gerovital*, "glandular extracts," and many more. Even reputable products are promoted as though they are potions. Toothpastes and colognes will improve our love life. Hair preparations and skin products will make us look "younger than our years." And Olympic athletes tell us that breakfast cereals will make us champions.

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False hope for the seriously ill is the cruelest form of quackery because it can lure victims away from effective treatment. Even when death is inevitable, however, false hope can do great damage. Experts who study the dying process tell us that while the initial reaction is shock and disbelief, most terminally ill patients will adjust very well as long as they do not feel abandoned. People who accept the reality of their fate not only die psychologically prepared, but also can put their affairs in order. On the other hand, those who buy false hope can get stuck in an attitude of denial. They waste financial resources and, worse yet, their remaining time.

The choice offered by the quack is not between hope and despair but between false hope and a chance to adjust to reality. Yet hope springs eternal. The late Jerry Walsh was a severe arthritic who crusaded coast-to-coast debunking arthritis quackery on behalf of the Arthritis Foundation. After a television appearance early in his career, he received 5,700 letters. One hundred congratulated him for blasting the quacks, but 4,500 were from arthritis victims who asked where they could obtain the very fakes he was exposing!

Clinical Tricks

The most important characteristic to which the success of quacks can be attributed is probably their ability to exude confidence. Even when they admit that a method is unproven, they can attempt to minimize this by mentioning how difficult and expensive it is to get something proven to the satisfaction of the FDA these days. If they exude *self-confidence* and enthusiasm, it is likely to be contagious and spread to patients and their loved ones.

Because people like the idea of making choices, quacks often refer to their methods as "*alternatives*." Correctly used, it can refer to aspirin and Tylenol as alternatives for the treatment of minor aches and pains. Both are proven safe and effective for the same purpose. Lumpectomy can be an alternative to radical mastectomy for breast cancer. Both have verifiable records of safety and effectiveness from which judgments can be drawn. Can a method that is unsafe, ineffective or unproven be a genuine alternative to one that is proven? Obviously not.

Quacks don't always limit themselves to phony treatment. Sometimes they offer legitimate treatment as well—the quackery is promoted as *something extra*. One example is the "orthomolecular" treatment of mental disorders with high dosages of vitamins in addition to orthodox forms of treatment. Patients who receive the "extra" treatment often become convinced that they need to take vitamins for the rest of their life. Such an outcome is inconsistent with the goal of good medical care, which should be to discourage unnecessary treatment.

The *one-sided coin* is a related ploy. When patients on combined (orthodox and quack) treatment improve, the quack remedy (e.g., laetrile) gets the credit. If things go badly, the patient is told that he arrived too late, and conventional treatment gets the blame. Some quacks who mix proven and unproven treatment call their approach *complementary therapy*.

Quacks also capitalize on the natural healing powers of the body by *taking credit* whenever possible for improvement in a patient's condition. One multilevel company—anxious to avoid legal difficulty in marketing its herbal concoction—makes no health claims whatsoever. "You take the product," a spokesperson suggests on the company's introductory videotape, "and tell me what it does for you." An opposite tack—*shifting blame*—is used by many cancer quacks. If their treatment doesn't work, it's because radiation and/or chemotherapy have "knocked out the immune system."

To promote their ideas, quacks often use a trick where they bypass an all-important basic question and *ask a second question* which, by itself, is not valid. An example of a "second question" is "Why don't the people of Hunza get cancer?" The quack's answer is "because they eat apricot pits" (or some other claim). The first question should have been "Do the people of Hunza get cancer?" The answer is "Yes!" Every group of people on earth gets cancer. So do all animals (vegetarians and meat-eaters alike) and plants. Another common gambit is the question, "Do you believe in vitamins?" The real question should be, "Does the average person eating a well balanced diet need to take supplements?" The answer is no.

Another selling trick is the use of *weasel words*. Quacks often use this technique in suggesting that one or more items on a list is reason to suspect that you *may* have a vitamin deficiency, a yeast infection, or whatever else they are offering to fix.

The *money-back guarantee* is a favorite trick of mail-order quacks. Most have no intention of returning any money—but even those who are willing know that few people will bother to return the product.

Another powerful persuader—*something for nothing*—is standard in advertisements promising effortless weight loss. It is also the hook of the telemarketer who promises a "valuable free prize" as a bonus for buying a water purifier, a 6-month supply of vitamins, or some other health or nutrition product. Those who bite receive either nothing or items worth far less than their cost. Credit card customers may also find unauthorized charges to their account.

The willingness to believe that a stranger can supply unique and valuable "inside" information—such as a tip on a horse race or the stock market—seems to be a universal human quirk. Quacks take full advantage of this trait in their promotion of *secret cures*. True scientists don't keep their breakthroughs secret. They share them with all mankind. If this were not so,

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we would still be going to private clinics for the vaccines and other medications used to conquer smallpox, polio, tuberculosis, and many other serious diseases.

Seductive Tactics

The practice of healing involves both art and science. The art includes all that is done for the patient psychologically. The science involves what is done about the disease itself. If a disease is psychosomatic, art may be all that is needed. The old-time doctor did not have much science in his little black bag, so he relied more upon the art (called his "bedside manner") and everyone loved him. Today, there is a great deal of science in the bag, but the art has been relatively neglected.

In a contest for patient satisfaction, art will beat science nearly every time. Quacks are masters at the art of delivering health care. The secret to this art is to make the patient believe that he is cared about as a person. To do this, quacks *rather love lavishly*. One way this is done is by having receptionists make notes on the patients' interests and concerns in order to recall them during future visits. This makes each patient feel special in a very personal sort of way. Some quacks even send birthday cards to every patient. Although seductive tactics may give patients a powerful psychological lift, they may also encourage over-reliance on an inappropriate therapy.

Handling the Opposition

Quacks are involved in a constant struggle with legitimate health care providers, mainstream scientists, government regulatory agencies, and consumer protection groups. Despite the strength of this orthodox opposition, quackery manages to flourish. To maintain their credibility, quacks use a variety of clever propaganda ploys. Here are some favorites:

"*They persecuted Galileo!*" The history of science is laced with instances where great pioneers and their discoveries were met with resistance. Harvey (nature of blood circulation), Lister (antiseptic technique), and Pasteur (germ theory) are notable examples. Today's quack boldly asserts that he is another example of someone ahead of his time. Close examination, however, will show how unlikely this is. First of all, the early pioneers who were persecuted lived during times that were much less scientific. In some cases, opposition to their ideas stemmed from religious forces. Second, it is a basic principle of the scientific method that the burden of proof belongs to the proponent of a claim. The ideas of Galileo, Harvey, Lister, and Pasteur overcame their opposition because their soundness could be demonstrated.

A related ploy, which is a favorite with cancer quacks, is the charge of "*conspiracy*." How can we be sure that the AMA, the FDA, the American Cancer Society, and others are not involved in some monstrous plot to withhold a cancer cure from the public? To begin with, history reveals no such practice in the past. The elimination of serious diseases is not a threat to the medical profession—doctors prosper by curing diseases, not by keeping people sick. It should also be apparent that modern medical technology has not altered the zeal of scientists to eliminate disease. When polio was conquered, iron lungs became virtually obsolete, but nobody resisted this advancement

because it would force hospitals to change. Neither will medical scientists mourn the eventual defeat of cancer.

Moreover, how could a conspiracy to withhold a cancer cure hope to be successful? Many physicians die of cancer each year. Do you believe that the vast majority of doctors would conspire to withhold a cure for a disease that affects them, their colleagues, and their loved ones? To be effective, a conspiracy would have to be worldwide. If laetrile, for example, really worked, many other nations' scientists would soon realize it.

Organized quackery poses its opposition to medical science as a philosophical conflict rather than a conflict about proven versus unproven or fraudulent methods. This creates the illusion of a "holy war" rather than a conflict that could be resolved by examining the facts.

Quacks like to charge that "*Science doesn't have all the answers*." That's true, but it doesn't claim to have them. Rather, it is a rational and responsible process that can answer many questions—including whether procedures are safe and effective for their intended purpose. It is quackery that constantly claims to have answers for incurable diseases. The idea that people should turn to quack remedies when frustrated by science's inability to control a disease is irrational. Science may not have all the answers, but quackery has no answers at all! It will take your money and break your heart.

Many treatments advanced by the scientific community are later shown to be unsafe or worthless. Such failures become grist for organized quackery's public relations mill in its ongoing attack on science. Actually, "failures" reflect a key element of science: its willingness to test its methods and beliefs and abandon those shown to be invalid. True medical scientists have no philosophical commitment to particular treatment approaches, only a commitment to develop and use methods that are safe and effective for an intended purpose.

When a quack remedy flunks a scientific test, its proponents merely reject the test. Science writer John J. Fried provides a classic description of this in his book, *Vitamin Politics*:

Because vitamin enthusiasts believe in publicity more than they believe in accurate scientific investigation, they use the media to perpetuate their faulty ideas without ever having to face up to the fallacies of their nonsensical theories. They announce to the world that horse manure, liberally rubbed into the scalp, will cure, oh, brain tumors. Researchers from the establishment side, under pressure to verify the claims, will run experiments and find that the claim is wrong. The enthusiasts will not retire to their laboratories to rethink their position. Not at all. They will announce to the world that the establishment wasn't using enough horse manure, or that it didn't use the horse manure long enough, or that it used horse manure from the wrong kind of horses. The process is never-ending. . . . The public is the ultimate loser in this charade.

Promoters of laetrile were notorious for shifting their claims. First they claimed that laetrile could cure cancer. Then they said it could not cure but could prevent or control cancer. Then they claimed laetrile was a vitamin and that cancer was a disease caused by a vitamin deficiency. Today they say that laetrile alone is not enough—it is part of "metabolic therapy," which includes special diet, supplement concoctions, and other modalities that vary from practitioner to practitioner.

The *disclaimer* is a related tactic. Instead of promising to cure your specific disease, some quacks will offer to "cleanse" or "detoxify" your body, balance its chemistry, release its "nerve energy," bring it in harmony with nature, or do other things to "help the body to heal itself." This type of disclaimer serves two purposes. Since it is impossible to measure the processes the quack describes, it is difficult to prove him wrong. In addition, if the quack is not a physician, the use of nonmedical terminology may help to avoid prosecution for practicing medicine without a license.

Books espousing unscientific practices typically suggest that the reader consult a doctor before following their advice. This disclaimer is intended to protect the author and publisher from legal responsibility for any dangerous ideas contained in the book. Both author and publisher know full well, however, that most people will not ask their doctor. If they wanted their doctor's advice, they probably would not be reading the book in the first place. Sometimes the quack will say, "You may have come to me too late, but I will try my best to help you." That way, if the treatment fails, you have only yourself to blame. Patients who see the light and abandon quack treatment may also be blamed for stopping too soon.

"Health Freedom"

If quacks cannot win by playing according to the rules, they try to change the rules by switching from the scientific to the political arena. In science, a medical claim is treated as false until proven beyond a reasonable doubt. But in politics, a medical claim may be accepted until proven false or harmful beyond a reasonable doubt. This is why proponents of laetrile, chiropractic, orthomolecular psychiatry, chelation therapy, and the like, take their case to legislators rather than to scientific groups.

Quacks use the concept of "*health freedom*" to divert attention away from themselves and toward victims of disease with whom we are naturally sympathetic. "These poor folks should have the freedom to choose whatever treatments they want," cry the quacks—with crocodile tears. They want us to overlook two things. First, no one wants to be cheated, especially in matters of life and health. Victims of disease do not demand quack treatments because they want to exercise their "rights," but because they have been deceived into thinking that they offer hope. Second, the laws against worthless nostrums are not directed against the victims of disease but at the promoters who attempt to exploit them.

Any threat to freedom strikes deeply into American cultural values. But we must also realize that complete freedom is appropriate only in a society in which everyone is perfectly trustworthy—and no such society exists. Experience has taught us that quackery can even lead people to poison themselves, their children, and their friends.

It is because of the vulnerability of the desperately ill that consumer protection laws have been passed. These laws simply require that products offered in the health marketplace be both safe and effective. If only safety were required, any substance that would not kill you on the spot could be hawked to the gullible.

Some people claim we have too much government regulation. But the issue should be one of quality, not quantity. We can always use good regulatory laws. Our opposition should

be toward bad regulations that stifle our economy or cramp our lifestyles unnecessarily. Consumer protection laws need to be preserved.

Unfortunately, some politicians seem oblivious to these basic principles and expound the "health freedom" concept as though they are doing their constituents a favor. In reality, "health freedom" constitutes a hunting license for quackery, with open season declared on the sick, the frightened, the alienated, and the desperate. It represents a return to the law of the jungle in which the strong feed upon the weak.

How to Avoid Being Tricked

The best way to avoid being tricked is to stay away from tricksters. Unfortunately, in health matters, this is no simple task. Quackery is not sold with a warning label. Moreover, the dividing line between what is quackery and what is not is by no means sharp. A product that is effective in one situation may be part of a quack scheme in another. (Quackery lies in the promise, not the product.) Practitioners who use effective methods may also use ineffective ones. For example, they may mix valuable advice to stop smoking with unsound advice to take vitamins. Even outright quacks may relieve some psychosomatic ailments with their reassuring manner.

This article illustrates how adept quacks are at selling themselves. Sad to say, in most contests between quacks and ordinary people, the quacks still are likely to win.

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Dr. Barrett, who practices psychiatry in Allentown, Pennsylvania, is a board member of the National Council Against Health Fraud. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

QUESTION BOX

Q. Some candy makers advertise that their candy bars provide "quick energy." Does sugar do this?

A. The sugar in candy is digested into glucose and fructose and absorbed quickly into the blood stream. This raises the blood glucose level, which provides some energy for a short time. However, the body responds by releasing insulin into the blood, which temporarily drops the glucose level below what it was before eating the high-sugar food. Thus, eating a sugary food or beverage right before a long workout can cause faster exhaustion, since the body has to use its energy reserves (glycogen) earlier than normally. There also is a lessened release of fat stores. These events can impair performance. The better food choice before a workout would be foods like bread, pasta, and starchy vegetables. These contain complex carbohydrates, which are slowly absorbed by the body and therefore have a steadier effect on blood sugar.

There is some evidence that consuming sugar during exercise helps people, such as marathon runners, who are exercising so strenuously and for so long that they risk running out of glycogen. In a workout lasting longer than 2 hours, consuming a sugary food or beverage during the workout may help postpone exhaustion.

THE NABISCO/KRAFT BOYCOTT: A CAMPAIGN FOR BETTER PUBLIC HEALTH

Joe B. Tye

Do you approve of cigarette companies using cartoon characters to encourage children to smoke? If you do, indulge yourself with a box of RJR Nabisco's Oreo cookies.

Should cigarette companies use professional athletes and sports imagery to promote smoking? If your answer is yes, buy Kraft cheese from Philip Morris.

Does it please you that cigarette companies influence children through movies? If so, stop reading. Kraft and Nabisco food products are for you.

But if you object to such unethical sales tactics, read on. There is something you can do about them.

Functions of Cigarette Advertising

For more than 60 years, cigarette advertising has served two main purposes: to attract new customers (mostly young ones) and to reassure worried adult smokers that they can be reasonably safe by choosing the right brand. From 1930 to the early 1950s, every major tobacco company used deceptive health claims in its advertising.

R.J. Reynolds (now part of RJR Nabisco) stated, "More Doctors Smoke Camels Than Any Other Brand." Other Reynolds' advertisements claimed positive health benefits like improved digestion, steady nerves, and enhanced athletic performance. Philip Morris scared millions of smokers into switching to its brand with headlines that screamed "Play Safe! An Ounce of Prevention is Worth a Pound of Cure" and "Eminent Medical Authorities Recommend Philip Morris." Other advertisements featured Lucille Ball and Desi Arnaz claiming that smoking Philip Morris prevented "cigarette hangover." (Ironically, both succumbed to the ultimate cigarette hangover: cancer.)

Today's themes are less blatant, but the message is still the same. R.J. Reynolds' message that "Now is Lowest" is intended to suggest safety. In reality, Now is no safer than any other brand.

"Low Smoke" Virginia Slims are an attempt by Philip Morris to reassure pregnant women and young mothers that smoke from their cigarettes will not harm their children. Unfortunately, some will be persuaded that "low-smoke" cigarettes are a reasonable alternative to quitting.

Children and teenagers have always been prime targets of cigarette advertising. R.J. Reynolds and other cigarette companies used to hire famous celebrities like John Wayne and Joe DiMaggio to push their cigarettes. Advertisements like the one calling Lucky Strike "The One to Start With" make it clear that the target was America's youth.

During the latter half of the 1980s, as adult smokers quit at an accelerating rate, tobacco companies began targeting potential "replacement smokers" with increased intensity. Between 1987 and 1988, the tobacco industry increased its promotional expenses by more than 25%. Most of the increase was devoted to campaigns targeting youth. In direct response, since 1987 teenage smoking has increased more than 10%.

The U.S. Congress has not merely refused to curb this deluge of deceptive advertising and public relations. It has actually worked to defend the tobacco industry against conscientious regulators. It is no coincidence that the tobacco lobby and its allies in the advertising business are among the largest contributors to political campaign funds and are generous in handing out "speaking fees" to politicians willing to vote their way.

The Nabisco/Kraft Boycott

When faced with government inaction, concerned citizens must take matters into their own hands. For this reason, STAT is organizing a nationwide boycott of Kraft and Nabisco products to force their parent corporations, Philip Morris and RJR Nabisco, to stop encouraging young people to use their deadly products. The boycott has five demands:

Demand #1: Stop Using Cartoon Characters to Promote Smoking

During the early sixties, RJR sponsored the Flintstones cartoon show. Ads featured Fred Flintstone and Barney Rubble sneaking out behind the house for a smoke when they were supposed to be doing housework. The appeal to rebellious adolescents was unmistakable.

Today, RJR Nabisco uses cartoon characters to push Camel and Magna cigarettes. These cartoons promote a self-indulgent and drug-using lifestyle that is attractive to many adolescents. It is no coincidence that a substantial proportion of increased sales of Camel cigarettes last year was among young people. Indeed, Camel's "smooth character" cartoon has enabled it to challenge Marlboro for supremacy on junior high and high school campuses.

Demand #2: Stop Using Athletic Imagery to Promote Smoking

The tobacco industry's own code of advertising ethics prohibits the display of athletes or others engaged in strenuous athletic activities. Yet RJR Nabisco and Philip Morris both routinely violate this provision, knowing that athletic imagery is a potent way to attract teenagers.

RJR Nabisco cigarette advertisements feature professional athletes engaged in daredevil stunts and other feats requiring great strength and stamina. Among them are skiers, windsurfers, aerobic dancers, stunt motorcycle riders, and mountain climbers. Philip Morris not only uses athletes to promote smoking but denies doing this. In a recent letter in the *Wall Street Journal*, a senior executive stated, "We don't have celebrities or athletes endorse cigarettes in our advertising." Meanwhile, 8-page Marlboro ads in *Sports Illustrated* and other magazines popular with teens featured two prominent racecar drivers who had won the Indianapolis 500.

The tobacco industry's own research has determined that a key reason that many young people refrain from smoking is fear of impairing their athletic performance. The prevalence of sports imagery in cigarette ads is an attempt to offset this and increase the number of adolescents who smoke.

This is also an important reason that tobacco companies spend so much money to sponsor athletic events. It not only associates smoking with athletic excellence, but also allows them to circumvent the ban on televised cigarette advertising.

Demand #3: Stop Subliminal Cigarette Advertising in Movies

Years ago, many people began smoking because they liked the "cool" image portrayed by Humphrey Bogart or other Hollywood stars. Today, cigarette companies are attempting to replicate this success by paying movie producers to feature their cigarettes in feature films, including many made for children.

Philip Morris paid the makers of *Superman II* more than \$40,000 to feature the Marlboro logo some two dozen times. Lois Lane, a nonsmoker in the comics, becomes a Marlboro chain-smoker in the movie. In one scene she tells a silently acquiescing Clark Kent that she will never get sick because she drinks orange juice, while a lighted Marlboro dangles from her lips. American Brands provided \$20,000 worth of Lucky Strike and Pall Mall cigarettes to the makers of *Beverly Hills Cop*. In one scene, star Eddie Murphy holds up a pack of Luckies and says, "These are very popular cigarettes with the children."

Other youth-oriented movies in which cigarette-makers engineered subtle pro-smoking messages are: *Who Framed Roger Rabbit* and *Honey, I Shrunk the Kids*, both from Walt Disney; *Supergirl*; *Days of Thunder*; *The Heavenly Kid*; and *Two of a Kind*.

Cigarette-makers get more for their money than just a brief glimpse of their brand. In most cases, movies with paid cigarette advertising also include one or more instances in which smoking is glamorized.

Demand #4: Stop Targeting Young Women

Cigarette-makers prey upon the psychological vulnerability of adolescent girls with ads that associate smoking with independence, popularity, and, above all, with being thin and attractive.

Hundreds of studies—including some funded by the tobacco industry—have proven that smoking by pregnant women is harmful to the fetus, and that smoking by young mothers can cause serious health problems in their children. Yet to this day, RJR Nabisco and Philip Morris claim that there is no reason for pregnant women and young mothers to stop smoking. As noted above, Philip Morris advertisements even suggest that young women can continue to smoke without harming their children.

Demand #5: Exported Cigarettes Should be Labeled with Health Warnings and have their Advertising Restricted

A major reason why cigarette advertisements were booted from U.S. television in 1971 was the vulnerability of children. In Japan and other countries, where broadcast cigarette advertising is still permitted, RJR Nabisco and Philip Morris target young teenagers with advertising that encourages them to smoke. Likewise, a major reason behind the toughening of health warnings was to discourage children from starting to smoke. But in many countries, children are not getting specific health warnings. In Japan, for example, the warning says only "For the sake of your health, please do not smoke too much."

Children in other countries should be no more exploitable than children in America. They deserve the same protection from the efforts of Philip Morris and RJR Nabisco to encourage smoking.

How You Can Help

There are four things you can do to oppose the effort to turn children into nicotine addicts:

- Stop buying products with the easy-to-recognize Nabisco and Kraft logos. If you have children, use this as a lesson in ethics. In the Tye family, our children, ages 7 and 10, tell all their schoolmates to shun Oreo cookies in the lunch line so they don't support the bad people who push cigarettes.
- Write to the chief executives of Nabisco and Kraft (with copies to STAT) informing them of your decision and asking for a response:

H. John Greeniaus
President and CEO
Nabisco Brands
100 DeForest Avenue
East Hanover, NJ 07936

Michael A. Miles
Chief Executive Officer
Kraft General Foods
120 Park Avenue
New York, NY 10017

- Ask organizations such as your hospital, school board, business and professional organizations, and religious institutions, to support the boycott effort. Groups concerned with the health, education, and welfare of our youth should certainly support this effort to eliminate the slick advertising that encourages young people to smoke. STAT is mounting a campaign to persuade hospitals to remove Nabisco and Kraft from their approved vendor lists. We can provide you with more detailed information about the unethical methods used by Philip Morris and RJR Nabisco to promote smoking.

• Join STAT (Stop Teenage Addiction to Tobacco), the nonprofit organization dedicated to protecting children from the tobacco industry. Members receive the *Tobacco and Youth Reporter*, the world's most widely read tobacco control publication, plus the satisfaction of belonging to a network that will save many lives.

Mr. Tye is President of STAT and chief operating officer of Baystate Medical Center, a large teaching hospital in Springfield, Massachusetts. For more information, contact: STAT, 121 Lyman Street, Suite 210, Springfield, MA, 01103 or telephone 413-732-7828. A free brochure, "Smoking: Guidelines for Teens," can be obtained by sending a stamped, self-addressed 4" x 9 1/4" envelope to Teen Smoking, Dept. C, American Academy of Pediatrics, P. O. Box 927, Elk Grove, IL 60009. Readers offended by cigarette ads in magazines can use subscription reply cards to protest.

BRIEFS

"Yeast" treatment debunked. In a double-blind trial, the antifungal drug nystatin did no better than a placebo in relieving systemic or psychological symptoms of "candidiasis hypersensitivity syndrome," a diagnosis considered "speculative and unproven" by the American Academy of Allergy and Immunology. Reprints of the report [N Engl J Med 1991;323:1717-1723] can be obtained from William E. Dismukes, M.D., Division of Infectious Diseases, Department of Medicine, University of Alabama Medical Center, Birmingham, AL 35294.

Suit filed to undercut FDA enforcement. The Dietary Supplement Coalition is seeking a court order to declare coenzyme Q10 a food, not a food additive. The purpose of the suit is to stop the FDA from banning the sale of "food supplements" as unsafe food additives. The coalition was formed in 1989 in response to FDA seizures of mineral orotates, evening primrose oil, germanium, superoxide dismutase, coenzyme Q10, and several other substances marketed as "supplements" but widely promoted with illegal therapeutic claims [NF 6:16]. *Editor's note: DSC hopes to enable manufacturers to market a wide variety of substances as "foods" as long as no illegal claims are traceable to them. Of course, such claims still will be made "independently" through books, magazine articles, talk shows, and retail outlets, so that potential customers can learn the products' intended uses.*

Health food retailers uneasy? *Health Foods Business* reports that health food store owners have developed "increased fear—even paranoia" about their right to provide advice to their customers. Retailers interviewed by the magazine's editor said they still give nutritional advice but are more careful about how they present information and how they present themselves.

Infant formula price-fixing? The Federal Trade Commission is investigating charges by maternal and child health advocates and WIC program directors that formula manufacturers have illegally fixed infant formula prices. The WIC program, which helps low-income and postpartum women, infants, and children younger than age 5 with clinical evidence of nutritional needs, is the nation's largest purchaser of infant formula—spending an estimated \$660 million in 1990 on bottle-feeding. According to an article in *Medical World News*, WIC program leaders have complained since the early 1980s that high formula costs siphon off funds that would otherwise provide specially chosen foods to larger numbers of malnourished women and children. USDA officials estimate that cost-containment mechanisms legislated 3 years ago enabled the states to negotiate price cuts that saved taxpayers \$293 million in fiscal 1989 and \$500 million in fiscal 1990. The American Academy of Pediatrics (AAP) opposes direct formula advertising to consumers as part of its efforts to promote breast-feeding. Since the FTC believes that high prices and lack of advertising often go hand in hand, the agency is investigating whether this policy represents a conflict of interest because some of AAP's members who profit from selling infant formula products to their patients. *Editor's note: The FTC can't seem to grasp the idea that health professional groups that oppose various types of advertising are motivated by a desire to protect consumers from being misled.*

Major report endorses fluoridation. The U.S. Department of Health and Human Services has released *Review of Fluoride Benefits and Risks*, a comprehensive evaluation of the public health benefits and risks of fluorides from drinking water and other dietary and dental product sources. The report—more than 200 pages long—was drafted by a Public Health Service subcommittee chaired by former FDA Commissioner Frank W. Young, M.D., Ph.D. The review was prompted by an experiment that found bone cancer among certain rodents that were fed high doses of fluorides [NF 7:15]. The review concluded that the study and another long-range animal study "fail to establish an association between fluoride and cancer." Copies (limited quantities) are available from Dental Disease Prevention Activity, Center for Preventive Services, Centers for Disease Control, Atlanta, GA 30333 (Telephone: 404-639-1830).

Bizarre lawsuit withdrawn. In September 1990, 40 dentists filed a class action suit in an Ohio federal court, charging the American Dental Association (ADA) with "breach of contract" and "fraudulent misrepresentation." According to the suit papers, the Association had acted improperly by insisting that fluoridation and mercury-amalgam ("silver") fillings are safe. The ADA replied that the plaintiffs had failed to state a legitimate cause of action and that, since the ADA is based in Chicago, the Ohio court lacked jurisdiction. In December the suit was withdrawn, but it may be filed again in Chicago. One of the plaintiffs was Hal Huggins, D.D.S., the leading anti-amalgamist. John Yiamouyiannis, Ph.D., the leading antifluoridationist, helped finance the suit and acted as the group's spokesperson.

Warning labels ordered for raw milk. The California Department of Health Services has issued emergency regulations requiring all raw milk products to carry the warning: "Raw (unpasteurized) dairy products may contain disease-producing bacteria and other micro-organisms. Persons at highest risk of disease from these organisms include newborns and infants; the elderly; pregnant women; those taking corticosteroids, antibiotics, or antacids; and those having chronic illnesses or other conditions that impair their immunity." In October 1990, the producing herds were quarantined after showing signs of infection with brucellosis, salmonellosis, and listeriosis.

Elderly volunteers wanted for cholesterol study. Four hundred men and women are being sought for the Cholesterol Reduction Program in Seniors (CRISP), sponsored by the the National Heart, Lung, and Blood Institute. The study is intended to produce scientifically based recommendations for assessing and dealing with elevated cholesterol levels in the elderly. Participants must be 65 years of age or older, have a cholesterol level above 239, have no history of heart disease or stroke within the previous 3 months, and be able to visit one of the five university-based participating clinics regularly. Volunteers should contact: John R. Crouse, M.D., Winston-Salem (919-748-6703); Donald B. Hunninghake, M.D., Minneapolis (612-625-4447); William B. Applegate, M.D., Memphis (901-577-8400); Robert H. Knopp, M.D., Seattle (206-223-3376); or John C. LaRosa, M.D., Washington, D.C. (202-676-5150).

NUTRITION

Forum

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THE FAIM SYMPOSIUM A "COMPLEMENTARY MEDICINE" SMORGASBORD

Jack Raso, M.S., R.D.

The Foundation for the Advancement of Innovative Medicine (FAIM) defines innovative medicine as "a treatment or therapy of empirical benefit that is yet outside the mainstream of conventional medicine." Headquartered in Kinderhook, New York, the group was formed in 1986 and incorporated in 1987. A separate FAIM Educational Fund (FAIM ED) was incorporated this year. According to a recent brochure:

FAIM's mission is to secure free choice in health care. Our first goal is the development of a membership to serve as both a forum for exchange and a constituency for change. The second goal is to secure the freedom of physicians to offer innovative therapies. The third goal is guaranteed reimbursement for the patients. . . .

The mission of FAIM ED is to educate both those within the field and the general public as to the benefits and issues of innovative medicine. This activity includes the collection of statistical data and research of value to practitioners and patients alike.

During the past year, articles in FAIM's quarterly newsletter (*Innovation*) have promoted "alternative" cancer therapies, chelation therapy, homeopathy, shark cartilage (for arthritis and protection against tumor growth), and an oral bacterial preparation for chronic fatigue syndrome. One article provides strategies for suing in small claims court when insurance companies fail to cover "complementary" treatment. Other articles blast fluoridation, mercury-amalgam fillings, and sugar (for supposedly causing digestive troubles). A recent flyer urges members to ask their state legislators to support a bill to ensure that "unconventional" practitioners participate in the judging of practitioners accused of professional misconduct.

FAIM's board of trustees is composed of eight medical doctors and one dentist, all of whom practice within New York State. The board's president (and a FAIM co-founder) is Robert C. Atkins, M.D., author of *Dr. Atkins' Diet Revolution* (1971), *Dr. Atkins' Superenergy Diet* (1977), *Dr. Atkins' Nutrition Breakthrough* (1981), and *Dr. Atkins' Health Revolution* (1988).

Atkins appears to favor empiricism and clinical experience over reason and scientific analysis. In the news release promoting the latest of these books, he states that "there is only one disease which is called imbalance, and it is combated by the restoration of balance, which is another word for health." He claims that "nutrition has been useful in just about every condition I have treated. . . . And there are probably herbal answers for every condition for which there is a pharmacological answer." He also claims it is difficult or impossible to conduct double-blind tests of the "alternative" methods he espouses.

Atkins founded and directs The Atkins Centers for Complementary Medicine in New York City. He also publishes *The Atkins Health Letter* and hosts "Design for Living," a nightly radio talk show on WOR. (The former host of the program was the late Carlton Fredericks, who performed "nutritional consultations" costing \$200 at Atkins' offices.) In an interview in the March 1991 *Swanson's Health Shopper*, Atkins defined complementary medicine as a synthesis of orthodox and "alternative" medicine "put together . . . to integrate the best of both." The services under his auspices include acupuncture, chiropractic, homeopathy, bioenergetics, clinical ecology, chelations, ozone therapy, neurolinguistic programming, ultraviolet blood irradiation, and "an assortment of unclassified techniques."

Each year, FAIM sponsors several symposia featuring prominent practitioners of "innovative medicine." On January 26 and 27 I attended the first of this year's series at the New York Penta Hotel, across the street from Madison Square Garden. About 500 people attended the two Saturday sessions and about 400 attended the single Sunday session. Virtually all were white and appeared older than 40.

The Exhibitors

As I entered the 18th-floor hall, I noted a coffee urn containing an herbal tea marketed by Sunrider International, one of about 17 companies with booths in the back of the hall. At the Sunrider booth, I paid \$2 for a *SunBar*, a 1½-ounce "herb

food" candy bar containing water lily bulb, Chinese asparagus root, and several other exotic ingredients. The product tasted medicinal and was so hard and adhesive that I feared it might loosen my mercury-amalgam fillings. As I chewed apprehensively, the Sunrider salesman introduced me to another distributor—said to be a registered dietitian with a master's degree in nutrition—who expressed antipathy toward double-blind studies.

Other exhibitors at the symposium included:

- *The Atkins Centers for Complementary Medicine*, which markets "Dr. Atkins' Targeted Nutrition Program." This is a supplement program in which "building blocks" are added to a "basic formula" to "help the body to create its own cures." The 17 "building blocks" include *Cardiovascular Formula*, *Heart Rhythm Formula*, *Hypoglycemia Formula*, *Anti-Arthritic Formula*, and *Urinary Frequency Formula*. A brochure states that the formulas have evolved from 25 years of Dr. Atkins' experience in using nutrition to treat more than 40,000 patients.

- *Boericke & Tafel, Inc.*, Santa Rosa, CA, said to be "America's oldest homeopathic pharmaceutical firm." Its *Alfalfa Tonic* was promoted at the meeting "for symptomatic relief of insomnia and nervous stress."

- *Great Smokies Diagnostic Laboratory*, Asheville, NC, a laboratory that performs a variety of nonstandard tests. Its flyer invites patients to ask their doctor about the laboratory's Comprehensive Digestive Stool Analysis. "Discover How Much Valuable Information Lies Hidden in Your Stool Sample!" the flyer states. "The CDSA now detects levels of Short Chain Fatty Acids. Low levels of some of these may be associated with increased risk of colon cancer and ulcerative colitis."

- *Health from the Sun*, Newton Upper Falls, MA, which markets Sanhelios herb products, including *Circu Caps*, *Prosta Caps*, *Circu Balm*, *Kalm Caps*, and *The 3-Day Diet* ("a 'near fast' diet for losing 7 to 10 pounds in 3 days").

- *Huggins Diagnostic Center*, Colorado Springs, CO, "the leader in diagnosing and treating patients who suffer from mercury toxicity due to dental amalgam," according to a brochure. The brochure recommends hair analysis (to detect supposed mercury toxicity) and sequential removal of mercury-amalgam fillings, and advertises electrolyte replacement beverages including "Jungle Juice" and "Jogger Colada." A flyer available at the booth states in bold red letters: "You wouldn't take your child's temperature with a leaky thermometer."

- *Klabin Marketing*, New York City, NY. Pushing *Aloe-Ace*, aloe vera juice from organically grown aloe vera leaves, complete with sap and rind.

- *Natren, Inc.*, North Hollywood, CA. Featuring *Bulgareicum I.B.*, a *Lactobacillus bulgaricus* culture that allegedly "aids in the production of white blood cells" and "activates the immune system."

- *Ocean Health Products*, which distributed flyers suggesting that shark cartilage is effective against cancer, diabetic retinopathy, osteoarthritis, psoriasis, and various other conditions. A flyer written by FAIM board member Ronald Hoffman, M.D., states: "Although there have been no clinical test performed, several doctors and chiropractors have noticed that when used regularly, shark cartilage seems to reduce the incidence of muscle pulls, inflamed joints, and stiffness due to injury."

- *Tachyon International*, Fort Lee, NJ, which markets *Tachyon Cells* and *Tachyon Water*—"Phenomena of the 90's

New From Japan!!" According to its flyer, the tachyon is a newly discovered form of energy that "possesses a nature which goes beyond the conventional terms of physics" and is equivalent to "chi" or "ki" in the Orient. The flyer also states that the Tachyon Research Association has succeeded in extracting the tachyon, charging various substances with it, and turning them to practical use. *Tachyon Cells* are used by taping them to the skin. The flyer quotes testimonials asserting that the cells are effective for wrenched, frozen, or painful shoulders, swollen knees, and "abnormal coldness."

The Speakers

Before the "festivities" began, I took a front seat. To my left sat a pathologically obese man whose name badge indicated he was a dentist and whose behavior suggested narcolepsy. On my right an elderly woman eyed my note-taking suspiciously while she gabbed about root canals, Atkins' radio program, and a turkey sandwich she had bought at a GNC store that morning.

On both days, the symposium program kicked off with a brief welcome from Atkins, whom FAIM's executive director and lobbyist Monica Miller introduced as "our guiding light." Atkins, who looks overweight, opined that "freedom of choice" in matters of health should be a major political issue. "When we get our potentially terminal illness, or when we get an illness which is going to be able to debilitate us," he said, "this is where we need to be able to make that intelligent choice. Now, the reason that we don't have freedom of choice is that there are too many people in our country that don't even perceive that there are other choices." He ascribed this "lack of awareness" to the media's and politicians' reliance on physicians "connected with some trade organization such as the American Medical Association."

FAIM, he said, "may be growing at a rate so rapidly that it will become the predominant organization in the country for the principle of freedom of choice." He then complained about pressure placed on the nutritional supplement industry and about FDA "Gestapo raids" to enforce labeling laws.

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Atkins related the story of a 53-year-old man with lung cancer who had recently gone to Memorial Sloan-Kettering Hospital, where he had been offered only one mode of therapy: radiation. Subsequently, said Atkins, he had offered the man at least 20 treatment options, "all from the field of complementary medicine, all of them using a different model." The next day, Atkins said, the man "looked like he was cured."

Atkins did not say whether he had treated the patient, but he implied that the patient's improved appearance had resulted from introducing hope and a consequent change in attitude. The aim of cancer therapy, Atkins suggested, should be to "just treat the underlying condition—the terrain." He then said that perhaps a "new medical science called 'terrainology' . . . should be our new banner."

Atkins then exhorted the attendees to scout and recruit new members, estimating FAIM's current membership at 1,600. "I'm looking for 10,000 by the end of 1991. I want to show that growth pattern to the politicians. I want . . . people [to] recognize that here is a political force . . . to be reckoned with." He solicited volunteers for a membership expansion committee.

The first talk, on "Women's Health," was delivered by macrobiotics aficionado turned eclecticist Christiane Northrup, M.D., a clinical assistant professor of obstetrics and gynecology at the University of Vermont, immediate past-president of the American Holistic Medical Association, and co-founder and director of "Women to Women," a women's health care center in Yarmouth, Maine.

Northrup alluded to studies "now showing that mind is the result of consciousness" and that "consciousness creates the body." She described the immune system as "a liquid mind . . . affected by everything colors, light, vitamins, brown rice." She advised us to think of ourselves as holograms.

Health is "not just about food," she emphasized. "I tell people if they're going to have a prime rib, get a massage; maybe it'll cancel it out." Later she said: "When you have emotions that remain locked in your body, which you do not feel, your need for vitamins is increased."

"Men's and women's physical energy is completely different," she asserted, likening male energy to "heaven's force" and female energy to "earth's energy coming upward . . . into the vagina." She also said that the "chakras" correspond to the major endocrine organs. (In yoga philosophy, the chakras are the seven centers of spiritual energy in the human body.) "The uterus is in the second chakra," she told us, which is "symbolic of relationships, creativity, and security."

Northrup attributed the high incidence of breast cancer in Maine to insufficient sunlight, and fibroid uterus and endometriosis partly to "blocked energy in the pelvis." She stated that "therapeutic touch" accompanies the endometrial biopsies she performs. PMS often recurs, she asserted, if women don't "get in touch with what their mission is here on the planet."

Atkins introduced the next speaker, Harvey Bigelsen, M.D., as "the first professor of terrainology . . . politically, a most important figure to us . . . the man who single-handedly got the first significant bill enabling M.D.'s who had another approach to have the protection of homeopathic boards [in] Arizona, the most conservative state in the country." Bigelsen is the director of the Center for Progressive Medicine in Phoenix, Arizona.

Bigelsen, thin and ponytailed, described himself as a "trained ophthalmologist" who has been in the field of "holistic" medicine for 15 years. "Traditional medicine made no sense to me whatsoever. . . . There was no known reason for disease. . . . There's no rhyme or reason whatsoever to disease. . . . The treatment for the cause and the cure of chronic disease is a 100% failure. . . . That frustrates me. I'm a scientist."

Bigelsen said that thanks to the above-mentioned bill, he has been "allowed . . . to do things that other places couldn't do. . . . My work can be done in the open completely. For the past 10 years, I've been on television out in Arizona, and the establishment cannot do anything about it."

Among other things, he claimed that the length of time an unstained drop of blood can "live" on a microscope slide is an indication of the health of the patient from whom it was drawn. He said his basic philosophy is that "there is a harmony in this universe."

Bigelsen stated that we all harbor the "spore form" of cancer in 20% of our cells. "Twenty percent is fine." But cancer, he said, is on the increase "because of the tremendous pollution of the . . . internal terrain of the body." He expressed beliefs that cancer is contagious and "transferable." Cancer is a mold, he said, and is not spread via the bloodstream or lymphatic system. "I am treating approximately 40 to 60% of my patients for cancer now that don't even know it. They will have it in 5 to 10 years if I don't fix them now." He also stated that HIV is not "necessarily" the cause of AIDS but is an "inhabitant" of the disease.

Next, Atkins introduced Mark Anderson, coauthor of *Empty Harvest*, as "the authority on the subject of what has gone wrong with our planet." Anderson's lecture was titled "How Agricultural Practices Rob You of Health."

"What we have in today's world," he lamented, "is a health-disease paradigm built upon a pharmaceutical-chemical approach [from] which nutritional concepts can't get out. Nutritional insights and understanding find a difficulty in being expressed."

Anderson likened white bread to money without precious metal backing. "This discussion on nutrition gives one the impression that the whole issue can be settled by making the right choices in the supermarket. And it ain't so. I don't care how informed you are. . . . The laws of the universe say you can't make something out of nothing."

He produced a soil sample. "Soil is what makes human

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beings healthy, because soil is what makes plants healthy. Plants don't grow in supermarkets." He called modern farming "the art of killing."

"If the food was organically grown, it's not the fact that it lacks pesticides that's so important. It's the fact that the food survived without pesticides. That means the farmer had to invest his skills, time, and money into regenerating, revitalizing, the basis of plant growth—soil, not oil."

"Whatever happens anywhere," he said, "happens everywhere, eventually. . . . This is the global consciousness of personal health, that my health is inexorably linked to what is happening as the forests of Tibet are cut down." He pronounced vitamins "the greatest health discovery of the 20th century," because they "finally proved that there was a cause of health."

Having referred earlier to Bigelsen's description of cancer as a mold, Anderson stated that fungi living in the human body yield "nature's verdict upon the quality of health of our tissue. If it is hungry, starved, and diseased, it deserves to be attacked."

"Bacteria and fungus are not the enemy. They are just showing us that we are deficient. Consequently, they are cleaning us out, removing the dying, weak, necrotic tissue. This is the great failure of the germ theory of medicine."

"Artificial chemical fertilizers," Anderson concluded, "are the great seduction of the 20th century that have led to the ruination of the human species."

Hal Huggins, D.D.S., lectured on "Amalgams and Root Canals." He stated that if "negative-current" fillings are removed first, the patient gets better, but if "positive-current" fillings are removed first, the patient gets worse, "and the reason for that is so obvious, I'm not going to bother to go into it with you."

Huggins said that dental diseases include "the incurables and the unexplained" such as chest pains, depression, and suicidal thoughts. For "calcium imbalances," he said he prescribes not calcium supplementation but massage therapy.

He stated he has two psychologists on his staff who are very important because "when you take out the fillings, you start releasing people's emotional problems." Suicide, he declared, "is such a big part of the amalgam issue." He also said that root canals are dangerous and that he has seen dramatic changes in people whose teeth containing root canals had been removed. He said he couldn't explain their improvement but that acupuncture meridians might be involved.

Atkins stated that he had chosen the next speaker—Michael Weiner, Ph.D., author of 15 books, including *Weiner's Herbal* (1982)—because "herbal medicine is every bit as important as nutritional medicine as one of the cornerstones of complementary medicine." He said Weiner's doctorate was in "Nutritional Ethnomedicine." The University of California at Berkeley awarded it, he added. "And when they found out what he did with it, they decided they were never going to issue another one. Because what he did with it was create an herbal revolution." Like Atkins, Weiner hosts a radio talk show ("Dr. Weiner's Herb and Nutrition Hour") on WOR. He also is "director of scientific affairs" for Nature's Herbs, of Orem, Utah, which sponsors the program.

Weiner told us: "Much of what you have learned to incorporate in your life is already in the scientific literature. It is just not promulgated by your healer, in general."

"Trial and error," he said, "is an incredible system,

because if [a substance] works, it tends to be used over and over again. If it kills the patient, it's not used any more. . . . I wish some of the people using chemotherapeutic agents used trial and error." The audience applauded.

Later he stated: "I've been using vitamins since I got converted to vitaminology 20 years ago by many leaders in the field, most of whom are in this room, and of course my granddaddy Linus Pauling. And I've always taken megadoses of many nutrients, particularly vitamin C. But about 3 weeks ago, I—Father Earth himself—got sick. Isn't that terrible." He said that when vitamin therapy had proved ineffective, he had panicked slightly. But taking one capsule of a particular herb had made his flu disappear instantly.

Let's Live columnist Jonathan Wright, M.D., then shared his "Pearls from a Complementary Physician's Notebook" and recommended *The National Enquirer* as a source of medical information. He appeared short of breath throughout his talk.

"One of the things that we like to know about if we happen to have a cancer and we're undergoing any sort of a treatment is, how am I doing. Of course, those of us who are in deep touch with our bodies might be able to tell that without any sort of a test" and might be "in touch enough not to get cancer in the first place."

"There's an old principle in nutritional and orthomolecular medicine," he said, "namely: if you think a nutrient ought to work . . . and it isn't working . . . before you give it up, inject the stuff."

After Wright finished, Atkins praised him for being open-minded, dedicated, and original.

The Saturday afternoon session concluded with a panel discussion, moderated by Michael Schachter, M.D., a FAIM trustee who is a laetrile enthusiast. When a woman asked Dr. Weiner if one can overdose on herbs, he replied that trial and error is "the only common sense approach because we are going into areas that do not have . . . extensive documentation."

Schachter asked Bigelsen what kinds of "therapeutic maneuvers" he uses in treating his patients. Bigelsen responded (quite unholistically): "I treat the blood, not necessarily the patient." His offerings include the introduction of "debrising germs" into the blood stream, injections of lactic acid to stimulate metabolism, "fetal cell therapy," and "scar therapy," which includes injections into circumcision scars. "You gotta get the pollution out of the body," he explained.

A question regarding the diagnosis of "mercury toxicity" was put to Dr. Huggins. "If the urinary excretion of mercury is very low," Huggins replied, "then we figure the patient has 'retention toxicity.' That is, they're retaining the mercury. If the hair [analysis] shows very low levels of mercury, then this also [indicates] retention toxicity. . . . The low levels of mercury are the ones that scare me a lot more than the high levels." Later he said: "The only time we really recommend removing of amalgams is for people who are interested in their health."

"Once you have gotten the satisfaction of seeing your patients get well," Atkins said in his welcoming address at the Sunday session, "you can't go back to an inferior brand of medicine, which is my name for conventional medicine. I hate to say it, but conventional medicine just doesn't measure up."

Pat McGrady, Jr. was the first lecturer on Sunday. His talk was titled "The Cancer Patient's Right to Live." Atkins said that McGrady "has the broadest fund of knowledge about alternatives which are available to the cancer patient . . . than

any person I've ever encountered." He described McGrady as a best-selling author and operator of a "referral service" for cancer patients.

"If you've played any role in [a] personal war against cancer," McGrady said, "you know that the cancer patient has two enemies: the disease itself and those who exploit this war for their own gain. And the latter may be a more formidable enemy than the former." The cancer patient's enemies, he said, include "do-good" societies, the FDA, the National Cancer Institute, and the American Medical Association. "There is no substitute for freedom of medical choice. It's as important as religion or speech," McGrady declared. "We *should* try to eliminate quackery, but most of it is government-sponsored." He even claimed that new and experimental methods within orthodox medicine have no track record and are unlikely to develop any.

McGrady said he is employed by clients to find therapies that "offer them a chance of extending their survival and improving their quality of life." He stated he talks to 2,000 cancer patients annually. He advised: "Stay away from the quacks in general, but if your kid has a brain cancer, send him to one." With respect to cancer surgery, he pronounced: "The ultimate twitches of the scalpel often produce a grotesque mutilation making a human being almost unrecognizable as such. Many doctors never learn."

Next, during a time slot designated "New Health Products," several exhibitors came forward and hawked wares promoted in the lectures. Kunio Yanagida, a Japanese man representing Tachyon International, said that tachyon energy can be extracted from the atmosphere with a "special device" and used to: power cars, motorcycles, and electric shavers; recharge batteries; turn regular cigarettes into "light" versions; and improve athletic performance.

William Philpott, M.D., a proponent of "magnetic field therapy," was the symposium's last speaker. Atkins introduced

him as "a physician with a nationwide constituency." Philpott said he had practiced medicine for 40 years before retiring in May 1989. He stated he had had a fundamentalist Christian upbringing, had majored in theology, and apparently had been destined to be a preacher.

Philpott said that 70% of people's energy comes from food and that most of the rest comes from the earth's magnetic field. He added that "tachyon energy," which he defined as "gravitational energy," is a "very important" source of energy. He then said that we can "accentuate" the magnetic field through which our blood flows, and thus have "more energy," by following a practice he maintains daily: keeping a magnet in a pocket over the heart. He also recommended sleeping with magnets at the top of the head.

Innovation or Nonsense?

Drs. Petr Skrabanek and James McCormick write in *Follies and Fallacies in Medicine* [Prometheus Books, 1990]:

The claims of systems of alternative medicine all have two things in common. They have no detectable or coherent *raison d'être* other than the enthusiasm of their advocates and, almost without exception, they claim to cure or alleviate a very large number of ill-defined and quite disparate ills.

True scientists regard innovation as a potential springboard for studies that can lead to proof, disproof, or alternate hypotheses. FAIM is using it as a political catchword.

Mr. Raso is Assistant Chief Dietitian at Wyckoff Heights Medical Center in Brooklyn, New York. [Editor's note: The Foundation for Innovative Medicine, an unrelated group with a similar name, is discussed in the question box on page 22.]

BRIEFS

Correction: MR FIT findings. The 10-year follow-up figures comparing the special intervention (SI) and usual care (UC) groups in the Multiple Risk Factor Intervention Trial were reversed in our table on page 8 of the January 1991 issue. The table should have shown that the special intervention group achieved lower blood cholesterol levels and had fewer smokers:

	Baseline		10-year follow-up	
	SI	UC	SI	UC
Cigarette smoking	64%	63%	32%	45%
Blood cholesterol	240	240	228	233

"Overweight rights" verdict overturned. The U.S. Supreme Court has overturned a \$44,000 award to a Sharon L. Russell, who in 1985 was dismissed in from a Rhode Island college nursing program for being too fat. The ruling did not address the merits of the case but returned it on technical grounds to a federal appeals court for further consideration.

Anthology updated. The Dushkin Publishing Group, Sluice Dock, Guilford, CT 06437, has published *Nutrition 91/92*, its fourth annual sourcebook of nutrition articles. Edited by Charlotte Cooke-Fuller, Ph.D., of Towson State University, with help from Dr. Stephen Barrett, the book contains 66 significant articles from newspapers, magazines, newsletters and scientific journals. Single copies are available for \$10.95 plus \$2/order for postage from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

Dental health confusion. A survey of 1,000 adults has found widespread public ignorance about fluoridation and amalgam safety. When asked, "Do you want your drinking water fluoridated, the responses were: yes, 52%; no, 28%; and don't know, 20%. When asked "Do you think people should have any concerns at all that they might develop any health problems from silver fillings in their teeth, the responses were yes, 48%; no, 37%; and don't know, 15%. The survey, conducted in March 1991, was commissioned by the American Dental Association.

Cholesterol-lowering factor in oats identified. A controlled experiment suggests that the water-soluble fiber *β*-glucan is responsible for the cholesterol-lowering effect of oat products [JAMA 265:1833-1839, 1991]. Six groups of about 20 volunteers following a NCEP Step 1 diet (30% or fewer calories from fat) were given either oat bran or oat cereal at daily doses of 1, 2, or 3 ounces (dry weight) for 6 weeks, while a seventh group received 1 ounce/day of farina, which contains no *β*-glucan. (A cup of dry oatmeal contains 3 ounces.) The groups eating 2 or 3 ounces of oat bran or 3 ounces of oatmeal had the best results. Reprints of the study are available from Michael H. Davidson, 800 S. Wells St., Suite M-25, Chicago, IL 60607. Another study obtained significant results in adults consuming 2 ounces of dry oats during an 8-week period [Am J Public Health 81:183-188, 1991].

Inositol used by drug abusers? Some health food store retailers say they have stopped selling inositol powder because most of it is used to cut cocaine and methamphetamines.

QUESTION BOX

Q. What is a "nutraceutical"?

A. Stephen Felice, M.D., board chairman of the Foundation for Innovative Medicine, coined the term to encompass "nutritional products with disease-related benefits—from diets, dietary supplements and isolated natural substances to genetically engineered designer foods." During the past year, the Foundation's programs have included scientists, attorneys, and health food industry representatives.

Federal laws require proof of safety and effectiveness before products can be marketed with health claims. The FDA's recently proposed regulations for general food labeling will disallow health claims except for a few situations where they are well supported by scientific evidence. According to Dr. Felice, these regulations are "ignoring the importance of nutritional supplements and the potential for significant medical and scientific advances." Current laws provide little or no incentive for industry-sponsored research on foods or food supplements that cannot be patented. He would like the approval process changed so that it is less expensive and permits companies to gain exclusive rights to market products when their research demonstrates health benefits. He also would like a commission to be established to "bring nutraceuticals into the mainstream of the food and research-based pharmaceutical industries."

Felice established the Foundation in 1976. From 1986 through 1989, Dr. Felice wrote a column called "Nature and Medicine" for the trade magazine *Health Foods Business*. He also serves as a consultant to the pharmaceutical and health food industries. [Editor's note: It is not clear to me whether Dr. Felice's proposed changes would benefit the public or weaken consumer protection against claims for supplements based on flimsy evidence.]

Health food store sales. *Health Foods Business* estimates that 41% of sales in health food stores last year were for vitamins and other supplements. Based on its annual survey, the magazine estimated that 7,300 stores grossed \$1.545 billion for these products, down 2% from 1989. Total sales were \$3.776 billion (down 7%), including \$487 million for herbs and herbal teas (down 9%) and \$94.2 million for books (up 13%). Stores with under 3,000 square feet of selling space averaged \$305,457, while those over 3,000 square feet averaged \$1,855,246. Homeopathic remedies accounted for \$86.5 million (5.6%) of the "vitamins/supplements" category.

Health information for travelers. Immunization, prevention of food- and water-borne diseases, and many other practical topics are covered thoroughly in *Health Information for Travelers*, a 164-page booklet updated yearly by the U.S. Centers for Disease Control. Copies are \$5 from the Supt. of Documents, U.S. Govt. Printing Office, Washington, DC 20402.

Gulf war casualties. According to an article in *American Medical News*, "the biggest threat to U.S. forces during Operation Desert Storm was not enemy fire, but food poisoning." More than 600 members of one tactical air wing were stricken with botulism, and other units had serious salmonella outbreaks. Throughout history, more soldiers have succumbed to the effects of food poisoning and water-borne illness than to the ravages of weaponry.

Backhauling attacked. The Sanitary Food Transportation Act has been passed to curb the dangers of "backhauling," where refrigerated trucks or other vehicles are used to haul chemicals or garbage on one trip and food products on the return trip [NF 6:39, 1989]. The U.S. Department of Transportation is now required to issue regulations that establish cleaning and decontamination procedures and restrict the hauling of dangerous products in vehicles used to haul food.

Weight-loss guidelines. A task force working through the Michigan Health Council has developed weight-loss program guidelines that have been endorsed by 45 health-care organizations in the state. Their published report, *Toward Safe Weight Loss: Recommendations for Adult Weight Loss Programs*, can be obtained free from the Center for Health Promotion, Michigan Dept. of Public Health, Box 30195, Lansing, MI 48909.

Food additives booklet. The FDA, in cooperation with the International Food Information Council, has published a booklet describing the role of additives and the federal regulations governing their use. Professionals can obtain copies by writing to "Food Additives," P.O. Box 1144, Rockville, MD 20850.

Notable quote: "... Consumer fraud experts issue this warning: Watch out for dentists who urge you to put up more green to get rid of your silver. ... If you already have silver fillings and are concerned about a medical disorder, by all means see a physician, not a dentist. So get your symptoms checked out—rather than your fillings yanked out."—*Prevention*, April 1991 (an article triggered by *60 Minutes'* unconscionable attack on mercury-amalgam fillings). *Consumer Reports* published a similarly supportive article in its May issue.

Mercury-amalgam news. The FDA has issued a Talk Paper stating that patients should not ask dentists to remove their amalgam fillings. The statement was issued after a panel of

medical and dental experts concluded that no hazard has been demonstrated. In March, a bill to ban the use of mercury in fillings in New Mexico was defeated in committee.

GINKGO EXTRACT: MIRACLE OR ?

Varro E. Tyler, Ph.D.

Ginkgo has been valued in China for its medicinal properties since 2800 B.C., but it is only in the last 20 years that the leaves of this living fossil have been extensively used in Western medicine. The ginkgo tree (*Ginkgo biloba* L.) is truly a relic of the past. Having survived unchanged in China for some 200 million years, it was brought to Europe in 1730 and is now a popular ornamental in parks and gardens everywhere. Because of its toughness, it even thrives along the busy streets in some of our major cities.

Unlike many of the herbs in use today, ginkgo leaves are not used so much in their crude state as in the form of a concentrated standardized extract. In fact, in the past few years physicians in Germany have written more prescriptions for ginkgo extract than for any other drug. During 1988 they wrote 5.24 million prescriptions for just two ginkgo products, Tebonin, manufactured by the Willmar Schwabe Company in Karlsruhe, and rökän, made by Intersan, a subsidiary in Ettlingen.

These preparations are produced from green-picked leaves that are dried, milled, and extracted with an acetone-water mixture under partial vacuum. After the organic solvent is eliminated, the extract is processed, dried in a microwave oven, and standardized. The final product is adjusted to a potency of 24% flavonoids (mostly flavonoid glycosides and quercetin) and 6% terpenes (principally a unique group of diterpenes known as ginkgolides). Marketed in both solid and liquid form, the tablets or capsules contain 40 mg of the extract each. Similar products are sold over the counter in health food stores in the United States under the trade names *Ginkgold* (Nature's Way, Springville, UT), *Ginkgo-Power* (Nature's Herbs, Orem, UT), *Ginkgo Biloba* (Indiana Botanic Gardens, Hammond, IN), and several others. *Ginkgold* is the American name of the standardized Schwabe product, which has been subjected to extensive pharmacologic and clinical testing in Europe.

Although ginkgo extract is reputed to have a number of beneficial effects on the circulatory system and as an antiasthmatic, the ailment that is probably responsible for most of its widespread popularity is that of decreased cerebral blood flow, particularly in geriatric patients. The various conditions associated with such vascular insufficiency, ranging from short-term memory loss, headache, tinnitus, and depression to outright senility, are purported to be amenable to ginkgo therapy. An impressively bulky body of literature—including two volumes totalling 1,715 pages containing 167 papers by hundreds of scientists—has been published on the various chemical and biologic aspects of the ginkgolides. In addition, some 300 clinical and pharmacologic studies attest to the extract's ability to cause vasodilation and improved blood flow both in the arteries and capillary vessels. Indications also exist that ginkgo extract has useful properties as a free-radical scavenger. Large doses of the extract are required, especially in serious cases, which explains why a concentrate is used rather than the herb itself.

Despite the apparent success of ginkgo as a treatment for peripheral vascular and organic brain syndromes in elderly people, the drug has not been without its detractors. Under German law, the efficacy of drugs is based on a doctrine of "reasonable certainty" rather than one of "absolute proof," as required in the United States. In 1989, a critique of 48 preclinical and clinical studies of the effectiveness of ginkgo extract was published by pharmacologist Peter S. Schönhofer and three colleagues at the Bremen Central Hospital. They concluded that all of the studies were deficient in one or more important aspects and failed to substantiate efficacy of the drug.

This created enormous controversy, and many of the investigators whose work had been criticized wrote letters of rebuttal to the publisher of the journal *Internistische Praxis*. A single such letter was eventually published about a year later,

Dubious Claims Made by Ginkgo Promoters in the United States

Claims	Facts
According to records dating back to 2,800 B.C., the Chinese were the first people to explore ginkgo's extraordinary medicinal properties. The Chinese made preparations of dried ginkgo leaves to treat many of the symptoms of advancing years such as poor circulation, memory loss, and general mental deterioration.	There is little evidence to support this claim. The seed of the ginkgo plant was, and still is, used by the Chinese primarily in the treatment of tuberculosis, asthma, and coughs. Substantiation of any significant internal use of leaf preparations by the ancients for circulatory disturbances is lacking. Such use apparently dates from about 1970. It has not been proven that ginkgo can do this.
Ginkgo extract may offer significant protection against the development of Alzheimer's disease and strokes.	
Ginkgo extract will reverse the aging process.	There is no valid scientific or clinical evidence that this drug can reverse the aging process.
When you purchase this hard-to-find product, you can look forward to a healthier—and possibly even longer—life.	Ginkgo products are not hard to find and are sold in most health food stores in the United States. Ginkgo extract is the most prescribed drug in Germany today. The claim that it increases longevity is false and irresponsible.

but even then, the editors allowed Schönhöfer the final word in which he repeated his allegations of ineffectiveness. Additional rebuttals of his criticism were, however, published in *Der Kassenarzt* in 1990. At least two court actions also took place. In deciding one in favor of Schönhöfer on the grounds of freedom of scientific expression, the court in Hamburg was quick to note that it was not passing judgment on the utility of the product.

My detailed reading of many of the papers involved and study of the various claims and counterclaims has led me to conclude that the allegations of Schönhöfer and colleagues are not well substantiated. Probably every scientific or clinical study ever conducted has certain deficiencies, but it is highly unlikely that 48 of them carried out by qualified and reputable investigators on a single drug would be so deficient as to render their results totally invalid. The more likely reason for such a judgment is that the evaluators used unreasonable standards.

My conclusions on ginkgo extract will probably not bring great joy to either party in this controversy. I believe that the opinionated conclusions of Schönhöfer et al. should never have been published without far more careful peer review than they apparently received. An enormous volume of research appears to substantiate some efficacy for ginkgo extract as a treatment for various circulatory conditions. Assuming this to be true, I

also believe the Schwabe organization should have made greater efforts to market their product as an approved drug in the United States, instead of allowing health food stores to sell it as a food supplement with no labeled claims. Since the product is extremely profitable, the manufacturer would have been well advised to undertake the expense of proving its safety and effectiveness to the Food and Drug Administration. Otherwise, in this country, it falls in the present never-never land of unproven herbal remedies, a category in which it probably does not belong.

Presumably, Schwabe failed to take such a step because of patent difficulties and cost considerations. If so, this is a telling argument for modification of the food and drug laws to allow the marketing of such phytomedicines with proof of safety and traditional claims of utility but without absolute proof of efficacy. The latter procedure is simply too costly unless patent protection can be assured, a difficult-to-impossible process for ancient plant remedies.

Dr. Tyler is a professor of pharmacognosy (the science of medicines from natural sources) at Purdue University and author of *The New Honest Herbal*, an evaluation of popular herbs.

BOOK REVIEW

Title: The Cancer Industry: Unraveling the Politics (1989)

Author: Ralph W. Moss

Publisher: Paragon House, New York

Price: \$21.95

Reviewed by: Saul Green, Ph.D.

Mr. Moss would like you to believe that research institutions, hospitals, medical associations, government agencies, foundations and large corporations—which he calls “the cancer industry”—suppress innovation to maximize profits. Many of the book’s allegations are repeated from a 1980 edition titled *The Cancer Syndrome*. Both versions have been carefully contrived to promote distrust and fear of scientifically based cancer treatment.

The first part of *The Cancer Industry*, entitled “Proven Methods (That Often Don’t Work)” —is intended to undermine confidence in scientific methods. The second part, which occupies half the book, promotes the gamut of “unproven therapies.” The final two parts expound Mr. Moss’s opinion that “the direction of cancer management appears to be shaped by those forces financially interested in the outcome of the problem.” He even claims that big business is so powerful and so determined to make money that it has blocked scientists and government agencies from paying more attention to cancer prevention.

Readers unacquainted with the facts may find Moss’s arguments disquieting, if not persuasive. My reaction was quite different. Having personal knowledge of many of the events he described, I found reading his versions very painful. Although the book is loaded with carefully selected facts, it is also loaded with distortions and misrepresentations. For example:

- Insinuating that an executive-level position made him privy to the inner workings at Sloan-Kettering Institute, Moss

represents that he was assistant director of public affairs at Memorial Sloan-Kettering Cancer Center during the mid-1970s. However, documents I have from Sloan-Kettering officials indicate that his only title was “science writer.”

- Moss suggests that a Sloan-Kettering researcher, Kanematsu Sugiura, found that laetrile was effective against cancer in mice and that his work was never repeated or refuted. The book fails to mention that at least six major cancer research institutions did repeat Sugiura’s experiments and had negative results.

- Moss endorses the work of the late Dr. Virginia Livingston-Wheeler, who claimed that cancer is caused by a bacterium she named *Progenitor cryptocides*. He neglected to mention that scientists do not believe her hypothesis because there is no proof that the organism exists. Neither Dr. Wheeler nor anyone else has been able to produce a cancer by injecting her alleged organisms into experimental animals. Independent researchers have found numerous cases where cancer tissues did not contain the organism. In addition, cultures of “*Progenitor cryptocides*” from Dr. Wheeler’s own laboratory, which were grown in other laboratories, turned out to be common forms of *Staphylococci* that inhabit the skin.

Mr. Moss appears to feel no need to question any assertions or possible motives of those whose work he extols. He is apparently content to regurgitate the tales they tell about themselves, their experiences with patients, and their scientific ability. The book is dangerous because it may induce desperate cancer patients to abandon sound, scientifically based medical care for a worthless “alternative.”

Dr. Green is a biochemist who did cancer research at Memorial Sloan-Kettering Cancer Center for 23 years.

Forum

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ORGANIC FOODS GET GOVERNMENT "BLESSING" DESPITE CLAIMS THAT AREN'T KOSHER

Marilynn Larkin

My infatuation with the organic foods movement ended shortly after it began—during the late '60s—and the foods I've been eating since are doing all they should to keep me alive and well. Yet through all these years, "true believers" have not only kept the folklore alive but have mesmerized a new generation of activists. The result: last year an organic certification provision wormed its way into federal law. By passing the provision, Congress appears to have legitimized what science has debunked.

The U.S. Organic Foods Production Act of 1990—Title 21 of the 1990 Farm Bill—calls for: certification standards set by the U.S. Secretary of Agriculture; a 15-member National Organic Standards Board to suggest guidelines; a National List of substances permitted or prohibited for organic use; certification of organic farmers, processors, manufacturers and wholesalers; labeling and record-keeping requirements; collection of fees from producers, certifiers, and handlers; and civil penalties of up to \$10,000 for violations.

The danger of all this to consumer confidence and pocketbook was apparent when I attended the Third National Conference on Organic & Sustainable Agriculture Policies, held on February 15-16, 1991, at the Ramada Renaissance Hotel in Washington, D.C. Co-sponsored by the Center for Science in the Public Interest (CSPI), the Institute for Alternative Agriculture, and the Texas Department of Agriculture, the meeting was rife with criticism of the way our food is grown, processed, and inspected.

Diverse Bedfellows

A more appropriate title for the gathering would have been Sustainable/Alternative/Organic Agriculture, since "organic" certification is only a small part of a much larger agricultural reform picture. But after years of operating in their own little spheres of influence, the organic folks have acquired new allies, a loose coalition of agricultural and business interests that don't necessarily subscribe to organic mythology, but

want Congress to allocate money for research into more cost-effective ways to produce certain foods. The alliance includes farmers and agricultural conglomerates seeking to use smaller amounts of pesticides and fertilizers to produce the same crop yields; biotech companies that stand to profit from the development of herbicide-tolerant and engineered plants; and environmental and consumer groups, including Consumer Federation of America, that are concerned with possible adverse effects of pesticide residues on human health and the environment. Another major player was CSPI, which lobbied and urged readers of its publications to ask their legislators to support the bill.

Two baby food companies have announced plans to market lines of processed organic foods, and supermarkets are willing to cater to an organic food market segment—if this is profitable. But most large food companies seem to have a wait-and-see attitude. "We invited them to participate," said conference manager Beth Zimmerman, "but they weren't interested."

Terms Ill-Defined

The supporters of "organic & sustainable agriculture" actually are so diverse they barely speak the same language. Definitions of key terms appear to be up for grabs.

"Sustainable agriculture" is probably the easiest to define. It is said to mean growing food in ways that are economically viable and preserve the environment (i.e., soil must in some way be replenished and protected from erosion, so it can sustain crops in coming years). How this differs from what sensible farmers have always done is not exactly clear.

"Alternative agriculture," according to a 1989 report by a committee of the National Academy of Sciences, represents "a spectrum of farming systems, ranging from organic systems...to the prudent use of pesticides or antibiotics...to integrated pest management, crop rotations...and tillage and planting practices that reduce soil erosion and help control

weeds." Proponents often use the terms "sustainable" and "alternative" interchangeably, despite the fact that "sustainability" is a goal and "alternative agriculture" an alleged way of achieving it.

Figuring out what is meant by "sustainable" and "alternative" is simple compared with getting a handle on the term "organic." Does it refer to the food itself or food production techniques? Does it mean no chemicals are used? Or fewer chemicals than are used now? Does it embrace old-style farming methods, such as crop rotation? Or new-style (e.g., herbicide-tolerant) plants?

The lay understanding is that no synthetic fertilizers or pesticides are used in growing or handling "organic" foods. The scientific viewpoint is that since "organic" means "carbon-containing," the term itself is superfluous because all foods contain carbon atoms. Scientists have also pointed out that the fertilizer source makes no significant difference because the vitamin content of fruits and vegetables is determined primarily by their genes. (True, the mineral content can vary a bit with that of the soil, but this has no significance in the overall American diet.) Studies also have found that the pesticide levels in foods labeled organic are similar to those that are not—and are insignificant anyway. Moreover, it is clear that many producers calling themselves "organic" use all sorts of chemicals when the spirit (or economic necessity) moves them to do so. The situation is no less murky when it comes to defining "organic" meat and poultry products.

The new legislation attempts to offer the best (or worst, according to purists) of both worlds. A few chemicals can be used here but not there. Chemicals on the National List will be okay—but wait, the list is being revised. It's all right to use "botanical" pesticides—meaning natural pesticides derived from plants—but tests should be done to be sure the resulting organic products "don't contain any pesticide residues or natural toxicants." But don't produce and meat contain natural toxicants? Of course—although the amounts usually are too small to cause detectable harm. Mother Nature makes them that way. Indeed, according to biochemist Bruce Ames, Ph.D., herbs, spices and other plants contain naturally occurring toxicants thousands of times in excess of the occasional traces of synthetic toxic pest control agents used in agriculture.

Things get even murkier when it comes to processed foods. If these items "contain at least 50% organically produced ingredients by weight, excluding water and salt," the word "organic" will be permitted on the principal display panel, the new law says, but only "for the purpose of describing the organically produced ingredients." If they "contain less than 50% organically produced ingredients by weight, excluding water and salt," then the word "organic" can be used on the ingredient listing panel. *Et cetera.*

At the conference, all sorts of definitions were bandied about for organic foods. Varying percentages of organic ingredients were quoted as necessary before a processed food could be called "organic," and there was little agreement on the techniques to be incorporated into alternative/organic agriculture. The advocacy magazine *Organic Farmer* has even

devoted most of its Winter 1990 issue to the topic, highlighting no less than four lengthy definitions for use "as a basis for discussion." If the proponents can't figure it out, what's the consumer to make of it all?

How Congress Got Involved

How did Congress get involved in this nonsense? In 1985, when proponents began lobbying for sustainable agriculture, the "organic" people were shunned as a "fringe" element by mainstream agricultural interests. But after the 1989 Alar scare—which shook consumer confidence in our food supply—the "gung ho organics" people gained political clout. Patrick Leahy, senator from Vermont, chairman of the Senate Agriculture Committee and ardent environmentalist, started pushing for the certification provision's passage.

"Leahy got democratic senators to support the organic provision from an environmental perspective, since it meant using fewer pesticides," said Sandra Schlicker of McMahon and Associates, Washington lobbyist and consultant to the Rodale Institute, in a preconference interview. "The other key point was that certification is supposed to be self-supporting." Bolstered by mail and phone calls stimulated by proponent organizations and the "health food" press, the provision passed handily in the Senate.

In the House, opposition on economic grounds was countered with the argument that "farmers will pay for the organic seal like producers pay for the kosher seal." Once the issue of cost was downplayed, lobbyists "appealed to House members' commitment to the free enterprise system," Schlicker said. "We figured, it's just one more choice for consumers, so why not put it in?" Not everyone was persuaded—so organic devotees added a crowning touch. "On the morning the provision was due to come up for a floor vote, a six-pack of organic juice and a box of blueberries were delivered to each member of the House," Schlicker said. The U.S. Department of Agriculture had expressed strong opposition to the provision. But, according to a blow-by-blow account in *Organic Farmer*, passage was secured by a "massive" telephone campaign

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generated by a coalition of 24 environmental, consumer, and farm groups.

The Real Costs

It's highly unlikely that certification costs will be 100% or even 75% "user-borne," as proponents would have us believe. The USDA was supposed to appoint the standards board by May 28, 1991, but the agency's 1991 budget was appropriated before the new law was enacted. If and when directives are issued, the states would then have to decide how to comply. Rather than magically gearing up to implement a national program's requirements, most states will have to bear the expense of startup costs, transitional costs (for programs already in place), and ongoing costs of monitoring the program.

Even consumers who never bite into an "organic" apple are likely to foot part of the bill. Currently, about half the states use some system of organic certification. Those that run their own program have administrative costs. Those that hire private organizations (such as the National Organic Farmers Association) to "certify" the products pay the organization and bill the farmers. However, there are upwards of 30 such organizations, each with different certification criteria and fee structures. Who will pay to get everyone in sync?

The best estimate I could get from panelists concerning current certification costs to the farmer is 2% of gross sales. Yet proponents agree that once national standards are in place, costs will be higher. Ironically, small farmers—who are among those pushing hardest for national certification—are the ones most likely to be driven out of business if the program actually comes to pass!

Is All This Really Necessary?

The endorsement of an organic certification program is something far worse than pinching pocketbooks. By passing this provision the government has, in effect, given its "blessing" to organic food. Unlike the kosher food blessing, however, this legislative sanction casts aspersion on the food we've been happily and healthfully eating up to now. The mere existence of the provision in the Farm Bill implies that it's something necessary and desirable. If organic foods are strictly regulated, won't that mean they're better than conventionally grown foods, which don't require a special label? A logical thought—and apparently what the conference organizers want us to believe.

Brave New World?

"Am I being hopelessly romantic if I envision a day when farmers will be held in the same esteem as the medical

profession?" enthused Katherine Clancy, professor of human nutrition at Syracuse University, in the first day's keynote address. Biotechnology is turning agriculture into an industry that will soon yield only "biomass, not crops," she continued. The "reductionist efforts" of the food processing industry are giving us "imitation food," she claimed, composed of "ingredients that never resided on a farm," that are "genetically engineered" and "factory-made." The audience ate it up.

One brave soul stepped up to the microphone, albeit apologetically, and admitted to Clancy that he's lactose-intolerant. It seems the food industry actually did something good by figuring out a way for him to enjoy the nutritional benefits of dairy products. Was the organic movement going to take that away from him?

"We're not talking about LactAid," Clancy replied quickly. "We're talking about saccharin and other imitation products that don't have an agricultural base." (Oh. So sometimes "factory-made" is okay. Curiouser and curiouser.)

Safety and Nutritional Claims

Many of the 400 or so attendees looked like fresh-faced kids and former '60s activists—foot soldiers of the organic faction—who were there to celebrate their provision's passage. In the hallways between sessions, I heard many of them extol the supposed virtues of "organic" food. But in a private interview, conference coordinator Roger Blobaum, director of CSPI's Americans for Safe Food (ASF), was more guarded in his assertions. "No one is making any nutritional claims for organic food and very little is being said in terms of food safety," Blobaum said. Two groups of people support organic certification, "those concerned with safe food and the environmental people," he added. People who view it as an environmental issue aren't that concerned about pesticide residues, "they're more concerned with how food is produced and its impact on the environment."

And the safe-food faction? "There isn't any safe level for a carcinogen. It depends on how much risk you want to take," he said with a look that implied only an idiot would want to take this risk. "After all, FDA tests only pick up 40% of pesticides. And there are no standards or testing for neurotoxins, which kill by affecting the nervous system." The nervous system of insects, you mean? "Yes, that's how they kill. And they can have the same effects in the body." Seeing my skeptical look, he became conciliatory. "We're not saying that everybody should quit using pesticides or get all the residues out. Just move away from chemical use," he said. "We don't contend organic food is residue-free. It's a production claim that says food was grown in this way, with these inputs."

EDITORIAL BOARD

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Although Blobaum sounded moderate with respect to pesticide use, a flyer in ASF's information packet did not. Entitled "Truth in Produce: Maine's Successful Effort To Keep Consumers Informed," it begins:

Wouldn't it be nice if you could read a label and find out which pesticides were used on that tomato or carrot you're thinking of buying? In fact, some pesticides *are* listed on a label. By federal law, pesticides applied to produce "post-harvest" have to be listed on the *shipping container*. Post-harvest pesticides, typically fungicides used to preserve fruits and vegetables shipped long distances, are worth worrying about. Some are carcinogenic. Some are mixed or sealed in by waxes applied to fruits and vegetables. That means they can't be washed off. By reading the label, you could choose between fruits and vegetables that have had pesticides applied after harvest and those that have not—like locally grown produce, which isn't shipped long distances. Or certified organic produce, which can't be treated with any synthetic pesticides.

Not quite. For one thing, the risk from postharvest pesticides is minor. For another, some synthetic pesticides may make the National List. Do you think ASF or the organic food movement itself could survive without fearmongering?

Rampant Ignorance

"The EPA says two people in my neighborhood will die from pesticides in food," said Mary Blehm, of Mothers and Others for Safe Food—one of the groups that orchestrated the Alar scare—as she begged me to read their book called *Pesticide Alert*. "At least I'm feeding my children food they'll grow from instead of food they won't grow from," she added.

I asked an EPA toxicologist to explain to another "safe food" advocate how EPA tolerance levels are determined. The young woman's eyes glazed over during the explanation. "I

don't really understand any of that," she said with an ingratiating smile. "But it's nice to have other opinions."

If the foot soldiers are ignorant about science, their leaders help keep them in the dark. During one panel, a young woman stood at the microphone and stated she "hadn't heard enough during the conference about the nutritional benefits of organically grown foods." This statement generated applause from the audience, but no comment from the podium. Why were the panelists silent? Most were aware no nutritional claims could legitimately be made. I assume they also knew that the National Research Council of the National Academy of Sciences recently recommended that Americans increase their consumption of fresh fruit and vegetables, noting that the potential benefits of eating more produce greatly outweigh any risk from exposure to pesticide residues. Perhaps the panelists didn't want to risk cooling the troops' fervor with a dose of reality.

Expensive Food

In her keynote address, Clancy acknowledged that "agriculture can't be sustainable without addressing [the issue of] hunger." Yet organic proponents, who never seem to miss an opportunity to flaunt their social conscience, don't flinch at the extra cost of organically grown foods. While advocates claim the premium runs only 5 to 30% above that of conventionally grown items, marketplace studies suggest otherwise. *Organic Market News*, for example, reported that on September 22, 1990, organic wholesale prices and Los Angeles terminal market prices for selected vegetables were as much as 183% higher for organic produce (in this case, eggplant). And carrots, cauliflower, corn, kale, russet potatoes, yellow squash, and zucchini all cost more than twice as much as their conventionally grown counterparts. Clearly, organic foods are not destined to feed the masses.

Hillary Hinds Kitasei, a panelist whose listed credential was her membership in the League of Women Voters in Croton-on-Hudson, NY, admitted that groups such as the organic co-op she belongs to "discriminate" against people who can't afford the time to do their share in the co-op or the expense of

PUBLIC ATTITUDES TOWARD "ORGANICALLY GROWN" FOODS*

Question	Yes	No	Not Sure
Have the reports in the last year regarding the use of pesticides and other chemicals made you change your eating habits?	30.7%	69.1%	0.2%
Have the reports caused you to seek out organically grown produce or produce grown with limited use of chemicals?	28.3%	71.0%	0.7%
On the whole, would you say the federal government does a good job of protecting consumers from pesticides and other chemicals in fruits and vegetables that may be potentially harmful?	46.5%	48.2%	5.2%
Have you ever eaten organically grown fruits and vegetables, that is, fruits and vegetables grown without pesticides or synthetic chemical fertilizers?	57.6%	38.2%	4.0%
Would you buy organically grown fruits and vegetables if they cost the same as other fruits and vegetables?	84.1%	13.2%	2.7%
Would you still buy them if they cost more, or not? (Asked of those who answered yes to the above question)	52.1%	29.7%	18.2%

*Adapted from The 2nd Annual Organic Index, a Louis Harris Poll conducted for Organic Gardening (a Rodale Press publication). Data based on 1,250 telephone interviews conducted between November 6 and December 13, 1989. Of those who had eaten organic foods, 64.7% said the most important reason was long-term health effects. However, 60.7% said they believed they were more nutritious.

a baby-sitter. That didn't stop her from exhorting the attendees to keep fighting for their cause, and to remember "the latent force of feminism in middle-class women and its power to move this country."

Although Ms. Kitasei can afford to revel in her self-proclaimed "political and spiritual revolution," most people can't. Will organic foods become the elitist fare of a chosen few destined to live a long, healthy life? More likely, the chosen few will enjoy only the dubious honor of spending more for their meals. Or, suggests Dr. Manfred Kroger, "if America's poor are scared away from conventionally grown agricultural products, organic foods might even go down in history as one of the cruelest hoaxes ever perpetrated on the poor."

What Should Be Done?

It would be foolhardy, however, to dismiss organic enthusiasts as naive but benign. At the conference, Eileen van Ravenswaay, Ph.D., a professor in Michigan State University's Department of Agricultural Economics, released preliminary results of her survey of consumer attitudes toward food purchasing. She and a colleague conducted the survey by mailing questionnaires to 2,200 households throughout the U.S. Of 906 primary shoppers who responded, nearly 60% said that fresh fruits and vegetables are likely to contain pesticide residues and

about one fourth said residues pose an extremely high health risk over a lifetime. The survey also found that many shoppers would be willing to pay more for foods with labels stating the items had been tested and met some kind of standard. It wouldn't matter much whether the labels stated "pesticide-free," "no detectable levels of pesticide," or "no residues above federal limits." Most produce already meets federal standards, but the survey suggests that the public either doesn't know about government food safety programs or doesn't trust them. Similar public concerns were expressed during a Louis Harris Poll conducted during 1989.

"Organic certification" isn't the answer. It will merely create more confusion and distrust in the marketplace. Foods certified as "organic" will neither be safer nor more nutritious than "regular" foods. They will just cost more. Instead of spending money to legitimize nutrition nonsense, our government should do more to attack its spread.

Ms. Larkin, a former contributing editor of *Health* magazine, is a freelance writer in New York City. In 1985 she received a first-place award for consumer journalism from the National Press Club.

"Organic Foods—A Scientific Status Summary" is available for \$1 from the Institute of Food Technologists, 221 North LaSalle St., Chicago, IL 60601. "The Guide to the U.S. Organic Foods Production Act of 1990," a 23-page booklet prepared for the Organic Foods Production Association of North America, is available for \$10 from its author, Stuart Fishman, 5628 S.W. Miles Court, Portland, OR 97219.

BRIEFS

Anorexia nervosa lowers bone density. A study of 27 anorexic women has found that their bone density had been decreased by malnutrition and did not reverse rapidly when they recovered. The researchers fear that anorexia during youth may adversely affect bone strength throughout adulthood and constitutes a risk factor for the premature development of fractures due to osteoporosis [*JAMA* 1991;265:1133-1138].

FDA may toughen enforcement. It has been FDA policy since 1969 that the use of the term "fresh" with any food that has been heated or chemically processed is false and misleading. When the agency asked Procter & Gamble to stop representing that its juice made from frozen concentrate is "fresh," the company said it would not remove the words "Fresh Choice" from its Citrus Hill orange juice label without a guarantee that other manufacturers would have to take similar action. But the company relented after U.S. marshals impounded 24,000 half-gallon cartons of the juice at a Minneapolis warehouse. Ragu Foods, which also has been warned by the FDA, then agreed to stop calling its heat-processed pasta sauces "fresh." Referring to the Citrus Hill impoundment in an interview in *American Druggist*, the new FDA Commissioner, David A. Kessler, M.D., J.D., said he intends to end the FDA's reputation as a "paper tiger" that sends letters but is slow to enforce regulations. The National Consumers League helped stimulate the agency's action.

Guar gum warning proposed. In response to reports of esophageal obstruction following ingestion of guar gum tablets, the FDA has proposed a warning label on all OTC drugs containing guar gum, karaya gum, psyllium, or other gums as active ingredients. The proposed warning reads: "Take (or mix) this product with at least 8 ounces (a full glass) of water or other fluid. Taking this product without adequate fluid may cause it to swell and block your throat or esophagus and may cause choking. Do not take this product if you have ever had difficulty in swallowing or have any throat problem. If you experience chest pain, vomiting, or difficulty in swallowing or breathing after taking this product, seek immediate medical attention."

Dubious cancer treatment results. Researchers at the University of Pennsylvania Cancer Center have compared 78 patients with advanced cancer treated at the center with 78 similar patients given various vaccines, a vegetarian diet, and coffee enemas at the Livingston-Wheeler Clinic. The study found no difference between average survival time of the two groups. However, the quality-of-life measurements were better for the conventionally treated group [*N Engl J Med* 1991;324:1180-1185]. The clinic's founder, Virginia Livingston-Wheeler, M.D., died last year. An ad seeking a new medical director offers a "six-figure net income guarantee to qualified candidates."

Food irradiation may increase. The nation's first food irradiation plant is under construction in Mulberry, Florida. The facility's owner, Vindicators of Florida, Inc., hopes to process 300 million pounds of fruits, vegetables, and poultry this year. More than 30 countries have approved the use of food irradiation technologies to help ensure food safety. However, in the United States, opposition by consumer groups aligned with the health food industry has made many food companies and retailers wary of marketing irradiated foods. Several dozen irradiation facilities exist here but are used mainly to sterilize surgical supplies.

Libel protection for fruits and vegetables? In March, the Colorado Senate passed a bill extending libel protection to fruits, vegetables, and other produce. The legislation is called the Act Concerning the Creation of a Cause of Action for the Disparagement of Perishable Agricultural Food Products. The *Washington Post* states that the senator who introduced it is an apple grower alarmed at the attack on the use of Alar in apples. The bill would expose those who cast needless doubt on the safety of various perishable agricultural products to lawsuits for up to three times the cost of lost sales traceable to such disparagement.

Alcoholism and the elderly. The American Association of Retired Persons warns that some elderly individuals who appear headed for senility are actually problem drinkers. The warning signs—which often mimic those of other disorders—are: mood swings; short-term memory loss; loss of appetite; untidy appearance; apparent immunity to prescribed medications; repeated falls, cuts, and bruises or burns from smoking; and loss of interest in hobbies, activities, or contact with family.

Wine slated for safer packaging. The manufacturer of *Cisco*, a high-alcohol, fruit-flavored wine, has agreed to repackage its product so it no longer resembles wine coolers that are 5% alcohol. Wine usually contains 10% alcohol, but *Cisco* has twice that amount. A 12-ounce bottle contains the same amount as five shots of 80-proof vodka. Alcohol poisoning has been reported among teenage users who underestimated its potency, which is four times that of the average cooler.

Indictments for telemarketing fraud. Federal grand juries in Tampa, Florida, have indicted 26 individuals for conspiracy, mail fraud, wire fraud, bank fraud, credit fraud, and money laundering. Each of the defendants is accused of making false representations in the sale of vitamins and/or water purifiers through telemarketing companies.

DONSBACH'S CANADIAN CONNECTION

Paul Benedetti

Kurt Donsbach could be considered "chairman of the board" when it comes to questionable nutrition in the United States. Armed with a string of dubious credentials, he has established correspondence schools, produced books, magazines, and pamphlets, founded a "nutritional consultants" organization, and operated myriad supplement companies. He also has been board chairman of the National Health Federation, the health food industry's militant lobbying arm.

At one time it was estimated that Donsbach University, his unaccredited correspondence school in Huntington Beach, California, was awarding more Ph.D.s in nutrition than all the accredited universities in the United States combined. "Donsbach University" no longer exists, but its legacy lives on through its graduates.

One such individual is David Rowland, who received a "Ph.D. in nutrition" in 1980. Rowland is one of the leading figures in the "alternative health" scene in Canada. He is a popular lecturer and appears often on radio and television shows and at alternative health fairs and supplement trade shows. Rowland also calls himself a registered nutritional consultant (R.N.C.) and says he has a Doctor of Nutritional Medicine (N.M.D.) degree from the John F. Kennedy College of Nutraceutical Arts & Sciences (American Nutraceutical Univer-

sity), an affiliate of the American Nutraceutical Association. Rowland says that degree "is an honorary one awarded me by a professional association...for my contribution to the field." However, the group's literature suggests that the primary requirement has been payment of a fee. Curiously, Rowland rarely mentions his two reputable credentials: a bachelor of arts degree and a master of business administration from the University of Toronto.

Rowland's Network

In a pattern strikingly similar to that of Donsbach, Rowland has established an elaborate network of Canadian organizations designed to promote "holistic nutrition." Four of them were founded in 1983: The Nutritional Consultants Organization of Canada (NCOC), the Canadian Nutrition Institute, *Nutrition News*, and Creative Nutrition Canada Corp.

• The Nutritional Consultants Organization of Canada (NCOC) is a nonprofit association designed to "help inform the public about nutritional consulting and to provide standards of practice for Nutritional Consultants." In a recent letter to my managing editor, Rowland stated that he had served as "elected president" from 1983 to 1988 and as one

of ten directors since that time. NCOC's seven-person "advisory board" includes: Linus Pauling, Ph.D.; Abram Hoffer, M.D., Ph.D. (a proponent of megavitamin therapy for schizophrenia); Morton Walker, D.P.M. (a prolific writer); Lendon Smith, M.D. (who surrendered his medical license rather than face charges of insurance fraud); Maureen Salaman (president of the National Health Federation); and Jeffrey Bland, Ph.D. (the leading interpreter of scientific information for the health food industry). All six have the letters "R.N.C." after their name on NCOC's letterhead.

- The Canadian Nutrition Institute is a correspondence school whose principal course is a "certificate program in holistic nutrition" that cost \$795 (Canadian dollars) in 1990. The application form notes that credit may be given for equivalent studies or related work experience such as owning or operating a health food store or selling supplements.

The brochure states that the course, which can take from 6 months to 2 years or longer to complete, will "enable a self-motivated person to acquire knowledge beyond that presently available in traditional approaches to nutritional training." The textbooks listed in the brochure include: *Superhealth* by Kurt Donsbach; *Psycho-Nutrition* by Carlton Fredericks (once convicted of practicing medicine without a license); *Nutrition From Tots to Teens* by Emory Thurston (once convicted of offering laetrile to treat cancer); and the *Vitamin Bible* by Earl Mindell, whose Ph.D. is from the unaccredited University of Beverly Hills. According to government education officials, the Canadian Nutrition Institute is not a recognized degree-granting body and has no standing whatever in Canada's academic community. Nor are its courses and certificates accepted by any accredited college or university in the country.

The brochure also states that successful completion of the course is "one of the ways of meeting the professional requirements for the professional designation Registered Nutritional Consultant," which allows the recipient to "legally use" the letters "R.N.C." The credential is obtained by applying through NCOC.

Pertinent literature stresses that the R.N.C. designation is "registered" or "certified" by the Canadian Council of Professional Certification. However, like Rowland's school, this council has no academic standing. Government records indicate it was incorporated in 1975 for the express purpose of giving certification to unrecognized professions. It does not regulate anybody; their own organizations do that, director Russell Pickering told me during a telephone interview. "The onus is on the association that's offering it. The Canadian Council is just the certifying body," he said. When I asked what the certification actually means, he replied that it gives "the recognition of being certified."

- *Nutrition News* is a quarterly newsletter for R.N.C.s. Rowland publishes it and writes many of its articles.

- Creative Nutrition Canada Corp. is an importer and distributor of vitamin supplements.

Like Donsbach, Rowland pursues many interests in the field of alternative health. He is the author of several books on holistic health, a practicing nutritional consultant, and a

former associate editor of *The Vitamin Supplement*, a magazine circulated internationally in health food stores. He is also a senior partner in Nutripower, a California company that manufactures and distributes nutritional supplements.

Rowland is a frequent and outspoken critic of mainstream medicine. "If quackery is the promotion of a procedure that doesn't work, then much of medicine is quackery," he said in an interview. His writings and speeches often call for freedom of choice in the health marketplace. "A self-regulating market takes care of the quacks," he said.

Rowland also has published booklets on health topics, such as *Who Needs Supplements?* and *Vascular Cleansing—New Hope For Heart Disease*, a 33-page work widely advertised in health food magazines with the promise: "This Book Could Save Your Life." In it he suggests a daily regimen of 30 vitamins, minerals, and glandular substances to reverse or prevent atherosclerosis—a regimen sometimes referred to as "oral chelation." Part of the evidence he offers to justify this approach is an uncontrolled study attributed to the Preventive Medicine and Nutrition Care Center in Huntington Beach, California, a now-defunct facility that was owned and operated by Donsbach. The booklet doesn't mention that the U.S. Food and Drug Administration has banned the sale of "oral chelation" products.

Dr. Jack Hirsh, chairman of the department of medicine at McMaster University Medical Centre in Hamilton and a specialist in atherosclerosis, examined Rowland's suggested regimen and said he knew of no evidence that the program was beneficial. When questioned about this, Rowland answered "I'm reporting on the evidence I have available to me.... It's responsible because I am reporting the truth."

Rowland's booklet provides testimonials from eight users of his vascular cleansing program, one of whom is identified as "V. Head, Willowdale, Ont." The booklet neglects to mention that Vickers Head is the vice president of the Nutritional Consultants Organization of Canada, one of the original directors of the corporation, and a personal friend of Rowland's. When asked about this, Rowland replied, "I know the man. Does that mean because I know him, he's lying?"

Rowland has gone to considerable lengths to protect the rights of nutritional consultants to practice in Canada. He has written numerous editorials in *Nutrition News* and elsewhere about health freedom, and has even written a 75-page booklet, *Legal Aspects of Nutritional Consulting*, which offers advice how to avoid difficulty while plying the trade.

One suggestion is a religious angle: "Belonging to a particular religious organization will not permit you to practice medicine without a license; however, there might be some ways in which it could help protect your freedom to exchange health information with your friends, associates, and/or clients." To explore this approach, Rowland suggests contacting the Alpha Holistic Freedom Alliance, a recently incorporated, non-denominational religious organization. Not surprisingly, it has the same address as his Nutritional Consultants Organization of Canada.

BOOK REVIEW

Title: Natural Healing with Herbs (1990)

Author: Humbart Santillo, B.S., M.H.

Publisher: Hohm Press, Prescott, Arizona

Price: \$14.95

Reviewed by: Varro E. Tyler, Ph.D.

In a previous issue [NF 6:41-44], I listed ten signs that identify irrational recommendations for the use of herbs. These signs—which I call false tenets—can be used to distinguish between rational use (true herbalism or pharmacognosy) and irrational use (the pseudoscience which I call *paraherbalism*). Humbart Santillo has assembled the almost perfect *paraherbal*—a single volume which espouses nine of the ten false tenets:

1. The foreword by the late Robert S. Mendelsohn, M.D., restates the fictitious medical-conspiracy-against-herbs theory by noting that belief in modern medicine's credo prevented people from even mentioning herbs.

2. Omission of facts about the toxicity of such herbs as comfrey (p. 107) implies that there are no harmful ones.

3. The introduction by macrobiotic guru Michio Kushi restates the erroneous belief that whole herbs offer more than just an active chemical constituent by claiming that they contain "energies" in addition to active chemical principles. He states that the real contribution of herbs to therapy is largely in this energy aspect.

4. Page 350 advises us to use "a pure 100% organic vegetarian diet" and to "avoid all inorganic foods."

5. Page 17 recommends eyebright as an eyewash. This is an example of the "Doctrine of Signatures," the ancient belief that the form and shape of a drug source determine its therapeutic virtue.

6. Pages 5 through 11 espouse yin-yang theory and four-humor diagnoses— notions as nonscientific as those of astrology.

7. Chapter 12 is devoted to homeopathy. Located therein is the enlightening statement that "Medicinal activity is a distinct property of all drugs."

8. The book either ignores or passes over lightly the toxicity information gathered from animal tests on coltsfoot (p. 106), comfrey (p. 107), and sassafras (pp. 173-174). Santillo calls poke "an excellent herb, it should be used with caution."

9. Anecdotal information is used liberally throughout the book.

10. The only false tenet missing from Santillo's book is the assertion that God created herbs for the specific purpose of curing disease.

I might be willing to overlook Santillo's lapses in syntax—"Potent herbs can produce toxic effects in large amounts," (p. 46)—or spelling—"Principle Therapy," (p. 296). But I don't think kindly about his recommendation of cabbage leaf poultices or castor oil packs for internal tumors or, if pain is present, the consumption of wild lettuce and valerian tincture (p. 351) to alleviate it.

Santillo's knowledge of the herbs themselves is superficial. Mormon tea (p. 116) is obtained from *Ephedra nevadensis*

Wats. not, as he maintains, *E. vulgaris*. Chaparral (p. 103) is not "one of nature's best antibiotics." The garlic-in-olive-oil preparation (p. 123) he recommends for infections would be ineffective because the antibiotic allicin is rapidly destroyed under such conditions. Valerian is not a stimulant, even initially, in human beings (p. 117). That effect is reserved for cats. Further, a 1988 study indicates that the volatile oil is not the sedative principle in the drug.

The chapter on "hydrotherapy" repeats much of the information and uses many of the classifications developed by Father Sebastian Kneipp, who originated the specifics of the procedure. However, Father Kneipp's name is not mentioned. Many of Santillo's recommendations seem to be little more than paraphrases of the same information found in J.K. Kloss's 50-year-old work *Back to Eden*. Kloss is included as one of the 12 references in Santillo's book. The average age of the 11 references for which publication dates are noted is now 24 years. Despite all this, the book jacket describes the book as "The First American System of Herbology."

Santillo's biographical sketch lists a B.S. degree from Edinboro State Teacher's College and four other "degrees": Doctor of Naturopathy, Health Practitioner, Iridology Certificate of Merit, and Master Herbalist. The sketch also describes his study of Oriental medicine, myopractic therapy, medical botany, and concept therapy.

Dr. Tyler is professor of pharmacognosy (the science of medicines from natural sources) at Purdue University. A world-renowned authority, he wrote *The New Honest Herbal*, an evaluation of popular herbs, and is coauthor of the textbook *Pharmacognosy*.

QUESTION BOX

Q. Does eating sugar make you feel hungrier?

A. It takes less time for the body to break down the chemical bonds in sugar (a simple carbohydrate) than it does to break down the bonds in starch and fiber (complex carbohydrates). Because of this, sugar-sweetened foods may provide a more immediate energy source, while foods with starch or fiber tend to provide a slower and more sustained energy source. Therefore, while sugar itself may not make you feel hungry, it can leave your appetite less satisfied when consumed alone in the form of a soft drink or a candy bar. If you eat sugar at the same time as complex carbohydrates, protein, or fat, your appetite will probably be satisfied for a longer period.

Q. How long can canned food be stored at home?

A. Food that has been properly canned is safe to eat as long as the container remains intact (After several years, most metal containers will show signs of corrosion, usually starting from the outside). After a long period of storage, however, changes may occur that affect the food's color, quality, and nutrient value. Within a year, canned fruit juice will lose about 25% of its vitamin C, and canned asparagus will lose some vitamins along with its green color. Canned foods last longer when stored at cooler temperatures. Foods stored at 67° F retain their peak of quality twice as long as they would stored at 85° F. At 67° F, most foods retain their quality for 1 year. However, some foods retain their quality for only 6 months. Foods that should be stored no longer than 6 months include asparagus, beets, citrus fruits, green beans, fruit juices, pickles, peppers, sauerkraut, mixed fruits, fruit juices, and all tomato products.

Forum

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BOTTLED HYPE: THE STORY OF *Km*

Jack Raso, M.S., R.D.

Km is a potassium/herbal formula produced by Matol Botanical International Ltd. of Montreal, Canada, and sold person-to-person through distributors in many countries. I became curious about it when a local distributor informed me that one of her many satisfied customers was a kidney patient whose blood potassium level was chronically high. A few months later she invited me to a large public meeting and sponsored me as a distributor. Matol's mission, according to its August 1991 *Journal*, is:

To impact World Health and the environment positively through products, services, education and programs that promote quality of life and healthy living; to impact the vision of humanity and the world we live in.

Matol's "governing values," listed below the mission statement, are integrity, quality, leadership, independence, family, respect, financial security, loyalty, and personal growth. Independence, the statement suggests, can be achieved "by promoting and encouraging everyday health, wealth, self-esteem and freedom from unnecessary obligations, servitude and oppression."

The Matol Story

Km's history is vividly described in company brochures and videotapes, which provide the following details:

Km was formulated in the 1920s by Karl Jurak, a student of agrobiolgy (plant chemistry) at the University of Vienna. During his youth, Karl was interested in flowers and plants and displayed an "unquenchable thirst for knowledge." One day while climbing a mountain he suddenly became weak and "dangerously short of breath." To improve his physical condition, he became "driven to establish a state of optimum health." He reasoned that "if he could find a way to focus his natural body energies, he would then find the key to relieving his problems. He decided to apply his knowledge of science and use the plants he loved...to prepare a health formula for himself."

Karl was "sure that nature had anticipated man's needs." After eight months of work, during which he analyzed his own blood samples daily, he arrived at a formula. But although he noted many benefits, the "key" to the formula was missing—"a factor that would perfectly merge all of the virtues of each plant." Finally, in 1922, the "key" was revealed to him in a dream. He completed the formula and found that taking it led to "remarkable improvement." He based his doctoral thesis on this work and, at the age of 19, received a doctorate with honors in agrobiolgy. In 1925 he was awarded a second doctoral degree, in biochemistry.

In 1932, the story continues, the Canadian government commissioned Jurak to do research and he emigrated to Canada. For 30 years he went on preparing the formula himself. He didn't sell it, but gave it to friends and relatives until—in 1962—he was no longer able to satisfy the demand and "destiny intervened." In that year Jurak entrusted the formula to his son, Anthony, who had earned his own doctorate in biochemistry. "But with the inheritance came the injunction not to change the formula."

Among the many persons using the privately prepared formula was a long-time friend of Jurak's son—J. F. Robert Bolduc. In 1984 Bolduc was manager of a market research firm in Montreal. Later that year he became aware of the rapid growth of the natural products industry and the value of networking and, with Anthony Jurak, launched Matol Botanical International. For Matol's introduction to the United States they were joined in 1986 by network marketing expert Sam Kalenuik.

An article by writer Kevin Krajick in the August 1989 issue of *Longevity* fills a few gaps in the above story. Initially, Matol Botanical International had a single product—*Matol*—which was marketed as a treatment for diseases ranging from rheumatism of the spine to prostate cancer. But Canada's Health Protection Branch enjoined the company from making therapeutic claims for the product. Matol's attempt in 1985 to export its product to the U.S. was stymied by the FDA, which had it seized on grounds that extravagant claims had rendered it an unapproved new drug. In April 1986 the FDA issued an Import Alert, directing that shipments of Matol be detained. However, Matol circumvented the FDA by adding cascara sagrada (a laxative) to its product and renaming it *Km*.

Matol's Products

Km retails for \$36 a quart. It is packaged in a white plastic container bearing the words:

...a potassium mineral supplement preparation, in a non medicinal base prepared by a special process from extracts of flowers, foliage, roots and barks of certain botanical plants. *Km* contains 585 mg of Potassium per serving of 2 tablespoons. Drink 1 tablespoon (15 ml) twice a day, morning and night, which can be mixed in milk or water.

The amount of potassium in each serving is not much more than would be furnished by 8 ounces of orange juice, 1 broccoli stalk, or 1 medium-sized banana. The first 3 of the 27 ingredients listed on the container are purified water, caramel color, and glycerin. Other ingredients include 14 herbs, 5 minerals, and artificial flavors (unnamed except for vanillin, which was not in the original formula). Matol suggests that one ounce daily is appropriate for most people but that dosage should be determined by how the user feels.

During the past 2 years, Matol has added other items to its product line: *FibreSonic*, a powdered supplement, said to contain vitamins, minerals, and 27 kinds of dietary fiber; and the "Pathway Program," a weight-management program that includes two flavors of powdered meal replacement shake and two types of high-fiber bar.

The Pathway oat and peanut bars, about 2 ounces each, sell for \$21 per box of 8 (\$1.31 per ounce). These are similar to peanut butter-flavored *Slim-Fast* bars, although they are lower in nutrients and three times as expensive. But they are preferable, according to their package, because "Matol's Pathway Program fosters self-esteem, eliminates roadblocks and strengthens personal intuition." My sponsor represented them as fat-free, which they are not. The Pathway *Matola* bar, a low-fat granola bar, is advertised as cholesterol-free, sweetened with honey/fruit juices, and containing "chelated minerals" and "certified organic ingredients." Available in 2 flavors, it costs \$21 per box of 8.

I Become a Distributor

Multilevel marketing (also called network marketing) is a form of direct sales in which independent distributors sell products to their friends, acquaintances, and other contacts. Distributors can buy products wholesale, sell them at retail, and recruit others to do the same. Recruiters who enroll enough distributors become entitled to a percentage of their sales. Matol's sales pitch emphasizes financial opportunity as well as product integrity.

I obtained my Matol distributor's kit by completing a simple application and paying \$90 to the woman who sponsored me. The kit included a quart of *Km*, two 10-ounce packets of *FibreSonic*, a translucent measuring flask, a 1-ounce measuring cup, a 1990 audiotape of a talk by Sam Kalenuik, two slick videotapes, and a handsome looseleaf binder. The binder contained product brochures, a sales receipt book, order forms, a *Prospecting & Sponsoring Handbook*, a *Distributor Manual*, a *Business Guide*, a catalog proffering Matol "designs" including clothing and accessories, an issue of Matol's *Journal*, a

question-and-answer booklet, record-keeping materials, a brochure requesting a donation to the nonprofit Dr. Karl Jurak Foundation (concerned with child abuse), and other paraphernalia. The box containing the kit bore the message: "I Am Staying Young. Ask Me How."

Matol's *Handbook* suggests using the following advertisement to attract new distributors:

"Dissatisfied?" We are currently seeking 3 individuals with sales, management, or teaching backgrounds who have owned their own business. Must be capable of handling exceptionally large incomes....Call for an appointment....

In the audiotape, Kalenuik states that Matol had a quarter of a million distributors. In the videotape entitled "An Idea Whose Time Has Come," the narrator says, "No important news flashes heralded the discovery [of *Km*], no documentation in prestigious journals—just an unpretentious sharing of human insight." One scene shows a boy denying his dog additional *Km*, unflinchingly downing an unmeasured amount and, as an afterthought, stuffing a second bottle of *Km* into his school bag. Another depicts a young girl about to "share" *Km* at school during "show-and-tell." Toward the end of the video, the elderly Karl Jurak tells us we "are the carriers of this important legacy."

The second videotape has three segments. In the first, "Building on Destiny," Karl Jurak indicates that although he doesn't understand how *Km* works, it may "have something to do with purification and oxygenation of blood."

The second segment consists mainly of testimonials from distributors about how enthusiastic they are and/or how much money they have made. Several stated they had earned \$30,000 per month, and Matol's top distributors, a married couple, were said to have made \$82,579 in a single month. (The improbability of such earnings accruing to new distributors is not mentioned. My sponsor, who certainly marketed aggressively, told me she was making about \$700 per month.)

The third segment assures us that "Matol's phenomenal success is based on *Km* alone—no fancy packaging, no Madison Avenue hype. Just one single product that works." But the company also intends to "continue Dr. Jurak's dream in addressing the most pressing health problems facing mankind today...obesity, environmental impurity, widespread dietary deficiency in both young and old. To meet these challenges, Matol introduces World Health Quest products. The first of these

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[*FibreSonic*] already promises to make a major contribution to international health."

Yet another video (not part of the kit), "Why Herbs?," asks us to "imagine a world sometime in the near future...where disease and other physical ailments have been virtually eradicated, where heart disease, high blood pressure, even cancer are no longer a threat." Such a situation will remain unlikely, says the narrator, until people take responsibility for their own health and stop relying on modern medicine—which "has failed miserably" and whose "cut-and-burn methods" are "deadly." What is the "simple and time-tested" answer to the "dilemma" of nutritionally inadequate food? Herbs, without which "good health is nearly impossible." And what is "the primary obstacle preventing herbs from reaching every home in America?" Fear. "What is there to be afraid of?" asks the narrator. Better health? A longer life? Reduction of medical bills? The death of modern medicine? Simply beware, he says, of fraudulent products and disreputable manufacturers.

Another new sales aid, the *Pathway Research Manual*, gives elaborate instructions for combining foods to achieve what Matol considers the ideal balance of "alkaline-forming" and "acid-forming" foods. The average cost of Pathway products is said to be \$19 to \$50 per week (plus the cost of *Km*).

***Km*'s Promotion**

It is illegal for distributors to claim that *Km* is effective against any health problem. Matol's 1990 "Question & Answer" booklet states:

We market our product as a food supplement and we do not make any therapeutic claims, but we do believe that most people can benefit from our product; this is why we are confident enough to offer a 30-day guarantee on the product.

And Matol's *Journal* warns:

An independent Matol Botanical International Ltd. Distributor is not permitted to diagnose or prescribe the products as a specific treatment for *any* disease or condition. To do so is likely in contravention of the law and is not condoned by Matol Botanical International Ltd.

Matol Botanical International Ltd. does not make any claims whatsoever about its products and does not sanction or permit any of its Distributors to make any claims.

Although company literature makes no *direct* therapeutic claims for *Km*, one brochure provides pictures of its 14 herbs and attributes beliefs about their use to various peoples in the past. For example, it says that Indians of Virginia believed that passion flower could "quiet and soothe the body" and that native Indians along the Pacific coast of North America believed that tea made from saw palmetto berries "soothed and quieted the mind." Another brochure quotes Karl Jurak stating, "In 60 years, given time, I have never seen this product fail once in helping to do some good for the people using it."

It is clear that some distributors make therapeutic claims. Some, for example, are circulating typed reports associating *Km*'s herbal ingredients with organs and health problems that each herb supposedly can help. One report, for example, states that alfalfa "is used as a blood thinner, and a kidney cleanser. Athletes use this herb for indurance [sic] and energy." Another claims that *Km* is a "blood purifier."

Have these or similar claims been scientifically tested? The question- and-answer booklet acknowledges:

Other than those done by Dr. Karl Jurak way back in the beginning, no tests of any kind have been done. We do not believe that we will enter into any such programs since trying to prove what this product seems to have done for some people would be next to impossible. However, Matol's *Km* formula has been tested in the finest laboratory in the world for over 60 years—the human body.

The booklet also states that "if there were any contra-indications when using our products, the FDA would have instructed us to indicate that on our label. As you can see, the label does not carry any contra-indications....If there are any secondary effects, they will appear briefly and will not be severe. These possible secondary effects could be manifested by diarrhea, constipation, lightheadedness, headache, itchy sensations, or nausea."

Originally, my sponsor said that the cost of *Km* is refundable. But later she added that the product had to be consumed regularly for 30 days—even if the buyer finds *Km* nauseating (as I did).

My First "Opening of America" Meeting

On February 13, 1991, I attended a 2-hour Matol corporate meeting in the Grand Ballroom of the Holiday Inn near LaGuardia Airport in New York City. A banner above the podium advised in French and in English: "GIVE AND RECEIVE." The banner also showed a chart with a crooked line slanting upward at about 45 degrees. Below it stood two displays of Matol products.

Opening remarks were made by "executive advisor" Jacobus Jeffrey, who wore a green "2 FOR FREEDOM" button on his lapel. (The slogan refers to the strategy of "two in-home meetings a week for financial freedom.") My sponsor—who referred to him as "Brother Jeffrey"—claimed that he was on the board of directors of a medical center in Brooklyn where Matol meetings were held regularly in a conference room. However, the center's chief executive officer denied that he knew anyone by that name.

Mr. Jeffrey is a trim-bearded, middle-aged, black man who speaks in measured tones. He welcomed an above-capacity, ethnically mixed crowd of well over 750 men, women, and children from New York and nearby states. He said he was "so excited" about this long-awaited first New York corporate meeting. He asked all the nondistributors to raise their hands and then to stand up. Their rising was met with applause. "You are our guests," he told them, and promised the audience—twice—that we would not walk out as we walked in, but would leave the meeting with a "different feeling." The meeting's

purpose, Jeffrey stated, was to build leaders in the tri-state area and in "the Matol family." "New York," he declared, "needs to be penetrated." Applause followed. At his request, the audience chanted one of Matol's mottos: "Helping people to help people."

The next speaker was David Gordon, a chiropractor from Bloomington, Indiana, whom Jeffrey introduced as a "field advisor" and a "special, special person" who had made more than \$100,000 in his first year with Matol. Before inviting Gordon onto the podium, Jeffrey displayed a copy of Matol's *Journal*, whose cover pictured Gordon and his wife.

Gordon, who is short, assured us he was standing. He asked us how we were tonight ("Great!") and how our day had been (the same). He told us his suits were at the airport in Chicago, spoke of his prior depression, and reminisced about his boyhood summers in Buffalo, New York. Then he recounted the circumstances leading to his embrace of *Km*. "All you need to do," he advised, "is share the product with people and get them drinking it, and it'll do the work for you. Have you noticed that?" The applause suggested that the audience agreed.

Then he asked how many of those present had been drinking *Km*. The response seemed to disappoint him. "That's all?" he asked. "You've never had the joy of tasting it?...You're in for a treat." He demonstrated the translucent measuring flask included in the distributor's kit, and advocated drinking *Km* from the flask in public to attract attention to the product.

Gordon said that "things started to happen" when he'd begun using *Km* in August 1989. Never a "morning person," for example, he had begun waking up 2 hours earlier than usual. After relating his wife's negative opinion of the product's odor, he described *Km* as a potential "disaster" from a marketing standpoint. "So I tell people: it looks bad, it smells bad, it tastes bad, and it works." To which my sponsor responded, "Amen." (So did I—to myself. *Km* looks like an extract of mud and tastes vile!)

Gordon said his father had been a practicing physician, his wife is a nurse, and he himself had planned in high school to become a surgeon. He was, thus, he said, a skeptic, and as such had approached the matter of *Km*.

What if *Km* doesn't work? "It takes time," he said. One third of *Km* users allegedly recognize benefits (unspecified) within a few minutes to a few days; another third within a week to a month; and another third within 1 to 3 months. According to a flyer: "The benefits of *Km* are immediate. But, the *Km* experience depends on a person's body awareness." The flyer identifies at least one alleged benefit: *Km* "facilitates...purification." In addition to being a "universal product," said Gordon, *Km* has the features of being both consumable and one of a kind. "We just happen to have a monopoly." When he announced that an East Coast warehouse would soon be established, the audience roared.

He then talked about soil depletion. "We have stripped from our food supply 70% of the nutrients that should be available to us. We're trying to run...on 30%." Cells, he said, "get pooped" running on 30%. "Maybe you noticed how tired Americans are?" He gave assorted statistics to support his sentiment that Americans are in bad shape.

Gordon said that about 3 years earlier, *Km* had been temporarily unavailable and sold for \$100 a bottle. "When you find out what's in that bottle," he explained, "you realize there isn't any price too high—if it's for someone you love." He described *Km* as a "universal product" from which anyone can

benefit, and implied that it "would actually enhance oxygen efficiency to all 60 trillion cells of your body." The remarkable and varied responses to *Km*, he added, are attributable to its "working at the cellular level."

Gordon summed up the Matol sales technique: "The bottom line that we're sharing with people is results. That's it. The product works....When you share stories of benefits with other people—not features of the product, [but] benefits—they will want to have it. When the perceived value of the product exceeds the cost, people will buy it....Our job [is] to tell stories." He stated that "FDA has approved [*Km*] for use by everybody...men, women, children, [the] elderly, pregnant women, infants...heart patients....It is a food supplement...a liquid salad." [Editor's note: This statement appears to be false. New drugs and food additives are subject to FDA approval, but herbs and supplement products marketed without therapeutic claims are not.]

Km, he said, "changes people physically, emotionally, psychologically, financially." He suggested that it can rehabilitate one's sense of humor. Later he described the new Pathway products, noting that "the carbohydrate is in a time-release form, so you get a constant energy curve all day."

Gordon also claimed that the Pathway "weight management program" brings about loss of "just nonstructural fat" and, furthermore, "actually sculpture[s] your body....The weight comes off in the right places." But the Pathway program, he counseled, won't work without *Km*, because "*Km* enhances the efficiency at the cellular level of utilization of all the nutrients." Moreover, he said, continued use of *Km* leads to better food choices: "You will desire better foods."

Gordon reported that sales hit \$1.5 million dollars one day around the time of a recent convention in Anaheim, California. He said February 1991 sales were projected to be nearly \$20 million, and that 1990 sales had been nearly \$200 million. Later he solicited testimonials from Pathway product users who had lost more than 10 pounds. The four respondents reportedly had lost an average of one pound daily.

When Gordon was through, Jacobus Jeffrey, joined by 18 "achievers" on the podium, presided over a prolonged series of bilingual mutual and self-congratulations. Then he introduced Matol's vice president of personal development, Dr. Clifford Baird (the "2 FOR FREEDOM" strategist), as a gentleman with "an educational background second to none." Dr. Baird, he said, had four traditional degrees plus three others—in "life," mountaineering, and "streetology."

Baird, nearly 6 feet, 7 inches tall, told us how wonderful we were and identified his four degrees: a Bachelor's in math, an M.A. in industrial psychology, an M.B.A. in banking and marketing, and a Ph.D. in psychology. Then he declared: "Wisdom is not the byproduct of education." Baird's talk was filled with clichés. He struck me as a pop psychologist-preacher, but the audience responded to him with much laughter and applause.

My Second Meeting

On April 10th I attended another "Opening of America" meeting, which drew some 2,000 persons to the Radisson Hotel in Hauppauge, New York. A banner proclaimed 1991 "The Year of Freedom," and "New Age" music filled the hall before

commencement. I had come by chartered bus with Mr. Jeffrey's group of 30.

The opening speaker was John Paul Dadufalza, a 24-year-old of Philippine descent whose picture appears on the cover of Matol's July 1991 *Journal*. A former flight attendant, he reportedly earned \$20,265 during his fourth month as a distributor. My sponsor likened him to Michael Jackson. His exotic good looks and polished appearance in a tailored suit had made him the most conspicuous award recipient at the previous meeting.

John Paul exuberantly recounted his embrace of *Km* and Matol, which he attributed to his mother's nagging. Unspecified "health challenges" finally prompted him to try *Km* 6 months after his mother had given him a bottle. However, he did not specify any benefit of *Km* other than financial. He asked people who had lost weight on the Pathway program to stand and called on the "big losers" to deliver testimonials.

I was disappointed to learn that the legendary Karl Jurak would not appear. Nor would Robert Bolduc. (My sponsor informed me he was busy pursuing a doctorate in network marketing.) But Anthony Jurak and Sam Kalenuik took turns on the podium.

Anthony Jurak told us it was his 53rd birthday; he looks about 10 years younger. He intimated a belief in destiny, and explained Matol's motto, "Give and receive: We know for sure today that if you give, eventually you receive." Later he added: "If the dream is big enough, the facts don't count" and "Freedom is going on a holiday and not having a return ticket."

Kalenuik is 40 years old, short, and silver-haired. He claimed he could tell us in 25 minutes or less how to get our

lives in order. He reiterated Anthony's saying about dreams and facts, and expressed a strong desire "to have the biggest impact in 2,000 years on world peace." He also expressed belief in "synchronicity": "Meaningful coincidences will occur in your life when you're headed in a right direction." Becoming increasingly metaphysical, he insisted: "Thoughts change matter. Thoughts *are* things." Babies, he continued, have no limitations at all. He asked how many of us believed in God. About half the attendees raised a hand, but my sponsor assured me that the majority believed. Kalenuik told us we were all essentially equal, and that inequality results from wrong thinking.

The Bottom Line

Km epitomizes the "New Age" quest for a nutritional quick fix. It has never been proven safe or effective for any purpose except making money for some of its distributors. The identity and amounts of its herbal ingredients are not public information. It is promoted with glittering generalities by the company and "unauthorized" therapeutic claims by its distributors. Those who feel better after using *Km* are encouraged to attribute any improvement to the product's potency. These simple tactics—plus the lure of easy money—have enabled Matol to pull wool over the eyes of a multitude of people from all walks of life.

Mr Raso, a registered dietician, lives in New York City and is preparing a book on "paranormal" nutrition.

"HEALTHY CELLS" OR UNHEALTHY SALES?

William M. London, Ed.D.

A few months ago a poster on the bulletin board of my local public library announced seminars in Cleveland and Akron by Albert Earl Carter, author of *The Cancer Answer*. The seminars were sponsored by three Matol distributors from the North Canton area. They also had advertised in the *Akron Beacon Journal* and sent flyers to chiropractors and massage therapists.

I attended the seminar in Cleveland. The advertised cost was \$20 in advance or \$25 at the door, which covered two people and an autographed copy of *The Cancer Answer*. However, I came alone and was charged only \$10. The seminar lasted 2 hours and was attended by about 50 people. According to one of the promoters, Al had received a standing ovation the previous night at a seminar in Canton attended by 150 people.

Two weeks later my book arrived in a package containing a blank billing slip from the American Institute of Reboundology in Cypress, California, the address given in *The Cancer Answer* for Al Carter. According to the book's cover, "We are not being told the truth about cancer," "Cancer is not a disease," and "The answer to cancer has been staring medical science in the face for at least a decade."

Al doesn't claim to be a scientist or a medical doctor. ("What I am is an investigative scientific reporter, so I can't qualify for the title of "quack" he claimed in the book.) His answer to "cancer and other old-age diseases" is his "Healthy Cell Concept," which he depicts as a rectangle with four

quadrants that he calls cell exercise, cell food, cell environment, and cell communication. The center of the rectangle contains a cartoon character of a healthy cell named Larry Lymphocyte who converses with Al throughout much of the book.

"Rebound exercise" is part of Al's answer. According to Al, rebounding on a minitrampoline "can increase the activity of the Lymphatic System by as much as thirty-fold and increase the number of garbage-eating white blood cells as much as three times! Now, all you have to do is feed those cells good cell food so that they are healthy, and let them go." At the seminar, Al called himself "the world's foremost authority on the most efficient and effective form of exercise yet devised by man" for "every cell of the body." He also boasted that rebounding is the top form of exercise recommended in literature for Matol's Pathway Weight Management Program and by the National Aeronautics and Space Administration (NASA).

About 6 weeks after the seminar I received issues #2 and #3 of *On the Rebound*, a newsletter published by Fit for You International of Whittier, California. Its masthead identifies Sylvia Ortiz (an aerobics instructor) as president & editor-in-chief; Jose Ortiz, M.D. (Natural Mr. America 1986) as medical advisor; and Albert Earl Carter as "rebound consultant." One issue of the newsletter displayed the "Healthy Cell" concept with a product mentioned in each quadrant:

•The "Cell Exercise" product is the PROBOUNDER 2000, a minitrampoline that Fit for You markets with a suggested retail

price of \$195 and a dealer's cost as low as \$100. An accompanying ad promises that distributors will be shown how to sell it as a single product and "in conjunction with any other health care products you currently market." Sylvia Ortiz claims that the PROBOUNDER 2000 is "the perfect adjunct to chiropractic due to its unique ability to help the body remove lactic acid and other toxins." When the device is prescribed by a chiropractor, she noted, insurance companies often pay up to 80% of the unit's cost. "Using typical sales of 20 per month...you could also expect an additional \$22,800 in annual profit to you!" In a sidebar, one of the seminar's sponsors was congratulated for selling 100 units by promoting "healthy cell" seminars in Ohio and Pennsylvania. For \$390, Fit for You even offers 4-day seminars for certification in "reboundology."

•The "Cell Food" product is *Km*. In his lecture and in the newsletter, Al said, "I have studied *Km* and personally feel it is a perfect cell food." He also identified inositol, choline, aminobenzoic acid, B₁₅, and B₁₇ (laetrile) as "cell foods" and said (incorrectly) they are water-soluble vitamins. Newsletter #3 contains a full-page ad for *Km*, which lists 12 *Km* distributors who serve 37 states. When I called one listed for eight northwestern states, I was greeted by a taped message promoting both *Km* and the "Healthy Cell" concept.

•The "Cell Environment." product is a water purifier made by Trinisol Water Systems, and sold by Fit for You. Al emphasizes that pure water is important to "healthy cells" and says that chlorination and fluoridation of community water supplies are hazardous to health. *On the Rebound* supports this view with an article on water purification by Trinisol's president, Fred Van Liew, who is described as host of a radio talk show on which he interviews "this country's leading natural health care experts."

•The "Cell Communication" product is "Subliminal Audio Tapes,"—which Fit for You advertises for appetite control, building a strong immune system, and freedom from stress.

•*The Cancer Answer* suggests that most cancers are under control until doctors tell patients the diagnosis. According to the book, when their cells receive this message, "they simply prepare the body for death. They give up and quit fighting. The immune system slows down and becomes inefficient, giving the cancer an opportunity to take over." A positive attitude—aided by the tapes, of course—conveys "psycho-immunity" to cells.

Fit for You also sells Al's first book (current retail price \$12.95) *The Miracles of Rebound Exercise*, which Al claims has sold 1.3 million copies—a remarkable achievement considering that it is not listed in *Books in Print*.

In *The Cancer Answer*, Al recommends various brands of "food supplements" and other products available from New Dimensions Distributors, in Fountain Hill, Arizona. Two days after calling its toll-free number (1-800-624-7114) I received the *Healthy Cell Catalog* and an issue of *Healthy Cell News* (featuring, on page 1, the four quadrants and Larry Lymphocyte's picture). The catalog's many nostrums included "antiaging nutrient" coenzyme Q₁₀, *Berry Trim* (a bogus weight-reduction product), and *Dr. Rinse Formula* (for "aiding in the fight against cardiovascular and circulatory problems" and easing the pain of arthritis). The "newspaper" included articles and ads promoting homeopathic tinctures (for lost libido and various other health problems) and many other dubious products.

"Professor Carter" (as Al likes to call himself) claims to have put "all the pieces of the puzzle together" for answering not only cancer, but arthritis and other afflictions. He is networked with chiropractors, *Km* distributors, and other assorted zealots whose claims are fanciful and sometimes illegal. Their real product is not "healthy cells" but self-delusion.

Dr. London is assistant professor of health education at Kent State University and president of the Ohio Council Against Health Fraud.

NEW REPORT ON THE WEIGHT-LOSS MARKET

Surveys have estimated that the percentage of overweight adults in the United States is between 25% and 64%, depending on the criteria and methods used to collect the data. The "weight-loss industry" is high in salesmanship but low in accountability of both dollar volume and success percentages. Certain statistics, known only to operators of privately held companies, may not be reliable and may be inflated to make programs seem more popular.

Despite these difficulties, Marketdata Enterprises, an independent market research and consulting firm, has issued a 252-page report filled with tidbits and tabulations to characterize and forecast the weight-loss marketplace during the next 5 years. The July 1991 report estimates total 1990 sales of \$30.2 billion in 1990, including: over-the counter (OTC) appetite suppressants (\$1.47 billion); low-calorie prepared foods (\$1.97 billion); diet soft drinks (\$13.3 billion); artificial sweeteners (\$1.19 billion); commercial weight-loss centers (\$2.0 billion); hospital- and MD-based weight-loss programs (\$1.6 billion); nonresidential fitness and exercise clubs/spas (\$6.4 billion); residential health spas (\$1.55 billion); and diet books and cassette tapes (\$0.67 billion).

The Marketdata study, called *The U.S. Weight Loss & Diet Control Market*, was compiled from trade association

surveys, government and company reports, and extensive telephone surveys by Marketdata's staff. The report also notes:

•Seventy percent of teenage girls are dieting. The explosion of eating disorder cases is partly exacerbated by misuse of OTC diet products, most notably phenylpropanolamine.

•Most dieters with money to spend are "cosmetically obese" (20 to 30 pounds to lose) rather than medically at risk.

•Recent government investigations have pressured many commercial operators to promise to institute methods for collecting and reporting data on their customers' experiences—including their ability to keep weight off once it has been lost.

•The use of relatively low-cost meal-replacement products has increased while medically monitored very-low-calorie diet programs have suffered declining enrollment.

Marketdata's report, although intended primarily for commercial parties, might be useful for individuals interested in probing further into the economics and organization of the weight-loss marketplace. The price is \$995, with a 20% discount to *Nutrition Forum* subscribers. Individual sections of the report can be purchased separately. For a free brochure and table of contents, write Marketdata Enterprises, Inc., P.O. Box 436, Lynbrook, NY 11563 or telephone 516-791-6579.

BRIEFS

L-tryptophan damage award. A panel of arbitrators has awarded nearly \$2.2 million to 3 people from Oregon who developed eosinophilia-myalgia syndrome after taking tainted L-tryptophan supplements. One died and the other two have been hospitalized repeatedly for severe pain and fatigue. The illness has been traced to an impurity introduced during a new process used by Showa Denko, a large Japanese supplier. About 800 suits have been filed against the company.

Libel suit settled. In an out-of-court settlement, three defendants have agreed to pay a total of \$60,000 to John Renner, M.D., a Kansas City physician who has been actively engaged in fighting quackery. Dr. Renner's suit, filed in 1988, charged that Kurt Donsbach, Maureen Salaman, Clinton Miller, Joseph Lisa, the National Health Federation, and a publishing company operated by Donsbach had disseminated false and defamatory statements about his professional activities, mainly through sale of a book written by Lisa and promoted by the others. When the suit was filed, Donsbach was NHF's board chairman, Salaman its president, and Miller its legislative representative. The settlement pledges payment of \$29,000 by Donsbach, \$25,000 by Miller, and \$6,000 by Salaman over a 3-year period. NHF is noted for its aggressive lobbying and letter-writing campaigns in support of "alternative" methods of health care. Donsbach and Miller resigned from the group during 1989.

Mexican clinic operator convicted. James Gordon Keller, who operated St. Jude's Clinic in Tijuana, Mexico, has been convicted by a jury in McAllen, Texas, of 11 counts of using interstate communications to defraud patients. Prosecutors claimed that he told would-be patients that they could be cured of cancer through the use of crystals, herbal teas, vitamins, massage, and injections of an unapproved drug called "tumorax." In March, Mexican authorities delivered Keller to U.S. officials so prosecution could take place.

New "credentials" for health food retailers. The National Nutritional Foods Association (the primary trade organization for health food retailers, manufacturers, and distributors) and Bastyr College (a naturopathy school) are jointly sponsoring a 3-step course on retailing, introductory nutrition, and "advanced study" of such topics as herbs, homeopathy, sports nutrition, and skin care. In an interview reported in *Natural Foods Merchandiser*, NNFA's executive director said that the knowledge imparted to store managers and employees "can only lead to greater public confidence and a more professional industry." *Natural Foods Merchandiser* also reported that NNFA and its regional chapters contribute \$100,000 to the program.

More evidence against "clinical ecology." A study of 26 "environmental illness" patients found that their prevalence of major psychiatric disorders was more than twice as high as that of a control group [JAMA 264:3166-3170, 1990]. Reprints are available from Donald W. Black, M.D., Dept. of Psychiatry, University of Iowa College of Medicine, 500 Newton Road, Iowa City, IA 52242.

USDA hotline. The U.S. Department of Agriculture's Meat and Poultry Hotline (800-535-4555 from 10 a.m. to 4 p.m. EST) deals with proper handling of meat and poultry. Last year its 14 home economists fielded 80,000 questions from consumers.

AIDS food safety advice. The FDA, in cooperation with the U.S. Centers for Disease Control, has produced a 15-minute videotape, entitled *Eating Defensively: Food Safety for Persons with AIDS*. It covers foods to avoid, risks of contracting foodborne diseases, correct methods of food preparation and handling, and food safety advice to follow in kitchens, grocery stores, restaurants, and foreign countries. Copies are available for \$8.95 from the National AIDS Information Clearinghouse, P.O. Box 6003, Rockville, MD 20850. Once purchased, the tape may be reproduced without charge. Free brochures on the same subject are available on request.

In-case-you-missed-it department. According to an ad in *Horoscope* magazine, "your astrological sign can predetermine health and well-being!" Fortunately, *Astrological Vitamins* "specifically formulated" to be "compatible with your own individual astrological sign" are now available so you can "protect yourself from your own health weaknesses!" The ad explains that "many astrologers believe Aries may have poor eyesight and vitamin A helps maintain normal vision" and that "Taurus is prone to throat problems and vitamin C may help increase resistance to colds." The cost is \$22.95 for a 30-day supply (or \$39.90 for a 2-month supply) plus a free crystal pendant for "luck, health, and long life."

"No cholesterol" labeling attacked. The FDA has ordered three manufacturers of vegetable oil products to stop making "no cholesterol" claims on their labels. The cited products had displayed such a claim together with a picture of a heart or electrocardiogram. The FDA stated that this is misleading because it suggests that the product by itself can benefit general health but fails to reveal that (1) other dietary factors and overall weight control are necessary to achieve a healthy heart, and (2) the product is high in fat and that excess fat in the diet is a general health risk.

"Fast food" guidebook. Dietitians at Riverside Methodist Hospitals have developed *Food Facts Fast Foods Pocket Edition*, a 50-page guide to informed choices involving 480 lunch and dinner items at 16 leading fast-food chains. For each item the booklet charts total calories; calories from fat; grams of fat, carbohydrate, and protein; grams of saturated fat; milligrams of cholesterol; milligrams of sodium, and exchange values. A brief introduction explains how to make choices compatible with the 1990 U.S. Dietary Guidelines. Single copies are \$3.75 each; bulk orders (6 or more copies) are \$3.25 each from Gail Crosser, Nutrition Services, Riverside Methodist Hospitals, 3535 Olentangy River Road, Columbus, OH 43214.

New group hopes to protect nonstandard practitioners. A dentist opposed to the use of mercury-amalgam fillings has formed what he calls a "minority trade association" called the International Association of Dentists and Physicians. The purpose of the group, which is open to all types of licensed or "certified" health care providers, is to set standards for unorthodox methods that will be recognized by insurance companies, regulatory agencies, and the courts.

Notable quote. "Instead of putting their energy into coming up with a repeatable experiment as free as possible of methodological flaws, fringe scientists usually expend it in creating a blast of hot air and ad hominem attacks on their critics....Much of fringe research is the dilemma of a man in a boat who rows from one side: No matter how long or how hard he works, he never succeeds in doing anything except going in circles, never realizing that it isn't his dedication of his strength but his method that is flawed. Until fringe research puts both oars in the water, it is doomed to remain where it has always been: spinning aimlessly on the shores of science.—*Stephen Peterson, Skeptical Inquirer, Summer 1989.*

Vitamin politics. *American Druggist* has reported that the National Association of Retail Druggists' chief lobbyist is upset with Inner Circle, a Republican group whose members contribute at least \$1,000 per year to help elect a Republican majority in the Senate. In May 1991, Inner Circle members were informed of new member services, including discounts on drugs through a J. C. Penny Co. Inc. mail-order subsidiary and cut-rate vitamins and other health products from Bronson Pharmaceuticals. According to the article, NARD's lobbyist is irate about the glowing terms with which these benefits were described. NARD has also expressed concern that the FDA has advised consumers to seek lower prices through a discount mail-order pharmacy, such as the one operated by the American Association of Retired Persons.

Nutri/System sued again. *Newsday* has reported that 18 New York State residents have sued Nutri/System, claiming that its weight-loss regimen was responsible for damaging their gallbladder, which had to be removed. The suits charge that the company failed to warn people that rapid weight-loss can cause cholesterol-saturated bile to accumulate as gallstones. Nutri-System has denied any wrongdoing in more than 500 similar lawsuits filed throughout the country.

Unsafe recipe recalled. *Gourmet* magazine has notified its subscribers that a cookie recipe in its July 1991 issue contained an unsafe ingredient. Instead of 1/4 teaspoon of wintergreen extract, the recipe called for 1/4 teaspoon of wintergreen oil, a substance that can cause allergic reactions.

Nutrition education for medical students. The H. J. Heinz Company Foundation has given \$243,130 to the preventive medicine department of Rush Medical College (Chicago) to develop a computerized nutrition curriculum for medical students. The program will focus on how nutrition relates to disease and how physicians can guide patients to healthful diets.

Vitamins may cause facial eruption. A 53-year-old woman who began taking dietary supplements on advice of a health food store developed acne rosacea resistant to standard medical treatment. The supplements included 100 mg of vitamin B₆ and 100 µg of vitamin B₁₂ daily. Her symptoms cleared up within 3 weeks after stopping supplementation, returned after taking half the previous dose, and promptly cleared up when she stopped the vitamins again [*Cutis* 48:119-120, August 1991].

Fish inspection increased. The FDA has launched a special inspection of the nation's 4,100 seafood processing plants and other seafood establishments. It plans to complete the process within a year to evaluate the quality of seafood handling. The agency also announced that it is increasing its efforts against "shellfish bootleggers," who harvest and sell shellfish illegally from contaminated waters. Annual consumption of seafood reached nearly 16 pounds per person in 1989, an increase of nearly 60% over the past decade. The National Academy of Sciences said that despite increased consumption, reported cases of seafood-borne illnesses have not increased.

AMA modifies its cholesterol campaign. The AMA Campaign Against Cholesterol has a new name and logo. The campaign, which began in 1988, is cosponsored by a pharmaceutical firm and several food companies. Its new name is the AMA Cholesterol Education Program. Its logo no longer includes the AMA seal, and its messages state that the AMA endorses no products. These changes were made in response to FDA concerns that the campaign might constitute an endorsement or an implied health claim for the products.

Pediatricians blast food ads. The American Academy of Pediatrics wants television food advertising aimed at children stopped. In an updated policy statement, the Academy charged that the primary goal of children's television is to sell products to children. According to the Academy, young children cannot distinguish between programs and commercials and don't understand that commercials are designed to sell products. The policy statement also noted: "Television shows promote toys. The same toys are used to promote cereals and other foods. Commercials for the cereals, named after the toys, indirectly promote the toy and the toy-based program as well as the cereal and other related products."

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QUACKERY AND THE FDA: A COMPLICATED STORY

Stephen Barrett, M.D.

The U.S. Food and Drug Administration (FDA) tries to ensure that all products marketed for the prevention or treatment of disease are safe and effective. How much can it protect us from quackery?

In 1979, at the request of an FDA official, I obtained evidence that a vitamin concoction was being illegally marketed as a remedy for high blood pressure, stroke, arthritis, atherosclerosis, glaucoma, angina, high cholesterol, and poor blood circulation. A few weeks later, an FDA inspector came to my office, filled out papers for me to sign, took the evidence, and reimbursed me for expenses. To my great surprise, however, no prosecution took place. In fact, the product is still sold today. This experience provided my first clue that something was wrong with the FDA's enforcement policy toward health frauds. Over the years, Congressional oversight committees and FDA advisory panels have reached the same conclusion. Americans have far less protection from quackery than they realize.

Organized Quackery: Drugs in "Disguise"

Ineffective products marketed for the treatment of disease can harm or even kill people by diverting them from effective treatment. For this reason, the Federal Food, Drug, and Cosmetic Act prohibits the marketing of health products that have not been proven effective as well as safe for their intended purpose. This law—which is primarily enforced by the FDA—applies not only to prescription drugs but also to vitamins, minerals, amino acids, and any other nutrients that are claimed to be effective against any disease.

Despite this fact, manufacturers aligned with the health food industry are marketing hundreds of unproven "dietary supplements" intended to be used against disease. The intended uses—such as "for strengthening the immune system" or "for preventing cataracts"—are almost never printed on

product labels, which would make the products easy targets for regulatory action. Instead, the claims are spread separately through books, magazine articles, and radio and television talk shows, all of which are protected by the doctrines of free speech and freedom of the press.

Cautious manufacturers rely on these media outlets to inform prospective customers what the ingredients in their products are for. However, many manufacturers provide health-food retailers with literature and other information to be distributed in the relative privacy of their stores. In May 1985, following an extensive undercover investigation, *Consumer Reports* listed 42 companies whose literature contained illegal claims that various products were effective against cancer, atherosclerosis, prostate trouble, sexual dysfunction, high blood pressure, and many other ailments. The article also chided the FDA for not doing enough to police the marketplace.

Instead of acknowledging the seriousness of the problem, FDA officials attempted to downplay its significance. In a prepared statement, they claimed that "many of the products mentioned in the article were known to the FDA and were under investigation, covered by the OTC drug review, or already acted upon Those new to the agency will be scheduled for coverage in the future."

This statement was deliberately deceptive. It was true that many of the products were "known to the FDA." However, an FDA press officer told me that 25 of the 42 companies were not "known to the FDA"—despite the fact that I had mailed information about eight of them to the FDA's Health Fraud Branch as well as to its Commissioner and chief enforcement officer six months before the article was published. Only ten of the rest had been subjected to enforcement action—in one case 23 years previously—and several of these had continued to break the law despite what the FDA had done. Four other companies were said to be "under investigation." The FDA never asked for the evidence collected by *Consumer Reports* and stopped only a few of the violations the article had revealed.

Further Evidence of Weakness

The FDA's impact on the marketplace can be judged by observing the number of illegal supplement products sold, how long they remain on the market, and how long the FDA takes to act after it becomes aware of violations.

The most efficient FDA enforcement action I have ever seen was taken in 1986 against United Sciences of America, a multilevel company which claimed that its nutritional products would help prevent cancer and heart disease. Using videotaped endorsements from prominent scientists (some of whom later charged that the endorsements were used without their permission), the company quickly built sales to several million dollars per month. However, within six months after learning of the illegal claims, the FDA sent a single letter ordering the company to stop making them. The resultant scandal plus action by several state attorneys-general quickly drove the company out of business.

Unfortunately, this degree of regulatory success is not common. The following examples are more typical.

- In 1983, a manufacturer of fish oil capsules distributed a booklet stating that fish oils were effective in preventing heart disease. Although this claim was based on a well designed scientific experiment, the evidence was far from sufficient to justify self-medication by the general public. Acting on a tip from me, the FDA ordered the company to recall the booklet, which it did. However, the FDA took five years to stop other companies from making similar claims in ads. By that time total fish oil sales were close to \$100 million a year and their intended use was firmly established in the public's mind.

- During the 1980s the amino acid L-tryptophan was marketed as an aid for insomnia, weight reduction, premenstrual syndrome, and several other problems. These claims were illegal. In 1989 L-tryptophan was implicated in an outbreak of eosinophilia-myalgia syndrome, a rare disorder characterized by muscle and joint pain, weakness, swelling of the arms and legs, fever and skin rash. More than 1500 cases were reported, including at least 28 deaths and many cases of severe disability. Although the problem was caused by a contaminant in the manufacturing process, the FDA might have prevented the outbreak by stopping the illegal claims before L-tryptophan became established in the marketplace.

- Since AIDS became a household word, many companies have marketed nutritional products said to "strengthen the immune system." All of these products are fakes. More than two years after the product category had established its market niche, the FDA stopped some companies from marketing them. But others continue to do so.

- Marketing of *Cal-Ban 3000*, a guar gum product claimed falsely to produce automatic weight loss, began in 1986 and continued despite action by the Postal Service and the Iowa Attorney General. The FDA, which could have ordered the marketing stopped, said it would not do so because guar gum was still under review as an ingredient in over-the-counter (OTC) diet products. The FDA stated that as long as guar gum did not present a health hazard, it could be marketed at the

manufacturer's discretion. The OTC review process had begun in the early 1970s and had no completion date targeted. Early last year, at a Congressional hearing, an Iowa Assistant Attorney General accused the FDA of giving purveyors of diet fraud "full reign" to violate the law for almost 30 years, with "resulting consumer losses . . . in the billions of dollars." Pressed by Congressional staff members, the FDA announced that guar gum would be banned along with more than 100 unproved ingredients used in OTC diet products. (The ban will be scheduled to take effect in February 1992.) Meanwhile, it turned out that *Cal-Ban* was not safe because when placed in water, guar gum tablets swell to several times their original size and have the consistency of putty. In 1989, the FDA was notified that two *Cal-Ban* users had suffered serious esophageal obstruction. However, it did not order the marketing stopped until a year later. By that time at least 17 cases of esophageal obstruction, including one death, had been reported.

- More than 100 companies are marketing vitamin and amino acid concoctions said to increase stamina and endurance and help build big muscles. All of these products are fakes. Lack of FDA action has enabled these so-called "ergogenic aids" to grow to a \$100 million a year rip-off. An FDA official has told me that since the products appear to be physically harmless, they are likely to remain "low-priority" for regulation.

- In 1986, while working on an article about homeopathy for *Consumer Reports*, I spent more than two hours with the FDA's top enforcement official, Joseph Hile, Associate Commissioner of Regulatory Affairs. During the interview I asked him to examine a homeopathic home remedy kit and tell me whether its labeling was legal. The kit included products called *Hepatic Dysfunction* and *Glandular for Men*. After examining the kit, he began pacing the floor and said he couldn't answer my question because the situation with homeopathic products was extremely complicated—and if he said the labeling was illegal, he would be obliged to take action. After the interview ended, I showed the kit to a member of the FDA's Health Fraud Branch who said, "Sure it's illegal. Product labels must be written entirely in English. These are not." No enforcement action was taken. Hundreds of homeopathic remedies still are marketed for the treatment of health problems for which they have no proven effectiveness.

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Many Pressing Issues

Ask any FDA official why the agency has not been more effective against health frauds and you will get essentially the same answer: "We'd like to devote more attention to health frauds but the FDA's limited resources are not sufficient to do everything that needs to be done." I believe this statement is true but incomplete.

The FDA is responsible for ensuring that our food is safe and wholesome; that cosmetics are safe; that drugs and therapeutic devices are safe and effective; and that all of these products are honestly and informatively labeled. These tasks are enormous. About 25¢ out of every consumer dollar in the United States is spent on FDA-regulated products—produced or distributed by close to 90,000 companies. The problem of health frauds has had to compete for attention with the AIDS epidemic, the high cost of pharmaceutical research and development, criminal tampering with foods and drugs, concerns about the safety and efficacy of generic drugs, questions about food safety, and many other pressing issues.

In 1983, as part of an extensive 4-year investigation of frauds against the elderly, the late Congressman Claude Pepper asked federal agencies what they were doing about quackery. The FDA replied that \$1.8 million (0.5%) of its \$362.7 million budget had been allocated for 1983, but this included educational activities and publications in addition to enforcement actions.

In May 1991, a prominent FDA advisory committee concluded that, despite a \$682 million budget and approximately 8400 full-time employees, the FDA was no longer capable of fulfilling its statutory obligations. Although public health had not yet been significantly threatened, the committee noted, "In the past decade . . . Congress has relentlessly added new responsibilities without providing the resources to carry them out. Many sources, the report also noted, "depicted an agency that is overextended, underfunded, and shackled by bureaucratic constraints."

In 1990 the FDA's enforcement staff included nearly 1000 investigators, compliance officers, laboratory personnel, and attorneys. During a typical year, the investigators visit about 20,000 companies within the United States and 400 abroad, review about 1½ million imported goods, and conduct 100,000 examinations at the wharves. In addition, agency scientists analyze 75,000 product samples each year. These activities typically result in 25,000 import detentions and 17,000 other regulatory actions ranging from simple warnings to product

recalls and court actions [FDA Consumer 25(1):7, 1991]. The vast majority involve safety violations rather than quack claims.

Uncertain Priority

In 1984, Frank A. Young, M.D., Ph.D., became FDA Commissioner and announced that fighting health fraud would have a high priority. Under his administration, the FDA established its Health Fraud Branch, cosponsored national and regional health fraud conferences, and distributed information packets to almost 20,000 newspapers, magazines, and radio and television stations, urging them to reject fraudulent ads. Although educational activities like these are important, they have little or no deterrent effect on lawbreakers.

When the FDA detects illegal marketing, it can issue a warning letter, initiate a seizure, seek an injunction, or initiate criminal prosecution. During my interview with Joseph Hile I asked why criminal prosecutions—with their potential threat of a prison sentence—were not used more often in food supplement cases. He replied that the Justice Department would not process them, so there was no point aiming in that direction. When I asked why he didn't make this problem public so that criticism focused on the FDA (by the *Consumer Reports* article, for example) could be redirected toward the responsible party, he said that it wasn't his place to do this.

A few months after my meeting with Mr. Hile, he retired and was replaced by John A. Taylor, who attacked the problem of health frauds much more aggressively. He initiated many important seizures that stopped manufacturers from making illegal therapeutic claims for their products. Mr. Taylor, who retired in 1989, is now a consultant to a prominent law firm in Washington, D.C. He credits the aggressiveness of his enforcement policy to "a change of philosophy from the top" initiated by Commissioner Young. In a candid interview, Mr. Taylor agreed that more criminal prosecutions are needed because companies may regard lesser enforcement actions as part of "business as usual." But he noted that criminal actions are time-consuming and require more levels of review as well as action by the Justice Department.

Mr. Taylor admitted that "during the early 1980s, there was a widespread perception that the Justice Department would not take our cases—and we didn't keep testing the Department by bringing new cases." Cases were presented during his administration, "but in busy jurisdictions—where drug trafficking is a problem, for example—those involving dietary supplements would go to the bottom of the pile."

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A Complicated Situation

During the past decade I have spent countless hours studying the illegal marketing of supplement products and talking with FDA regulatory officials in an attempt to understand what is wrong and what can be done to remedy it. Here are my conclusions:

- Health food industry manufacturers are well funded, well organized, and well informed. They will continue to make illegal claims for their products as long as they can get away with making them.

- Regulatory actions during the past decade have had little deterrent effect on the health food industry because they rarely have interfered with profitability.

- The only way to reduce profitability is to combine rapid detection, rapid enforcement action, severe penalties, and increased public education.

- The FDA does not appear to have a systematic program of detecting violations by health food industry manufacturers. I believe this can be done with existing agency resources.

- The time between detection of an illegal promotion and regulatory action typically is not short enough to prevent violators from making substantial profits. One reason for this has been excessive bureaucracy within the FDA. Commissioner David A. Kessler, M.D., J.D., who assumed office this year, has already streamlined enforcement processes by reducing the levels of review needed to take action.

- The FDA classifies worthless yet harmless articles promoted to improve health, athletic ability or appearance as "economic frauds." This category of products is considered low priority and is virtually unregulated. This is unconscionable.

- Warning letters and injunctions inflict no financial penalty except what a violator pays its lawyers. Seizures are rarely large enough to drive a violator out of business. Many companies regard defending against these actions as part of the cost of doing business. This situation can be corrected by passage of a law enabling the FDA to initiate or assess large financial penalties against violators.

- Criminal prosecutions, which can result in financial penalties and/or prison sentences, could exert a deterrent effect on the health food industry if enough of them were carried out. However, there have been very few of them. (I know of only two between 1963 and 1990.)

- The reason for the small number of criminal prosecutions is not clear. FDA officials are at least partly responsible. So is the Justice Department. As far as I can tell, negotiations between the two agencies are considered delicate by the FDA and have never been publicly revealed. However, Congressional oversight committees are now aware of this problem.

- It is not clear whether the Justice Department and the criminal court system can handle enough health-fraud cases to make a difference. The general level of lawlessness in this country is so great that the criminal courts may not be able to handle more cases. Moreover, Justice Department priorities are strongly influenced by the Administration—which, under

Presidents Reagan and Bush, has tended to minimize government regulation. The food and drug industries—which are huge—are certainly not interested in seeing the FDA get more power. Sorting out the issues involved requires a Congressional investigation.

- The FDA does not have an efficient or systematic method of informing the public about its regulatory actions. Although the FDA Press Office issues news releases, most regulatory actions are not reported, and details of these actions are often difficult for reporters to obtain. I believe this problem can be corrected with existing FDA resources.

- The FDA maintains statistics on the number of regulatory actions (such as seizures) it has approved. However, it does not maintain statistics on the number of violations detected, the percentage of these against which action actually is carried out, and whether the action is effective. Thus neither the agency nor anyone else is unable to quantitate its degree of effectiveness in the marketplace.

- Many people within the FDA care a great deal about health frauds and feel frustrated that they cannot do more about this problem.

The Bottom Line

The only way to clean up the health food industry is a policy that *deters* violations. The Internal Revenue Service has made it clear that cheating on income tax can cost people dearly and land them in jail. The FDA should make it clear that cheating on product labels or accompanying literature can cost just as dearly. Cheating by supplement manufacturers is easy to detect because public disclosure is needed to attract customers. I believe there are many ways the FDA could achieve greater efficiency in its regulation of health frauds.

Commissioner Kessler has voiced great interest in attacking this problem. Congressmen Henry Waxman and John Dingell have introduced legislation (H.R. 2597, later modified to become H.R. 3642) to give the FDA more clout. The current version enables the Secretary of Health and Human Services, following an opportunity for an informal hearing, to stop the marketing of any food, drug or cosmetic considered to have reasonable probability of causing serious adverse health consequences or death. The bill would also enable the FDA Commissioner assess penalties (subject to court review) of up to \$250,000 for individuals and \$1,000,000 for companies for each violation of the Food, Drug, and Cosmetic Act. (Multiple violations would have a \$5,000,000 limit.) If these provisions are enacted, consumer protection will get a much-needed boost. The health food industry knows this and has generated many letters and petitions opposing this legislation.

Dr. Barrett, a practicing psychiatrist and consumer advocate, edits Nutrition Forum Newsletter and is co-author/editor of 27 books including *Health, Schemes, and Scams* [Consumer Reports Books, 1990]. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

BENEFITS AND RISKS OF VEGETARIAN DIETS

Susan Dingott, M.S., R.D.
Johanna Dwyer, Sc.D., R.D.

The eating patterns and health practices of vegetarians are as diverse as those of nonvegetarians (omnivores). Table 1 shows how vegetarians differ in the types of animal foods they eat. Vegetarians also vary in their attitudes towards supplementation, conventional medicine, and many other matters that may affect their health. Thus there are hundreds if not thousands of ways to be vegetarian.

To be safe from a nutritional standpoint, any eating pattern, vegetarian or otherwise, must provide balance, variety, and moderation. It must meet special nutrient needs that arise during infancy, adolescence, pregnancy, lactation, and other stages of life. It must accommodate special therapeutic considerations that individuals with certain health problems may require. It should also reduce risks of diet-related diseases.

Considerable agreement exists among experts about the dietary patterns that lower chronic disease risks. The American Heart Association, American Cancer Society, National Cholesterol Education Program, and Committee on Diet and Health of the National Research Council all recommend that adults reduce fat consumption to 30% of calories, with no more than 10% of calories as saturated fat. Some vegetarians—especially those who eat no animal foods at all—achieve these recommended intakes better than most omnivores [Am J Clin Nutr 48:712-738, 1988]. However, vegan diets may fall short in certain nutrients unless they are carefully planned.

Table 2 summarizes some of the positive aspects of vegetarian eating. But ill-planned vegetarian diets pose substantial risks (see Table 3). Problems most commonly occur with vegan diets because vegans eliminate all animal foods and may also avoid foods that are processed or not "organically grown." Vegans often refuse to use supplements and may eschew conventional medical care as well [Am J Clin Nutr 48:811-818, 1988].

One danger of vegan diets is insufficient energy intake (calories), especially during infancy and early childhood. If

energy needs are not met, body proteins will be broken down for energy, and this creates additional problems [Ann Rev Nut 11:61-92, 1991]. Therefore, adequate energy intake should be the foremost consideration in vegan dietary planning.

Low protein digestibility and quality are other potential risks. Protein quality depends on both digestibility and amino acid composition. The digestibility of protein in the usual American mixed diet is good, probably 95% to 96%. But plant protein foods high in fiber or other inhibitors may have digestibilities as low as 80% [World Health Organization Technical Report 724, 1985]. The digestibility of one vegetable protein in one child's vegan diet was found to be only 86% [Am J Clin Nutr 48:868-874, 1988]. Low protein quality is rarely seen in American vegetarian diets, except among vegans or fruitarians who eat small amounts of a single plant food (such as rice or fruit) as a staple. Single plant protein foods usually are lower in protein quality than most animal proteins because they lack significant amounts of various essential amino acids. Table 4 indicates the limiting amino acids (the essential amino acids present in shortest supply) in foods commonly consumed by vegetarians.

Plant foods low in particular amino acids can be combined with plant or animal foods containing them to provide a mixture containing all the essential amino acids. These combinations of "complementary" proteins compensate for the limited amounts of amino acids in the proteins of individual plants. Table 4 shows, for example, how legumes (which are low in two essential amino acids) can be combined with grains (which contain ample amounts of these two but are low in three others) to supply a mixture adequate to meet body needs.

It is not necessary to eat complementary proteins at every meal; it suffices to eat them over the course of a day. Both body protein breakdown and amino acids from recently ingested proteins provide a general body pool of amino acids that can temporarily fill any gaps.

TABLE 1. TYPES OF VEGETARIAN DIETS

Type	Prohibited Foods	Typical Health Practices
Vegan	Meat, fish, poultry, eggs, dairy products	Vegans tend to be physically active, avoid drugs and tobacco products, and rely on unconventional rather than conventional health care. Exceptions include macrobiotics who often smoke cigarettes and Rastafarians who smoke marijuana.
Lactovegetarian Lacto-ovo-vegetarian Semivegetarian	Meat, fish, poultry, eggs Meat, fish, poultry Meat, but may include small amounts of fish and poultry in the diet	Varies from group to group. Some use vitamin and mineral products; others do not. More likely than omnivores to be physically active and not smoke or use alcohol. Links to conventional health care system tend to be stronger than those of vegans.

Practical Tips

To assure adequacy with respect to energy and other nutrients, vegetarians should follow these simple principles:

- *Include foods that are calorically and nutrient dense.* Cooked legumes, whole-grain breads, enriched cereals, nuts, and nut spreads (such as peanut, cashew or tahini butter) are concentrated sources of calories, protein, vitamins, and minerals.

- *Choose foods that provide enough iron, calcium, and zinc.* Since their diets contain no animal foods, which are particularly rich in these minerals, this should be a special

concern for vegans. Small amounts of animal foods, such as milk and eggs, increase the bioavailability of iron from plant foods eaten at the meal. Plant sources of iron include dried figs, prunes and raisins, pumpkin seeds, sesame seeds, and soybean nuts. Iron-fortified cereals also are excellent sources of iron. To ensure that iron intake is satisfactory, eat good sources of vitamin C, such as tomato, broccoli, melon, or orange or other citrus juice at each meal. These foods enhance absorption of the iron in legumes and grains by making it more soluble.

Low-fat or skim milk, or milk products, such as yogurt and cheese are excellent sources of calcium for lacto-(ovo)vegetarians. Vegans can get calcium from foods such as

TABLE 2. POSSIBLE BENEFITS OF VEGETARIAN EATING

Characteristic	Comments/Possible Mechanisms
Leanness	Vegetarians tend to be more physically active than nonvegetarians [Am J Public Health 79:1283-1288, 1989]. Higher intakes of dietary fiber may decrease absorption of food by 2-3 % and contribute to a feeling of fullness.
Lower blood pressure	Vegans, who consume a diet very low in fat, tend to have blood pressures 10-15 mm Hg lower than nonvegetarians of similar age and gender. Much of this effect appears to be related to body weight rather than other dietary variables [Am J Clin Nutr 48:795-800, 1989].
Lower serum cholesterol	Total blood cholesterol levels are lower in vegans than in lactovegetarians or nonvegetarians. Whole-fat milk products and eggs tend to raise serum blood lipids due to their saturated fat and cholesterol content. Vegetarians often use non-fat or lowfat milk, and vegans use no milk or eggs at all [Am J Clin Nutr 48:712-738, 1988].
Less colon cancer?	Diets high in animal foods may increase the incidence of colon cancer by increasing the fecal concentration of various carcinogens [Nature 294:453-456, 1981, Br J Cancer 28:94, 1973]. A high intake of animal fat may increase the risk of colon cancer [N Engl J Med 323:1664-1672, 1990]. It also is possible that carcinogens are produced by cooking meat at very high temperatures.

TABLE 3. POSSIBLE RISKS OF VEGETARIAN EATING

Risk	Comments
Osteoporosis	There is little evidence that a vegetarian diet causes or cures osteoporosis. One recent study of 290 postmenopausal women found no differences in the measurements of bone mineralization between nonvegetarians and lacto-ovo-vegetarians [Am J Clin Nutr 50:517-523, 1989].
Rickets	Vegan children who have limited sun exposure may be at risk of developing rickets secondary to vitamin D deficiency. One study found very low intakes of calcium and vitamin D among macrobiotic infants. Only one received a daily supplement of vitamin D, and 15 (28%) were found to have rickets [Am J Clin Nutr 47:89-92, 1988]. Another study found low serum concentrations of vitamin D among lactating macrobiotic women in Boston [Obstet Gynecol 70:870-874, 1987].
Iron-deficiency anemia	In one recent study, low serum ferritin levels (a sensitive measure of iron storage status) were found in 5% of male and 27% of female lacto-ovo-vegetarians, and mean ferritin levels of omnivores were significantly higher than those of vegetarians [Am J Clin Nutr 45:785-789, 1987].
Macrocytic anemia	Signs of vitamin B-12 deficiency have been observed in some breast-fed infants of women who are strict vegetarians [Am J Clin Nutr 47:89-92 1988].
Emaciation or slowed growth	Excessive leanness and/or slow growth have been noted among vegan and vegetarian infants and young children after weaning [Am J Clin Nutr 47:89-92 1988].

TABLE 4. PROTEIN COMPLEMENTATION
 Proteins low in certain amino acids can be combined with others containing them to form complete amino acid mixtures.

Food Group	Limiting Amino Acids	Combine With	Examples
Legumes (beans, peas, lentils)	Tryptophan, methionine	Grains Nuts/seeds	Lentil soup with cornbread Peanut-sesame seed mix
Grains (wheat, rice, oats, barley, corn, rye)	Lysine, isoleucine, threonine	Legumes Dairy	Kidney beans and rice Whole-grain cereal with milk
Nuts/seeds (almond, cashew, filbert, pumpkin, sesame, sunflower, walnut)	Lysine, isoleucine	Legumes	Kidney bean soup with sesame seeds
Animal foods	Not as limited	Any of above	Vegetables with yogurt dressing

tofu, kale, broccoli, sunflower seeds, dried figs, tortillas, calcium-fortified *Total* breakfast cereal (48 mg/1 oz serving), or *Citrus Hill Plus Calcium* orange juice (160 mg/6 oz serving). Vitamin D is also needed to increase the efficiency of calcium absorption. Fortified milk, and milk products can provide vitamin D, but vegans who lack adequate exposure to sunlight (or who use sunscreens) may need to take a vitamin D supplement.

Lacto-ovo-vegetarians can get zinc from egg products.

Dried beans, peas, lentils, nuts and seeds are good plant sources of zinc. However, the zinc in fruits and vegetables is less bioavailable than the zinc from animal sources. Vegans and lacto-vegetarians may prefer to use yeast-leavened whole-grain products to increase the bioavailability of the zinc in whole grains by inactivating zinc inhibitors.

• Limit foods that are high in phytates (whole grains, bran, and soy products) and oxalates (spinach, rhubarb, and chocolate), since phytates can inhibit the absorption of iron, calcium, and zinc.

Vegetarians with special health problems may need expert help. The *Diet Manual, Including a Vegetarian Meal Plan* recently published by the Seventh-day Adventist Dietetic Association, P.O. Box 75, Loma Linda, CA 92354, is an excellent reference for health professionals.

Vegetarianism based on sound nutrition principles can be a healthful choice, but neither vegetarians nor omnivores have a monopoly on healthful eating. Vegetarians are just as diverse in their health status as are nonvegetarians. Similar health benefits can be gained from both well-selected omnivorous and vegetarian diets.

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BE WARY OF MAIL-ORDER HEALTH PRODUCTS!

A study of magazines, tabloid newspapers, direct-mail catalogs, television infomercials, multilevel companies, and other channels through which health-related mail-order products are marketed has concluded that almost none of them work as advertised. The study was conducted by Dr. Stephen Barrett with partial support from the Dick Goldensohn Fund, a New York City-based foundation interested in economic justice.

The study included a survey of one issue each of 463 magazines in national circulation during the summer of 1990. Dubious ads appeared in 56 out of 423 (13%) general audience magazines and 23 out of 40 (58%) health and fitness magazines. In the general magazines, about 50 companies advertised about 70 dubious products. In health-food publications, 15 companies advertised 24 dubious products. In fitness and bodybuilding magazines, 26 companies advertised more than 60 products. All but one product (a sweat-reducing device) were misrepre-

sented. Tabloid newspapers (*Globe*, *National Examiner*, *Sun*, *National Enquirer*, and *Weekly World News*), which Dr. Barrett surveyed for several months, contained several misleading ads per issue.

A booklet describing Dr. Barrett's study is available for \$3.85 from the American Council on Science and Health, 1995 Broadway, 16th Floor, New York, NY 10023. The booklet advises that no mail-order product can cause effortless weight loss; erase scars, wrinkles or "cellulite"; selectively reduce one part of the body; increase bust or penis size; prevent or cure hair loss; increase stamina, endurance, strength, or muscle mass; prevent aging; prolong life; prevent senility; increase memory; or increase sexual stimulation or pleasure. Nor can musical tapes with "subliminal" messages do anything more for physical or mental well-being than listening to ordinary music.

BRIEFS

Nutrition Forum changes publisher. Dr. Stephen Barrett, who has edited *Nutrition Forum* since its inception, is now also its publisher. The newsletter was published by the George F. Stickley Co. from October 1984 through December 1988 and by the B.J. Lippincott Co. from January 1989 through October 1991. Publication will continue bimonthly for at least three more years. A list of back issues can be obtained by sending a stamped self-addressed envelope to P.O. Box 1747, Allentown, PA 18105.

Court knocks chelation therapy. A federal court judge in Georgia has dismissed a bizarre claim asserted by a woman who suffered a stroke following surgery in 1989 for partial blockage of her left carotid artery. The woman had charged that her neurosurgeon had committed malpractice by failing to inform her that chelation therapy was a possible alternative. Georgia's informed consent law requires physicians, before performing surgery, to inform their patients of the risks and of "practical alternatives . . . generally recognized and accepted by reasonably prudent physicians." The judge ruled that the plaintiff had failed to prove that this standard had been violated. (The case was not dismissed because other allegations of malpractice are still pending.) Chelation therapy is a series of intravenous infusions containing an artificial amino acid (EDTA) and various other substances. Proponents claim chelation is an alternative to surgery because it can remove atherosclerotic plaque from the body's arteries. In 1985, an American Heart Association task force concluded that there is no scientific evidence to demonstrate any benefit.

Laetrile follow-up study. Three naturopaths from Oregon have published the results of their study of cancer patients they interviewed in 1983-84 at the clinic operated by Ernesto Contreras, Sr., in Tijuana, Mexico. According to their letter in the December 1991 *Townsend Letter for Doctors*, they were able to follow 22 late-stage cancer patients with a history of conventional treatment. All died of their cancer within two years, and no patient appeared to substantially outlive expected norms.

Garlic promotion recalled. Lichtwer Pharma U.S., which had publicized scientific findings that garlic tablets can lower blood cholesterol levels, has notified health-food retailers to return its previously distributed information. The notice, dated August 1991, states: "In response to numerous requests for specific information about KWAI, we have in the past sent you material discussing garlic and research concerning it. We would like to clarify that such research is still ongoing, and there is no scientific consensus in the U.S. at this time as to garlic's effect on human functions. . . . In view of the unresolved research status of the information conveyed in materials previously sent to you, and in light of legal questions raised by the FDA, it is critical that these materials not be distributed or displayed, or discussed with your customers. We request that you return immediately to us any previous materials we have sent you which could be considered to convey specific claims for KWAI."

Bill seeks to tighten health claims on food labels. H.R. 1662, the Nutrition Advertising Coordination Act of 1991, would amend the Federal Trade Commission Act to require food advertising to meet the requirements applicable to nutritional labeling of food. In addition, advertising that characterizes the level of fat, saturated fat, cholesterol, and/or fiber in a food product would also have to disclose relevant level(s) of total fat, saturated fat, and/or cholesterol. (Ads for "high-fiber" products, for example, would have to say how much fat the products contain.) The purpose of this bill is to require the FTC to abide by the regulations the FDA is developing for health claims on food labels.

Consumer attitudes. A poll of 1,000 adults age 25 or older suggests that Americans can be placed into three groups. The "I'm Already Doing It" group (26%) considers nutrition and dietetics important and tends to cook from scratch, purchase lowfat or fat-free products, and read nutrition information on food labels. However, individuals in this group are more likely to have misconceptions about diet, including the belief that there are "good" and "bad" foods. The "Don't Bother Me" group (36%) feels that diet and nutrition are "not much of an issue." In this group, 83% realize they aren't doing all they can to eat healthfully but show no interest in changing eating habits. The "I Know I Should But..." group (38%) thinks nutrition is fairly important, but fewer than half feel they are doing as much as they should to maintain a balanced diet. When asked which foods consumers should choose to improve their diet, 40% said vegetables and 27% said fruits. The survey's cosponsors were the National Center for Nutrition and Dietetics, Kraft Foods, and *Good Housekeeping* magazine.

Nutrition hotline. The National Center for Nutrition and Dietetics (NCND), with a \$450,000 supporting grant from Kraft General Foods, has begun operating a consumer hotline (800-366-1655). Callers can speak with a registered dietitian, listen to three recorded nutrition messages, or leave their name and address for a free brochure. Dietitians will be available 9 a.m. to 4 p.m. CST, Mondays through Fridays. The recorded messages will be available 24 hours a day. NCND is the public education initiative of the American Dietetic Association and the ADA Foundation.

Notable quote: "Why did a large vitamin manufacturer recently buy 80,000 copies of *Nutrition News*? Why? Because *Nutrition News* sells product. It can help you sell more product too. Your customers want to know what your products can do for them. Each month we publish an attractive, topical newsletter geared specifically to inform them and motivate them to buy those products."—Ad for *Nutrition News*, a 4-page newsletter that health food stores can purchase and distribute free to customers. The newsletter makes claims for the ingredients in supplement products that would be illegal to state on the product labels.

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LIFE AFTER BYPASS: MY PERSONAL WAR AGAINST CHOLESTEROL

Stephen Barrett, M.D.

When the AMA announced its War on Cholesterol, I planned merely to write about it. But today I am fighting in the front lines. Here's what happened...

A few years ago, I began gathering information about diet, cholesterol and heart disease. I read a myriad of journal articles, attended seminars conducted by experts, and talked extensively with professional friends, several of whom had been battling their own cholesterol levels for many years. My goal at the time was to learn enough to edit articles on the subject for *Nutrition Forum*. Never did it cross my mind that cholesterol control would become a life-and-death issue for me.

But it did. One morning in February 1989 I experienced a mild burning sensation in the upper part of my chest. It lasted only a minute but returned several more times during the next few days. At first it didn't appear related to exertion; it seemed to come and go by itself. But by the third day, I began to worry that it might be angina pectoris—a signal that my heart muscle was not getting enough oxygen to meet its needs.

On the other hand, I also began to worry that I was being ridiculous. How could somebody like me develop blockage in his coronary arteries? There was no history of premature heart disease in my family. I have never smoked. I didn't have high blood pressure or diabetes. I was not overweight. I exercised regularly for fitness. And my general health was so good that I hadn't missed a day's work for illness in more than 30 years. True, my blood cholesterol level was close to 240, but with no other risk factor in the picture, I was not a likely candidate for heart disease.

After discussion with my wife (a family practitioner) and a brief telephone consultation with a local cardiologist, we scheduled an appointment for a stress test that afternoon. By the middle of the test, the verdict was clear. I did have angina and—since its frequency kept increasing—my risk of a sudden heart attack was very high.

Within minutes, I went by wheelchair to the emergency room at the Lehigh Valley Hospital Center, where I was

hooked to a continuous cardiac monitor and given an anticoagulant by slow intravenous drip. About two hours later, I entered the intensive care unit where the monitoring and medication were continued. On the following day I underwent coronary angiography, a procedure in which a catheter was inserted into an artery in my arm and threaded into the area where the coronary arteries enter the heart. Then a special dye visible by x-ray was injected so that blood flow through my coronary arteries could be seen and evaluated. Minutes later, the verdict again was clear. I had 95% blockage of one artery and 50% blockage of two others. The recommended treatment: bypass surgery.

Successful Operation

Bypass surgery is an amazing technological feat. The heart normally receives its blood supply from the coronary arteries, which connect from the aorta (the main artery emerging from the heart) to the heart muscle. If these become clogged near their origin but are open beyond that point, normal blood flow can be restored through grafts that run from the aorta to the unblocked portions of the coronary arteries.

The grafts are obtained from the patient's mammary artery (which supplies a portion of the chest wall but is not vital to the area) and/or saphenous veins, which serve the lower part of each leg. During the operation, the patient's heart is stopped so that the grafts can be sewn in place while circulation is maintained through a heart-lung machine. In my case, the surgeons used the mammary artery and a portion of vein from one leg.

My operation went well. I awoke six hours later with pain at the operative site that required narcotics to control, but by the next day, this discomfort was easily controlled by a non-narcotic pain-reliever. My recovery continued smoothly, and I was discharged in one week.

During the next few weeks, I had to walk slowly

because anemia due to blood loss caused my heart to beat fast and hard with even minimal exertion. This problem resolved as my body replaced the lost red blood cells. For about a month, I had some soreness of the chest, which was aggravated by movements that stretched the chest muscles. I was able to work part-time in my home-office two weeks after leaving the hospital and resumed full-time work after ten weeks. I had no anginal pain, and a treadmill test showed that the operation had restored normal blood supply to my heart. Of course, the key question was—and still is—how to minimize the odds that my coronary blood vessels will again become blocked.

Risk Factors

The material that clogs coronary arteries is a fatty, fibrous, cholesterol-laden deposit called plaque. Over long periods of time, plaque build-up gradually thickens the artery walls and narrows the channel inside, a condition called atherosclerosis. If enough plaque accumulates to impede the flow of blood through the coronary arteries, inadequate blood supply to the heart can cause chest pain (angina) or a heart attack.

Medical scientists have identified ten "risk factors" for coronary heart disease: cigarette smoking, high blood pressure, high blood cholesterol level, obesity, diabetes, lack of exercise, stress, a family history of coronary heart disease, being male, and increasing age. Risk factors are cumulative: the more an individual has, the greater the danger of having a heart attack. In my case, the culprit appears to have been a high blood cholesterol level.

Cholesterol Regulation

Within the bloodstream, cholesterol travels in fat/protein packages called lipoproteins. Low-density lipoproteins (LDL) tend to cause atherosclerosis, while high-density lipoproteins (HDL) tend to protect against it by helping to remove cholesterol from the artery walls. Thus the lower the level of LDL and the higher the level of HDL, the smaller the risk of coronary heart disease.

Blood cholesterol levels are determined partly by heredity and partly by diet. Cholesterol regulation is accomplished mainly through the action of the liver. When the diet is high in fat—particularly saturated fat—the liver becomes less able to remove cholesterol from the blood. Conversely, when the diet is low in fat, removal of cholesterol from the blood is facilitated. Soluble dietary fiber also plays a role in cholesterol regulation by absorbing bile acids secreted by the liver into the intestine. When the diet is high in fiber, these compounds (which the liver makes from cholesterol) are transported down the intestinal tract and excreted. When the diet is low in fiber, they are reabsorbed and add to the body's cholesterol pool. Obesity and exercise level also play a role in cholesterol regulation. The presence of excessive body fat tends to raise the level of LDL, and strenuous exercise may raise HDL.

Dietary Modification

The cornerstone of blood cholesterol control for people at risk is dietary therapy. The primary goal is to maintain LDL below 130 milligrams per 100 milliliters of blood. This usually occurs when total cholesterol stays below 200, but even 200 can be a problem for individuals whose HDL is less than 40. During the 20 years before my surgery, my total cholesterol values averaged just below 240 and my LDL was close to 160. Today these values are considered "borderline high," but at the time most of my cholesterol determinations were made, my levels were not considered high enough to require vigorous action, such as drug therapy. I was concerned enough to maintain a diet that was lower in fat than that of the average American, but this turned out to be insufficient to protect me.

Most experts recommend limiting dietary fat to 30% of calories, and if that is not effective, cutting it to 20% of calories. They also recommend limiting saturated fat and dietary cholesterol. Since my diet had probably been close to 25% fat, my advisors suspected that lowering it to 20% would not have much effect. Moreover, data from recent experiments suggested that a 10%-fat diet may stop or even reverse the progression of coronary atherosclerosis.

After much deliberation, I decided to aim for a dietary level of 10% fat, with as little saturated fat and cholesterol as possible, and to increase my intake of soluble fiber. Weighing each portion of food and calculating its contents is very tedious and cannot be done with certain foods. So one of my advisors suggested a simple method: count the grams of fat consumed and limit the number to 20 per day. Moderately active people typically burn off about 15 calories per pound per day. So at a weight of 150, I would require about 2,250 calories. Fat contains 9 calories per gram. So a 20-gram-per-day diet would be about 9% fat. Counting fat calories with the help of food composition tables is fairly simple.

The foods highest in saturated fat include red meats, butter, and whole-milk products. The food highest in cholesterol is egg yolks. Since my operation I have eaten only a few small servings of lean red meat and have not had an egg yolk or a single portion of any whole milk product. To reduce my saturated fat intake, I gave up a few of my favorite foods—most notably pizza, ice cream, cream cheese, and pastries. Instead of

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high-fat pastries, I eat Entenmann's nonfat baked goods or home-baked low-fat cakes. Instead of ice cream, I consume nonfat frozen yogurt. To further reduce my total fat intake, I stopped using margarine and salad dressings that contain fat and reduced my portion sizes of chicken, fish and peanut butter.

The foods highest in soluble fiber include oat bran, oat meal, many varieties of beans, and several fruits. My dietary program includes several portions of fiber-rich foods each day. I begin each day with a large bowl of oatmeal (made from a cup of dry oats) and include a bran muffin either for lunch or for a mid-morning snack. On most days I also eat a banana and at least one other piece of fruit.

My lunch menu includes such items as nonfat yogurt, a sardine sandwich (one sardine and some low-fat cottage cheese on a bagel). My typical afternoon snack is an apple or a handful of nonfat pretzels. Most of my dinners include a large bowl of salad with ten or more ingredients, topped with a nonfat dressing—usually Mother's Creamy Italian. Other dinner items include chicken or turkey (once a week), fish (once or twice a week), a bean soup or other bean dish, grains such as couscous, bulgur or quinoa, and several vegetables. Fortunately, my wife is an excellent and inventive cook and has developed some very tasty low-fat dishes. My favorite is spaghetti with a sauce made from tomato sauce, cauliflower, sauteed onions, water-packed tuna fish, and mashed chick peas.

Many people have asked me whether I miss the foods I gave up. The answer is no. I think of them as poisons and have completely detached myself from them. In addition, I have found enough tasty low-fat and nonfat foods to satisfy me.

Exercise Program

Since exercise can help lower total cholesterol and raise HDL, I decided to increase the amount and intensity of what I did. I have never been sedentary, and had exercised regularly, swimming twice a week for many years. Two months after the operation, I bought a treadmill and began my program at home. A few weeks later, I entered the formal cardiac rehabilitation program at the hospital where my operation had taken place. There, three times a week, I engaged in a series of exercises while wearing a device that transmitted my electrocardiogram to a screen that was observed by a specially trained nurse. That way, if an exercise provokes an abnormal heart rhythm or any sign of strain, it can be stopped before damage occurs. Over a 3-month period, my exercises were increased in duration and intensity to maintain a pulse rate high enough to strengthen my heart and make it beat more efficiently.

After the program ended, I continued to exercise on my treadmill, three times a week at 3.4 miles per hour at an elevation of about 8 degrees, which gave me a pulse of 144 beats per minute. To be sure my pulse didn't get too high, I wear a device that transmits to a watch on the handbar which gives a continuous readout of my pulse. Over the following year, as my heart became better trained, it became necessary to raise the elevation to 16 degrees and my speed to five miles an hour to maintain my target pulse. At that point a sports medicine specialist advised that carrying hand weights would enable me to achieve the same effect while walking more slowly. Using 3-pound weights, I now walk 3.5 miles an hour with 16 degrees elevation. To give my legs an occasional break, I use a stationary bicycle and a rowing machine for part of each 45-minute session. My resting pulse—62 before the operation—is now in the low 50s. While exercising, I watch television or play a movie or a quackery-related tape on my VCR.

Increasing exercise and lowering dietary fat content often results in weight loss. My weight dropped from 157 to 140 during the first six months after surgery and has remained close to 140 since that time.

Cholesterol Levels Improve Dramatically

Within a month after changing my diet, my total cholesterol level dropped below 200, and my LDL dropped below 130. Unfortunately, my HDL level became undesirably low. When it remained low for several months, I decided to see whether niacin might raise it. When a small dose showed promise, I gradually increased the dosage to about 2 grams a day. The results were startling: my HDL more than doubled and my LDL fell well below 100, a level at which atherosclerosis may be reversed. Meanwhile, researchers have been accumulating more data which suggests that a 10%-fat diet plus niacin can not only stop the progression of atherosclerosis but may reverse it. I don't know if it is necessary to stay on a diet as strict as mine to achieve good results. But I see no harm in continuing it.

Caution Needed!

A program like mine should *never* be attempted without close medical supervision. Any restrictive diet should be checked by a professional to be sure it is nutritionally adequate. Moreover, large amounts of fiber can decrease the absorption of minerals. In my case, blood tests showed that my iron storage levels were slowly decreasing. Since I couldn't increase the

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mineral content of my diet without substantially increasing its fat content, I decided to take a broad-spectrum mineral supplement.

High-fiber diets pose another possible problem. If the fiber content of the diet is raised too quickly, cramps, bloating and diarrhea can result. Thus any increase should be done slowly over a period of weeks.

Niacin also poses hazards. Large amounts can produce burning and flushing of the skin and can irritate and even damage the liver. For these reasons, niacin should never be taken without close medical supervision. The dosage should be increased gradually to minimize side effects, and tests should be done periodically (monthly at first) to be sure the liver is not being injured. Regular niacin is much safer than the sustained-release variety. I have occasional periods of flushing and itching of the skin, but don't consider them a problem. Taking the niacin after meals tends to minimize their occurrence.

Several studies have found that small doses of aspirin may reduce the likelihood of heart attacks. I found, however, that even as little as a baby aspirin (80 mg) every three days sharply reduced the ability of my blood to clot. A lower dose might work, but since my cholesterol levels are so well controlled, I see no reason to run any risk of uncontrolled bleeding

from an accidental injury. So I am not using aspirin.

Benefits Apparent

As my exercise progressed, my endurance increased tremendously. About a year after the operation, I entered the "Channel Swim" at my local community center, a contest that required 20 miles of swimming, which I did in twenty 72-lap segments. I not only won the over-55 bracket but broke the pool record for this age group by more than two hours.

A few months later, I had a thallium stress test. This procedure is like an ordinary treadmill test but ends with an injection of radioactive thallium into a vein in the arm. Then a computerized x-ray machine maps the distribution of the thallium in the patient's heart muscle so its blood supply can be evaluated. I am pleased to report that I passed the test with flying colors. Sometimes I feel like I can jump over tall buildings in a single bound.

Dr. Barrett, who practices psychiatry in Allentown, Pennsylvania, is co-author/editor of 28 books, including *Health Schemes, Scams, and Frauds* [Consumer Reports Books, 1990] and the college textbook *Consumer Health—A Guide to Intelligent Decisions* [Times Mirror/Mosby, 1989].

PROGRESS REPORT

Status	Date	Total Cholesterol	LDL	HDL	Total/HDL Ratio	Weight	Niacin (mg)
Avg. Before Surgery	1968-1989	238	153	46	5.09	144 → 157	—
10% Fat Diet	4/18/89	184	117	38	4.80	151	—
	5/27/89	175	111	38	4.60	148	—
	7/7/89	203	139	41	5.00	146	—
	8/10/89	187	126	39	4.79	144	—
Niacin begun 9/9/89	9/15/89	185	120	45	4.11	142	300 → 600
	10/17/89	188	116	47	4.00	140	750 SR*
	11/17/89	156	88	61	2.56	141	1200 SR*
	12/18/89	198	123	52	3.81	140	750
	1/15/90	184	109	57	3.23	140	1000
	2/16/90	185	103	62	2.98	140	1200
	3/19/90	165	87	58	2.84	140	1500
	4/18/90	189	102	71	2.66	139	1525
	5/17/90	189	106	63	3.00	139	1825
	6/18/90	166	84	67	2.48	140	1975
	7/16/90	176	94	60	2.93	140	1975
	8/20/90	176	90	58	3.03	140	1975
	10/12/90	181	88	72	2.51	140	1975
	11/15/90	171	79	69	2.48	141	2225
	1/14/91	179	83	78	2.29	140	2225
	3/15/91	177	78	79	2.24	142	2225
	5/16/91	156	65	76	2.04	142	2225
	7/16/91	171	70	87	1.97	142	2225
	9/16/91	185	73	98	1.89	142	2225
	11/18/91	168	71	83	2.02	141	2125
1/16/92	188	101	72	2.62	142	2125	

*Periodic testing enables me to evaluate my program and guard against liver toxicity. In November 1989, blood tests indicated that sustained-release (SR) niacin might be irritating my liver, so I switched to ordinary niacin.

FALSE CLAIMS BARRED FOR DIET PROGRAM

The Federal Trade Commission (FTC) has charged Nu-Day Enterprises, Inc., of Gig Harbor, Washington, and its owner, Jeffrey S. Bland, Ph.D., with falsely claiming that their diet program could cause weight loss by changing the user's metabolism.

The Nu-Day Diet Program, which cost \$59.95 for a 2-week supply, contains a meal-replacement formula; *Nu-Day Herbulk* (said to be a "natural appetite suppressant" that provides fiber and "cleanses the digestive system"); an instructional booklet; and an audiocassette answering questions about the program. It has been promoted with a 30-minute television program entitled "The Perfect Diet," which offered "amazing true stories of people like yourself losing 20, 30, 50 pounds or more, safely, quickly and naturally." The FTC charged that the following statements, included in the television ad, could not be substantiated:

- "The Nu-Day program allows us to . . . tune up that heat-producing machinery so that the fat is not stored for a rainy day that never comes. Rather, it's lost as body heat—and that is what we call efficient metabolism. So really, we're inducing efficient metabolism."

- "A revolutionary new concept in weight loss. A diet that actually raises your metabolism, causing your body to burn off excess fat, quickly, safely and naturally."

- "In the cell we have different little organelles, these are these little things like the nucleus of the cell in the center, which is like the brain of the cell. These little pink units are called mitochondria—and they're like the lungs or spark plugs of the cell. They burn up the energy. . . . As a person tends to age . . . these mitochondria take a siesta, they go to sleep and they don't effectively convert food to energy anymore. We tend to store that energy as fat for a rainy day that never comes. So really what the Nu-Day program [does] is to try to help activate those mitochondria Get them back to the point where they will convert efficiently food and energy and burn off that fat."

- "Well in excess of 100,000 clinical trials have been evaluated with people that have been on this diet, and the responses that we are getting here are remarkable."

On May 22, 1991, without admitting wrongdoing, Dr. Bland signed a consent agreement to pay \$30,000 for redress and to refrain from making unsubstantiated claims that the Nu-Day program, or any similar program or product, can:

- Alter human metabolism so that the body will burn more calories . . . following the program or eating the food products

- Alter human metabolism so that weight lost while following the program or eating the food products will not return when caloric intake increases

- Alter mitochondria so the body's cells convert more food into energy

- Prevent the body's metabolism from slowing down to the level that it would reach on any other diet involving similar caloric intake.

The FTC also charged that format of the television commercial containing these claims was deceptive. Although it appeared to be an independent consumer news program that used interviews to report on its discovery of the Nu-Day Diet, it actually was a paid ad. The consent order requires future programs of 15 minutes or longer to display messages identifying them as paid ads for products they are selling.

Dr. Bland, identified during the program as "one of the nation's leading nutritional biochemists," is the health food industry's most prolific interpreter of nutrition-related scientific developments [NF 3:33-37]. His interpretations consistently favor the use of supplements. A former biochemistry professor, he appears frequently at trade shows, writes and edits books, produces audio and video tapes, and conducts seminars for health professionals. He also has been a research associate at the Linus Pauling Institute of Medicine and has directed its nutrient analysis laboratory.

BOGUS "NUTRITIONIST" SUED

Illinois Attorney General Roland W. Burrish has charged a Decatur, Illinois, woman with practicing medicine without a license and making claims that lack a legitimate medical basis. According to the complaint, Ina June Organ sold herbs, vitamins and homeopathic remedies through her shop and offered diagnostic services with a device called an INTERRO. The suit alleges that she represented to customers that the device could pinpoint many medical problems. She was also purported to use iridology (reading the iris of the eye) to identify "weaknesses" in body systems. Illinois authorities became concerned because Ms. Organ had been treating foster children with elixirs that have a high alcohol content. The children, said to be hyperactive, were claimed by her to be suffering from food allergies that could be diagnosed with the INTERRO. The Attorney General is seeking civil penalties and an injunction

barring Ms. Organ from engaging in practices that seek to treat, cure, or mitigate human ailments.

Editor's note: The INTERRO is galvanometer connected to a computer. One wire from the computer goes to a brass cylinder covered by moist gauze that the patient holds in one hand. A second wire is connected to a probe that the practitioner touches to the patient's other hand or foot. To use the device, the practitioner probes points on the patient's hands and feet and interprets numbers on the computer's screen. (The less the electrical resistance, the higher the score.) This completes a low-voltage circuit and causes a band to rise on a scale on the computer screen. Several years ago I examined an INTERRO and found that the main factor influencing the reading on the screen is how hard the probe is pressed against the patient's body.

HEALTH FOOD STORE PROBE YIELDS POOR ADVICE PLUS DOUBLETALK

Julia M. Haidet

It is illegal for health-food retailers to diagnose health problems and prescribe products to treat them. But several studies have shown that they do so anyway.

• In 1983, investigators from the American Council on Science and Health made 105 inquiries at stores in New York, New Jersey, and Connecticut. Asked about eye symptoms characteristic of glaucoma, 17 out of 24 suggested a wide variety of products for a person not seen; none recognized that urgent medical care was needed. Asked over the telephone about sudden, unexplained 15-pound weight loss in one month's time, 9 out of 17 recommended products sold in their store; only 7 suggested medical evaluation. Seven out of 10 stores carried "starch blockers" despite an FDA ban. Nine out of 10 recommended bone meal and dolomite, products considered hazardous because of contamination with lead. Nine stores contacted made false claims of effectiveness for bee pollen, and 10 stores

did so for RNA. The investigators concluded that most health food store clerks give advice that is irrational, unsafe, and illegal.

• In 1987, a registered dietitian posed five similar questions to 10 health food store proprietors in eastern Pennsylvania and concluded that fewer than half the answers were correct (NF 5:1-3, 1988).

• In 1989, volunteers of the Consumer Health Education Council (CHEC) telephoned 41 health-food stores in the Houston area and asked to speak with the person who provided nutritional advice. The callers explained that they had a brother with AIDS who was seeking something that was effective against the HIV virus. All 41 retailers offered products they said could benefit the brother's immune system, improve the woman's immunity and protect her against harm from the HIV virus. Thirty said they carried products that would cure AIDS [NF 7:16, 1990].

Store	"Frequent headaches"	"Kidney Stone"	"Thirsty/tired/dizzy"
A	Could be a sugar imbalance; stay away from sugar and eat more complex foods like vegetables and fruits. Should also see a doctor to find exact cause and then call back.	Lack of potassium is likely to be the cause. Grind up skins of boiled potatoes, mix with water and drink; this can help prevent kidney stones.	Should see a physician. If you know what the problem is, you may be able to take some herbs that may help prevent the symptoms.
B	Could be tension, allergies, diet. Should see a doctor.	Should make an appointment to see the store's wellness counselor. Diet, fluid intake and social habits need to be evaluated.	Could be due to stress, change in weather, or low iron levels. Iron supplement, folic acids and B-12 could help you feel better in 3-4 days. These supplements can also help with forgetfulness. Don't drink coffee with the iron supplements or they won't work.
C	Should try massage therapy which works for stress headaches. Should try to find out cause.	Should read an herb book from the library. There are different causes for different people. Some herbs can help dissolve stones.	Cannot make any recommendations over the phone. Must come in by appointment to fill out questionnaire about health. Also mentioned that they cannot prescribe or diagnose.
D	Many different possible reasons. Should try herbs and homeopathic remedies; taken over time, some herbs could prevent headaches. Feverfew and wood bettany are two herbs that could help.	Drink fresh-squeezed lemon juice in water. Stay away from large amounts of calcium supplements, especially inorganic ones (dolomite and calcium carbonate). Stay away from meat and dairy products. Get a water purifier if you have hard water. Larger countertop models are better.	Could be related to changes in the diet. Could be an overgrowth of yeast in the system. Should get a book on the subject and see the whole picture. Certain nutrients can help with the lack of energy. Should see a homeopathic doctor for an analysis.
E	Try feverfew herb. Allergies to chocolate, Coca-Cola could be cause. Also could be stress, lack of exercise, liver malfunction, or constipation.	Diet causes them. Should drink a mixture of apple juice, lemon juice and olive oil. Too little sodium can precipitate stones. Should avoid the amino acid L-cystine. Gingko should be taken to help prevent stones. Limit calcium and dairy products, antacids, salt, animal protein, and foods containing oxalic acid. Could be a B-6 deficiency. Existing stones can be dissolved by eating more citrus foods and potatoes. Vitamin A should be decreased. Should also take magnesium, B-6 and calcium together.	Might be a sugar problem. Should come in and see the iridologist who would probably suggest taking certain herbs and making changes in my diet.

Last year, as part of a project for a college course in consumer health, I telephoned ten health food stores in Northeast Ohio and described three problems:

1. "I suffer from frequent headaches, sometimes migraines. Do you have anything that could help prevent these? Could it be a nutritional deficiency?"

2. "I recently had a kidney stone and was told I have an 80% chance of getting another one in the future. Is there anything I can do to help prevent this from happening?"

3. "I'm thirsty all the time and lack energy—except right after I eat—and sometimes feel dizzy. What do you recommend?"

Everyone I contacted offered advice, most of which was related to products carried in their store. None of the advice was appropriate. Even the few who recommended seeing a doctor suggested that dietary change or a nutrition-related product would be appropriate.

Five of those questioned about headaches suggested herbal remedies. Three suggested that an allergy might be involved, two suggested that a vitamin or mineral deficiency might be involved, and two thought a dietary imbalance might be the cause. Three, in addition to giving their nutrition-related

advice, suggested seeing a physician. Only one gave no advice related to health food stores or their products; that person advised trying massage therapy for headaches.

To prevent kidney stones, five salespeople boosted herbs, three said diet was involved, two recommended vitamin or mineral supplementation, one advised seeing the store's "wellness counselor," and one expressed confidence that something could be done to prevent them. None suggested discussing the matter with a physician.

For "thirst, fatigue and dizziness" (which could be symptoms of a serious health problem), four thought dietary changes might help, three suggested herbs, and three suggested vitamin or mineral supplements. Six recommended consultations with a medical doctor (2), homeopathic doctor (1), nutritionist (2), or iridologist (1). Two suggested coming to the store to complete a written questionnaire so they could give further advice.

Ms. Haidet, a 1991 graduate of Kent State University, is a program associate for the American School Health Association. Her investigation was supervised by William M. London, Ed.D., assistant professor of health education at Kent State and president of the Ohio Council Against Health Fraud.

Store	"Frequent Headaches"	"Kidney Stone"	"Thirsty/Tired/Dizzy "
F	Could be an allergy to certain foods. Try feverfew capsules or yerbamate herb; these could help prevent the headaches.	Hard to tell what cause is. A lot of vitamin C can cause kidney stones. Quite sure there are some things that can be done to prevent them.	Not a doctor, so couldn't recommend. But I should look at my diet. Sometimes too much sugar and not enough sleep can produce a hypoglycemic reaction. I should come in and take a written test that would take about an hour and a half and then see a nutrition consultant for an hour. Symptoms could be a gland problem (thyroid, adrenal). It could be related to low blood pressure or a problem with the pancreas.
G	Could be a niacin or B-vitamin deficiency.	Magnesium supplements can help to prevent kidney stones.	Probably should see a doctor. May not be getting enough vitamins and minerals. Should take a multivitamin which could help with the energy problem. A "Woman's Formula" with extra iron is recommended.
H	Niacin (200 mg, 3 times per day) can provide relief by dilating the blood vessels. Lecithin may help, as well as feverfew, Migrelief, and a calcium-magnesium combination. A combination of rosemary, peppermint, and wormwood may also help. Taking any of these over time could also help prevent headaches.	"Stone-free" herbal mixture with gravel root can help prevent stones.	Said he doesn't have a "piece of paper" so he couldn't say what the problem is, but B vitamins can give energy and ginseng can help with energy. Should check a book like the "Nutritional Outline for the Professional" which suggests herbs for treatment. It would also be good to see a nutritionist.
I	Herbal formulas can help prevent, such as feverfew and white willow.	Avoid dairy products, drink extra water, decrease salt. Take "Stone-free" (made of cleansing herbs) on a regular basis to help prevent stones.	Should get a physical from a doctor and then call the health food store back and work from there.
J	Should see an osteopath or chiropractor to make sure it is not a musculoskeletal problem. Could be a lack of calcium or B-vitamin.	Diet is the main cause of stones. Coffee and tea aggravate them. Drink cranberry juice, which helps flush the kidneys and can help to dissolve stones if they are not too bad already. There are also some herbal remedies which should be taken with a lot of water.	Diet is probably the cause. I should visit the store so I can find out for sure whether it is a deficiency or toxicity.

BRIEFS

Nutritionist licensing update. As of November 1991, dietitians have gained passage of laws to regulate nutritionists in 27 states, Puerto Rico and the District of Columbia. Some make it illegal for unqualified persons to call themselves dietitians or nutritionists, while others define nutrition practice and who is eligible to do it.

Anti-herbicide bill introduced. U.S. Senator Patrick Leahy (D-VT), who spearheaded the U.S. Organic Foods Production Act of 1990 [NF 8:25-29], has introduced legislation to ban the federal government from funding research into herbicide-resistant plants and transfer those funds to research into "sustainable" methods of weed control.

FDA electronic bulletin board. The FDA's Electronic Bulletin Board Service can now be accessed free-of-charge through a toll-free number, using a modem and a computer. Its information includes news releases, enforcement reports, *FDA Consumer* magazine, *FDA Federal Register* summaries, congressional testimony, and speeches. A user guide for the system can be obtained by calling the agency's Parklawn Computer Center at 301-443-7318

New food safety guide. *A Quick Consumer Guide to Safe Food Handling*, produced by the USDA Food Safety and Inspection Service, covers shopping, storage, meal preparation, cooking, microwaving, serving, and handling leftovers, with emphasis on meat and poultry products. For a free copy, write to the Consumer Information Center, 574-X, Pueblo, CO 81009.

FDA ad complaint line. The FDA has set up a toll-free number (800-238-7332) for physicians, pharmacists, nurses, veterinarians, and other health professionals to use when they have concerns about the advertising, marketing or promoting of FDA-regulated medical products. The line will be answered by staff in the FDA Office of Health Affairs during normal business hours.

FDA labeling proposal. On November 27, 1991, as required by the Nutrition Labeling and Education Act of 1990, the FDA announced its proposed rules for food labeling and nutrient content [Federal Register 56:60365-60878, 1991]. The lengthy report includes the scientific data supporting the proposed rules. The next issue of *Nutrition Forum* will cover them in detail.

Recycling claims withdrawn. *Advertising Week* has reported that Tetra Pak, Inc., and Combiblock, Inc., the nation's two largest producers of juice drink containers, have agreed to stop advertising that their packages are "as easy to recycle as newspapers." The containers have six layers of paperboard, plastic and aluminum. The ads were challenged by ten state attorneys general who noted that the layers must be separated and that few recycling facilities can recycle aseptic packaging.

Tobacco promotion in retail stores. A 1987 survey of 61 supermarkets, grocery stores, convenience stores and pharmacies in Buffalo, N.Y., found that 41 (67%) displayed tobacco posters and 53 (87%) displayed other promotional items. Forty owners or managers said they had received monetary incentives to display tobacco ads. Only 14 said that they had displayed antitobacco information, but 31 said they would be willing to do so [Public Health Reports 9:570-575, 1991].

New health magazine. The American Medical Association and *Good Housekeeping* have announced plans to collaborate on a magazine called *Living Well*. The new magazine will preview as a section in the March 1992 issue of *Good Housekeeping* and will appear as a stand-alone magazine on newsstands in mid-March.

Surplus food distribution. The U.S. General Services Administration (GSA) plans to release more than 100 million pounds of food left over from the Persian Gulf War. According to a report in *Vegetarian Times* magazine, most of the food will be channeled through Second Harvest, a Chicago-based agency that provides food to 180 food banks serving 42,000 agencies nationwide. The food—worth more than \$200 million—includes fresh and frozen items, canned goods, packaged foods, and military rations.

Poppy seeds cause positive drug test. A researcher at the University of Michigan has reported that eating poppy seeds can produce positive urine tests for opiate drugs. After encountering a woman who tested positive after eating a lemon poppy seed muffin, he ate one himself and found morphine in his urine an hour later [JAMA 266: 3130-3131, 1991].

Nutri/System suit update. Nutri/System has settled lawsuits filed by 199 former south Florida customers who had charged that the weight-loss program caused them to develop gallbladder problems. The terms of the settlement were not publicly disclosed. Nationwide, about 700 suits have been filed.

What Harvard doctors do. The *Harvard Heart Letter* has reported on the health and nutrition habits of 672 Harvard Medical School clinical faculty members who responded to a survey conducted by the newsletter. The responses included: trying to control weight (74%); would like to lose ten pounds or more (39%); eat red meat less than once a week egg intake less than one a week (55%); intentionally maintain a high intake of soluble fiber (59%); take aspirin regularly to protect against cardiovascular disease (25%); and take beta-carotene supplement or maintain high dietary intake (80%). The percentages reporting other supplement use were: vitamin C (13%); calcium (10%); fish oil (2%); and vitamin or mineral other than calcium or beta-carotene (23%). The editor called the 23% figure "surprisingly high . . . given the evidence that these items provide little or no benefit for healthy people consuming a balanced diet."

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PROPOSED LABELING RULES STIR CONTROVERSY

Stephen Barrett, M.D.

While most consumers and nutrition professionals are looking forward to more informative food labels, the supplement industry is fighting to prevent reform.

In the mid 1980s, controversy erupted about whether food labels should be permitted to make health claims, such as "helps prevent cancer" or "helps lower cholesterol." As consumers became more attentive to food choices, there also was considerable public pressure for clearer and more complete nutrition information. During 1990, the FDA began issuing regulations that addressed these problems. Soon afterward, passage of the Nutrition Labeling and Education Act [NLEA] strengthened FDA's authority and required new rules, currently scheduled to take effect on May 8, 1993.

Proposed Rules

The U.S. Department of Agriculture regulates the labeling of most meat products, poultry products, and eggs. The FDA regulates the labeling of almost all other foods. In November 1991 the two agencies proposed regulations that included the following [Federal Register 56:60302-60878, 1991]:

- Labeling would be extended to almost all packaged foods.
- Retailers were urged to voluntarily inform customers about the nutrient content of commonly purchased raw fruits, vegetables, and fish (20 foods in each category). By May 1993, if fewer than 60% of stores are displaying the information, regulations will be written to make the display mandatory.
- The U.S. Recommended Daily Allowances (U.S. RDAs), would be replaced with U.S. Reference Daily Intakes (RDIs) that would enable consumers to compare the nutrient content of many foods. RDIs would be established for protein, 13 vitamins and 13 minerals, based mainly on the 1989 Recommended Dietary Allowances published by the National Academy of Sciences. Most RDI values are lower than their corresponding U.S. RDA values, which means that the percentages of vitamins and minerals on most food labels will generally be higher than they are now. This is a good idea because the RDIs

are closer than the U.S. RDAs to most people's actual requirements [J Am Dietetic Assoc 92:361, 1992].

- Daily Reference Values (DRVs) would be set up to provide a similar basis to compare total fat, saturated and unsaturated fat, cholesterol, carbohydrates, dietary fiber, sodium and potassium. These food components are important to health but were not addressed by the RDA report. Labels would indicate the percentages of RDIs and DRVs in each serving of the food.

- Labels must declare the total number of calories, the number derived from fat; the total amount of fat, saturated fat, and cholesterol; total carbohydrates, complex carbohydrates, and sugars; dietary fiber; protein; sodium; vitamins A and C; calcium; and iron.

- Labeling of dietary supplements of vitamins and minerals that are not in the form of ordinary food would have to identify the quantity and the percentage of RDI for all vitamins, minerals, and other food components present in significant amounts.

- Serving and portion sizes for 131 food categories, 23 meat categories, and 22 poultry categories would have to be based on the amount of food customarily consumed per eating occasion by an average person over the age of 4. The units of measurement must appear in common household and metric measurements, such as 1 cup (240 milliliters).

- Health claims would be permitted only if supported by valid and substantial scientific information. Claims would be permitted regarding (a) sodium and high blood pressure, (b) calcium and osteoporosis, (c) dietary fats and cancer, or (4) dietary fats and heart disease. Claims would not be permitted regarding (a) zinc and immune functions, (b) antioxidant vitamins and cancer, (c) fish oils and heart disease, or (d) folic acid and neural tube defects. The FDA is still studying possibility of permitting claims relating fiber to cardiovascular disease and cancer. The attorneys general of 33 states have asked the FDA to permit health-related claims only through the use of FDA-approved model claims.

- Many descriptive terms would have to conform to new definitions (see table on next page).

PROPOSED DEFINITIONS FOR FOOD LABELS

Term	Definition Proposed in Federal Register, November 26, 1991
Free	An amount that is nutritionally trivial and unlikely to have a physiological consequence.
Caloric free	Fewer than 5 calories per serving
Sugar free	Less than 0.5 grams per serving
Sodium free or salt free	Less than 5 mg per serving. A claim made for a food normally free of or low in a nutrient must indicate that the situation exists for all similar foods. For example: "spinach: a low-sodium food."
Low	Low enough to allow frequent consumption without exceeding the dietary guidelines
Low sodium	Less than 140 mg per serving and per 100 grams of food (a little less than half a cup)
Very low sodium	Less than 35 mg per serving and per 100 grams of food
Low calorie	Less than 40 mg per serving and per 100 grams of food
Reduced sodium*	Contains no more than half the sodium of the comparison food
Reduced calories*	Contains 1/3 fewer calories than the referenced food
Light (or lite)	Contains 1/3 fewer calories than the referenced food, with a minimum reduction of more than 40 calories per reference amount and serving size. Products deriving more than half their calories from fat must have their fat content reduced by 50% or more with a minimum reduction of more than 3 grams per serving. Other use of "light" must specify if it refers to look, taste or odor. For example, "Light in color."
Less*	Contains at least 25% less of a nutrient than the referenced food
More	Contains at least 10% more of a desirable nutrient than does a comparable food
High	Contains 20% or more of the RDA or DRV
Source of	Contains 10–19% of the RDI or DRV
Fat free	Less than 0.5 grams of fat per reference amount and serving size, and no added ingredient that is a fat or oil
Low fat	3 grams or less of fat per reference amount, per serving size and per 100 grams of product
(Percent) fat free	Only for foods that meet the FDA definition of low fat
Reduced fat*	Reduced fat content by 50% or more, with a minimum reduction of more than 3 grams per reference amount and per serving size
Low in saturated fat	1 gram or less per serving, with not more than 15% of calories from saturated fat.
Reduced saturated fat*	No more than 50% of the saturated fat of the reference food. Foods with at least 25% reduction may use the term "less." When these terms are used, the label must indicate the percentage reduction and the amount of saturated fat in the reference food. The reduction must be at least 1 gram.
Cholesterol free	Less than 2 mg of cholesterol and 2 grams or less of saturated fat per serving
Low in cholesterol	20 mg or less per serving and per 100 grams of food, and 2 grams or less of saturated fat per serving
Reduced cholesterol*	50% or less of cholesterol per serving than its comparison food. The label of a food containing more than 11.5 grams of total fat per serving or per 100 grams of the food must disclose that fact.
Less fat*	At least 25% less fat, with a minimum reduction of more than 3 grams per reference amount and per serving size
Fresh	Can only be linked to raw food, food that has not been frozen, processed, or preserved
Freshly	May be used with a verb such as "prepared," "baked" or "roasted" if the food is recently made and has not been frozen or heat-processed or preserved
Lean	Meat or poultry product with less than 10.5 grams of fat, less than 3.5 grams of saturated fat, and less than 94.5 milligrams cholesterol per 100 grams
Extra lean	Meat or poultry product with less than 4.9 grams of fat, less than 1.8 grams of saturated fat and less than 94.5 milligrams cholesterol per 100 grams

*An alternative proposal for the terms "reduced," "less," or "fewer" has been drafted but not yet published. Under this proposal, the terms would be equivalent and permissible provided they indicate the identity of the comparison food and the percentage by which the nutrient has been reduced. Foods claimed to contain fewer calories must contain at least 40 fewer calories per serving than the referenced food.

Special Rules for Supplements

Shortly before the Nutrition Labeling and Education Act was passed, the health food industry succeeded in exempting "dietary supplements of vitamins, minerals, herbs or other similar nutrients" from certain provisions applicable to foods. Instead, the law said, there should be separate standards established by the Secretary of Health and Human Services. The industry, which attributed its success to the efforts of Senator Orrin Hatch (R-UT), hoped that the standards for supplements would be more lenient than those for foods.

In response to the law, FDA Commissioner David Kessler, M.D., J.D., set up a 12-person FDA Dietary Supplement Task Force chaired by Gary Dykstra, FDA Deputy Associate Commissioner for Regulatory Affairs. On August 29, 1991, the task force held a hearing to explore how dietary supplements should be defined, what goals the FDA should have in regulating the marketplace, whether supplements should be regulated differently from foods and drugs, and whether additional laws are needed for the FDA to do the job.

Mr. Dykstra opened the hearing with a statement from Commissioner Kessler. Although supplements can add to the nutrient content of the diet or provide substances not found in the foods normally consumed, the statement noted, "dietary supplements do not look like foods. They are capsules and tablets. Moreover, the desire to take the products often arises from a belief that dietary supplements can have drug-like effects." Noting that attempts by the FDA to regulate supplement products have had only limited success, Dr. Kessler suggested that "a completely new look at how supplements should be regulated is necessary." He asked the task force to consider the best way for the agency to protect the public and to recommend whatever legislative changes may be necessary to accomplish this.

The 35 people who testified at the hearing included prominent nutrition scientists, supplement industry representatives, consumer advocates, opponents of FDA regulation, writers aligned with the health food industry, and victims of supplement toxicity. Each was given up to 10 minutes, but questions from task force members were permitted after the 5-minute mark.

• Irwin H. Rosenberg, M.D., professor of medicine at Tufts University, was the first person to testify. Dr. Rosenberg is chairman of the Food and Nutrition Board of the National Academy of Sciences and president of the American Institute of Nutrition, the most prominent professional organization of nutrition scientists. More than a decade ago, the FDA Vitamin and Mineral OTC Panel, which he chaired, had anticipated many of the issues the FTC task force is now examining. The panel's report [Federal Register, March 16, 1973], said Dr. Rosenberg, "was the first, and as far as I know, only substantive study of its kind . . . and is still perhaps the most comprehensive statement on safety, effectiveness, and fair labeling of vitamins and minerals . . . even though excessive timidity at that time in FDA leadership caused that report to be withdrawn without further public comment or hearing."

In line with the 1979 report, Dr. Rosenberg said that the FDA should establish a category of nonprescription dietary supplements that are neither foods nor drugs. "Issues of safety and effectiveness remove [these] products from the category of foods. They are not apples or oranges or bouillon cubes. People die from inappropriate use of vitamins and minerals. So a special category is needed," he stated. "We consider title statements such as 'high' or 'super potency' to be label claims . . . which require substantiation," he added. "More potent for what? A higher dose is not necessarily effective. We questioned the accuracy, also, of the designation 'natural,' since that designation implies an advantage which . . . has not been proved."

• William R. Pendergast, an attorney representing the American Herbal Products Association, said:

Dietary supplements should be given their common-sense definition, namely anything that is marketed to supplement the diet. This would include products containing vitamins and minerals, herbal products, and any other ingredient in tablet, capsule, or powder form, or any form other than that of a conventional food, marketed for the purpose of supplementing the diet in one fashion or another.

When a panelist noted that the law defines a drug as anything intended to prevent, mitigate, cure, or treat disease, Mr. Pendergast replied that application of the law should depend upon the language used in a particular claim. "If you said that 'if you take this product it will prevent cancer,' then that properly would be a drug. However, 'if you take this product, the likelihood of cancer may be decreased because of its antioxidant properties,' for example, that would not be a drug."

• Anthony Iannarone, representing Hoffmann-La Roche, said that the issue of vitamin safety has been exaggerated. "Frequent generalities that vitamins can be toxic are not helpful and are actually misleading in the absence of specifics," he stated. "Safety of vitamins and minerals basically involves the purity of the materials and levels of constituent ingredients. However, neither government agencies nor industry, including the supplement industry, should be protecting people from their own stupidity."

• Michael Culbert, board chairman of the Committee for Freedom of Choice in Medicine, characterized the FDA's refusal to permit resumption of the sale of L-tryptophan as:

Power-mad bureaucratic satrapy running wild in an orgy of probably civil rights violations through what we can only describe as thug-like, Nazi-like police tactics which seem clearly aimed at eliminating the health food, dietary supplements, and related industries. We do not need protection from L-tryptophan. We need protection from the government in general, and the FDA in particular.

Culbert's organization, which began during the 1970s as the Committee for Freedom of Choice in Cancer Therapy, is the political arm of several interlocking corporations that are promoting and/or marketing questionable remedies for cancer and other serious diseases.

• Saul Kent, president of the Life Extension Foundation, suggested that the FDA is so biased against supplements that a law should be passed to transfer its power to regulate them to the U.S. Department of Agriculture.

The Life Extension Foundation sells supplement products and memberships. Regular membership, which costs \$50 per year, provides product discounts, a directory of "life extension" doctors, a directory of "innovative medical clinics," a copy of *The Physician's Guide to Life Extension Drugs*, and two monthly newsletters, *Life Extension Report* and *Life Extension News*. A few months ago the Foundation announced the formation of Health Issues Cooperative Association, which will lobby for "health freedom" issues. Among other things, it plans to introduce legislation to reduce the FDA's authority, to file lawsuits challenging the agency's control over health care, and to introduce a health-care rights amendment to the U.S. Constitution.

The FDA has been aware of the Foundation's activities for several years. In 1987, FDA officials and U.S. marshals seized large quantities of products marketed by the Foundation, including *BHT* (promoted for herpes and AIDS), *DMSO* (for arthritis and bursitis), *Coenzyme Q10* (for cardiovascular disorders and longevity), and *Cognitex* (to enhance mental function). In November 1991, a 28-count indictment was filed in the Southern District Court of Florida charging Kent and the company's vice president with importing and selling unapproved new drugs and misbranded prescription drugs. According to an FDA report, the products, which were imported from Europe and labeled as nutritional supplements, were promoted for cancer, AIDS, herpes, senility, heart and lung disease, and other illnesses.

• Bonnie Liebman, representing the Center for Science in the Public Interest (CSPI), began her presentation by handing bottles of *Runner's Edge*, *Exercise Edge*, *Cell Guard*, *Ageless Beauty*, *Jet Stress*, and *Energy Extra Enzymes* to the task force chairman.

"It is time for the FDA to start take supplements seriously," she said. "There is no question but that many supplements are frauds. But in its fervor to squelch the irresponsible use of supplements, the FDA has failed to recognize that some segments of the population may need supplements, and many consumers may reasonably wish to take supplements. . . . Given this reality, consumers need the FDA to help separate the good from the bad supplements rather than the blanket advice to avoid them all." Ms. Liebman proposed that the FDA ensure that supplements are safe (or inform consumers that the safety has not been determined) and can be absorbed as their label suggests. She also said that labels should inform consumers of possible hazards and benefits and should not mislead consumers. She took particular issue with claims that are implied in product names:

Name claims range from the familiar *Stress-tabs*, to the less familiar products such as *Diarrhea Be Gone*, *Clear Thinking*, . . . *Livatox Tab*, *Vision Aid*, *Lung Care Tab*, *Masculine Drive Tab*. . . and *Mental Wisdom Tab*, which

I would have brought for this panel but I didn't want to pay the money. It is ludicrous for the FDA to crack down on unsubstantiated health claims while ignoring these products. Curbing name claims would also reduce the number of deceptive products on the market.

• Dr. Thomas W. Richey, testifying for Lederle (which markets *Stresstabs*), ignored Ms. Liebman's attack. He urged that supplement manufacturers be given wide latitude in choosing their ingredients. "It is clear from the congressional record on the Proxmire Amendment that dietary supplements are foods . . . should be defined as broadly as possible, and should include vitamins, minerals and other similar nutritional substances," Dr. Richey stated. When asked by a panelist how the FDA could decide what substances can be included in the "similar nutritional substances" category, he replied, "I don't have any guidance there other than for what the intent of Congress was . . . that if it was to be used to supplement the diet in a nutritional fashion, that it would include things other than vitamins and minerals." When asked whether anything could be excluded by that definition, Dr. Richey replied "Drugs," which generated laughter from the audience.

• Norma Hart, Ph.D., a former school psychologist for New York City public schools, described how her health had been destroyed by a single dose of L-tryptophan, from which she developed eosinophilia-myalgia syndrome. "If I had my way," she said, it would be in large windows of health food stores . . . and on the label something equivalent to 'Take at your own risk, We don't know yet,' or these substances would be . . . prescription drugs so that there could be medical consideration of the need in a given person and of the contraindications."

• Abbey Meyers, executive director of the National Organization for Rare Disorders (NORD), urged that the FDA "eliminate the very real public health risk caused by the unregulated and unsupervised manufacturing, marketing, and sale of dietary supplements and other health food products making unproven medical claims." She was particularly concerned that carnitine promoted by the health food industry is not effective against carnitine-deficiency diseases. She noted:

People do not take dietary supplements because they taste good. Their only value is their perceived medical use. The question is why it takes dead bodies before the

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FDA takes enforcement action against them. Will it take people dying from liver damage because of sustained-release niacin before the agency acts to protect people from seeking to reduce their cholesterol level? Will it take chronic fatigue syndrome patients dying from acute renal failure before you ban germanium? . . . Will it take more dead bodies or merely seriously ill carnitine-deficient infants who nearly die before they are taken off health-food versions of L-carnitine and put on *Carnitor*, the prescription product?

She also noted that although supplement products might be found useful for the treatment of rare disorders, no legitimate drug maker will undertake the necessary research to gain FDA approval unless health food manufacturers are prevented from undercutting their market with unregulated products.

- Eva Taming, an attorney from Chicago, described how she had formed a parent support group called Assistance for Babies and Children with Carnitine Deficiency (ABCD) to help parents and the medical community become aware of the rare but serious problem of carnitine deficiency. She noted that although the prescription drug *Carnitor* is effective against this problem, the health food product L-carnitine is not and can result in unnecessary suffering and even death.

- J.B. Cordaro, president of the Council for Responsible Nutrition (CRN) used his opportunity to repeat CRN's claim that few people obtain 100% of the RDAs of every nutrient from diet alone. (CRN is a 64-member trade association representing major supplement manufacturers and distributors. CRN misinterprets survey findings to suggest that vitamin shortages are widespread and should be remedied by using supplements.)

- Robert E. Olson, M.D., Ph.D., professor of medicine at State University of New York at Stony Brook, refuted Mr. Cordaro's testimony by pointing out that not meeting the RDAs is not the same thing as nutritional deficiency because the RDAs are deliberately set much higher than the average person needs. Dr. Olson said that supplements may be needed by infants, women who are pregnant or breast-feeding, and certain people with unusual lifestyles or diets (such as vegetarians), but that healthy adult men and nonpregnant, nonlactating women do not need vitamin supplements. Dr. Olson chaired an American Medical Association panel which recommended that the ingredients supplements be limited to 50-150% of RDA amounts [JAMA 257:1929-1936, 1987]. He said that supplements intended for the treatment of dietary deficiency diseases and a few

other responsive diseases are therapeutic agents, many of which exceed 10 times the RDA and constitute a hazard for consumers. He recommended that the Proxmire Amendment be repealed so that the FDA could "consider limiting the distribution of therapeutic preparations, which are drugs, to the prescription route only."

- John H. Renner, M.D., of Kansas City, Missouri, testified on behalf of the National Council Against Health Fraud as well as his own Consumer Health Information Research Institute. He recommended that dietary supplements be divided into three groups:

1. Supplements of essential nutrients. These should include vitamins and essential minerals but not free amino acids.
2. Food supplements and herbal products with known pharmacological activity. These should be required to have full, dosage-specific label information, including a warning about excessive dosage.
3. Food supplements and herbals with no known pharmacological activity. These should be labeled with a disclaimer that they are not effective for any health purpose, including purposes described in literature in health food stores or catalogs used to market the products.

I submitted a similar proposal in a letter to the FDA. I believe that use of the term "dietary supplements" should be restricted to products composed of one or more essential nutrients that may be usefully added to the diet. Under such a rule, vitamins and minerals would qualify as ingredients of dietary supplements. Single amino acids, even the essential ones, would not be dietary supplements because isolated amino acid deficiencies do not occur. My proposal also would bar use of the word "dietary supplement" for herbal products and the large number of nutrient concoctions whose real purpose is intended to be therapeutic. The health food industry appears worried that the FDA Supplement Task Force will recommend a policy of this type.

Organizing for Protest

On February 21-23, 1992, about 30 supplement industry leaders attended an "emergency meeting" in San Ynez, California, to discuss events threatening the industry. The meeting was sponsored by the Dietary Supplement Coalition (DSC), a group formed three years ago to defend the health food industry and individual companies against product sei-

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zures [NF 6:16, 1989]. The participants included manufacturers, retailers, trade association leaders, lobbyists, industry advisors, and editors of "health-food" industry trade and consumer publications. The agenda included: 1) the FDA's pending rules for food labeling; 2) proposed legislation to strengthen the FDA; 3) unfavorable recommendations expected from the FDA Task Force on Dietary Supplements; and 4) forthcoming Congressional hearings on various aspects of health frauds and quackery.

"What we heard was that it was do or dietime," said the March editorial in *Health Foods Business*, "The enormity of the situation shocked those present into creating a New World Order for our industry. . . . The issues facing the industry in the next few months are a result of converging movements in Congress and in the Food and Drug Administration that by coincidence or design are gathering momentum, much like a tornado about to strike." The outcome of the meeting was formation of the Nutritional Health Alliance to enable manufacturers, suppliers, distributors, retailers, consumers, and other supplement industry allies to coordinate their efforts.

The Council for Responsible Nutrition also plans to appeal to Congress and call public attention to its viewpoint that the FDA wants to go too far in regulating the supplement industry. For this purpose, CRN has formed the Coalition for Sound Nutrition Policy and raised over \$500,000 to fund its efforts.

Two pending bills worry the health food industry. One is H.R. 2597/S. 2135, which would increase the FDA's enforcement powers as well as penalties for violating the Food, Drug, and Cosmetic Act. The other is H.R. 1662, which would amend the Federal Trade Commission Act to make it illegal to advertise nutritional or therapeutic claims that would not be permissible on product labels. Supplement companies fear that the FDA will ban or greatly restrict sales of individual amino acids, herbal concentrates, and vitamin and mineral supplements whose potency is much above the amount found in regular foods. The industry also fears that the RDI system will decrease supplement sales by increasing people's perception that the foods they consume contain adequate amounts of nutrients.

Another "Vitamin War"?

The health food industry is already generating protests. *Whole Foods* has published a 1-page "Consumer Bulletin" for retailers to reproduce and distribute to their customers. The bulletin urges customers to complain to Congress that the FDA proposals on dietary supplements are too restrictive. *Natural Foods Merchandiser* has said that "if 5,000 stores across the country each submitted 200 letters, Congress would receive one million letters from their voting constituents. Think they would listen? I'd bet on it." Enzymatic Therapy, which has marketed many products with illegal therapeutic claims [NF 7:41-44, 1990], has mailed flyers containing form letters to thousands of independent health food stores for distribution to customers. *Health Store News* has published a special issue containing 24 form letters addressed to "strategic senators and representatives." The issue, available to retailers for \$15/100,

claims that the proposed FDA regulations would result in one million lost jobs, cause health food stores to close, and make vitamins available only by prescription.

The health food industry knows how to generate huge amounts of communication to government officials. A similar campaign begun 20 years ago led to passage of the Proxmire Amendment. The situation arose after the FDA proposed that food products be labeled so that ingredients, nutrient content and other information would be displayed in a standard format. These provisions became regulations with little controversy and are still used today. But the FDA proposal also said that labeling could neither state nor imply that a balanced diet of ordinary foods cannot supply adequate amounts of nutrients [FDA Consumer 7(7):10-16, 1973].

Because this struck at the heart of health food industry mythology about "nutrition insurance," the industry responded with lawsuits and a massive letter-writing campaign asking Congress to completely remove FDA jurisdiction over food supplements. This activity was orchestrated by the National Health Federation (NHF), a militant lobbying group, many of whose leaders had been in legal difficulty for questionable health promotions. Crying, "Fight for your freedom to take vitamins!" NHF organized its members and allies into unprecedented political activity. Article after article urging support of the anti-FDA bill appeared in health food industry publications and chiropractic journals, and retailers urged their customers to join the fray. The issue also triggered the formation of the Council for Responsible Nutrition to represent the political interests of major supplement manufacturers. At a Congressional hearing, several representatives reported that they had received more mail about vitamins than about Watergate.

In 1976, as a result of this pressure, Congress passed the Proxmire Amendment to the Federal Food, Drug, and Cosmetic Act. Though not as restrictive as NHF's original proposal, this law prevents the FDA from regulating food supplements unless they are inherently dangerous or are marketed with illegal therapeutic claims. One FDA Commissioner called the amendment "a charlatan's dream." But the impact on the FDA was greater than the wording of the law itself. The apparent political power of the health food industry made many FDA officials wonder how far the agency could go in regulating supplement promotions that remained illegal. Commissioner Kessler appears to have no such fears. Under his leadership, the FDA has greatly increased the scope and vigor of its enforcement activities.

During the current controversy, the Proxmire Amendment has been mentioned repeatedly by both sides. Consumer protection advocates want it repealed. The health food industry wants it used (and strengthened, if necessary) to oppose greater FDA regulation. It remains to be seen whether Congress can ignore the industry's campaign and do what is needed to protect the public.

Dr. Barrett, a practicing psychiatrist and consumer advocate, edits Nutrition Forum Newsletter and is co-author/editor of 28 books including *Health Schemes, Scams, and Frauds* [Consumer Reports Books, 1990]. In 1984 he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery.

BRIEFS

"Quackbusters" settle libel claims. In an out-of-court settlement, *Vegetarian Times* has paid a total of \$11,000 to Stephen Barrett, M.D., William T. Jarvis, Ph.D., and John Renner, Ph.D., and the National Council Against Health Fraud. The situation arose after the August issue of the magazine published "The Health Fraud Cops," a lengthy cover story that asked whether "quackbusters" are consumer advocates or "medical McCarthyites." The article contained many statements that were false, misleading and/or defamatory and attempted to portray the trio as closed-minded individuals who are unwilling to consider promising "nutritional" methods. The settlement agreement included publication of a detailed rebuttal, written by Dr. Barrett, in the March 1992 issue. Dr. Victor Herbert, who also was improperly criticized in the article, appears likely to file suit against the magazine and several people quoted in the article.

Health food store sales. *Health Foods Business* estimates that 37.8% of sales in health food stores last year were for vitamins and other supplements. Based on its annual survey, the magazine estimated that 7,300 stores grossed \$1.46 billion for these products, down 5.4% from 1990. Total sales for all products were \$3.88 billion (up 3.2%), including \$653 million for herbs and herbal teas (up 39.8%) and \$109 million for books (up 14.7%). Stores with under 3,000 square feet of selling space (87% of total stores) averaged \$310,000, while those over 3,000 square feet averaged \$2.43 million. Homeopathic remedies accounted for 6.8% of the "vitamins/supplements" category.

Organic certification" inches closer. U.S. Secretary of Agriculture Edward Madigan has announced the appointment of 14 members of the Organic Standards Certification Board, mandated by the U.S. Organic Foods Production Act of 1990 to establish standards for the processing of foods to be marketed as "organic."

Data on weight-loss programs. *The Consumer Guide to Weight-Loss Programs* provides detailed descriptions of many weight-loss products and programs. The 90-page book is available for \$23.45 from Marketdata Enterprises, P.O. Box 36-N, Lynbrook, NY 11563.

Increased HDL screening advocated. In February a National Institutes of Health consensus development panel concluded that all healthy Americans having their total cholesterol checked also should be screened for HDL cholesterol. The panel also recommended HDL and triglyceride screening for individuals with desirable (under-200) levels of total cholesterol who are known to have coronary heart disease or who have two or more risk factors for it. To increase precision when treatment decisions are involved, at least two (and preferably three) samples should be taken at least one week apart. Individuals with HDL below 35 mg/dl should attempt to raise their levels by losing weight, stopping smoking, exercising, and eating a lowfat diet.

Dubious weight-control ingredients banned. An FDA ban on 111 over-the-counter (OTC) diet pill ingredients became effective on February 10, 1992. The ingredients include arginine, caffeine, kelp, guar gum, lecithin, papaya enzymes, phenylalanine, tryptophan, and vitamin B₆. These substances can still be marketed as "nutritional supplements" without claims for weight control. Although an 1979 FDA advisory committee report concluded that the banned products had not been proven effective, the agency failed to propose a ban until prodded by a Congressional hearing conducted in 1990 by Congressman Ron Wyden [NF 7:22-23, 1990].

Fibre Trim blasted. In 1989 the FTC charged that Schering Corporation had marketed *Fibre Trim* with unsubstantiated claims that it is effective for weight loss, weight control and weight maintenance. In September 1991 an FTC administrative law judge ruled that there was no scientific evidence to substantiate such claims. *Fibre Trim* is composed of natural fiber from citrus and grain compressed into tablets. The recommended daily dosage contains about 4 grams of fiber. Ads said the product could provide a feeling of fullness and could "take the edge off hunger." A company document estimated that 70% of *Fibre Trim*'s 1986 sales were to consumers "looking for the magic pill" and who "want a product that will do the work." The judge ordered Schering to refrain from making unsubstantiated claims that *Fibre Trim* (a) is a rich source of fiber, (b) could provide any health benefit associated with the intake of fiber, or (c) could provide any appetite-suppressant, weight-loss, or weight-control benefit.

Walter Hudson dies. Walter Hudson, once listed in the *Guinness Book of World Records* as the world's heaviest man, died of heart failure at the age of 46. His reported weight at the time of death was 1,125 pounds. In 1987 he made headlines when started on a meal-replacement program supervised by comedian-turned-weight-loss-guru Dick Gregory. Although Hudson lost weight rapidly for a few months, he regained it after he resumed eating food.

Passive exercise claims attacked. The FTC has charged Slender You, Inc., with making false and unsubstantiated weight-loss claims for the continuous passive motion exercise tables it manufactures and sells to health and fitness centers. Under a consent agreement, the company is prohibited from making such claims in the future.

New book about fermented milk products. The *Encyclopedia of Fermented Fresh Milk Products* provides a wealth of information about traditional and nontraditional fermented milk, cream, buttermilk and whey products, including yogurt, acidophilus and bifidus products, fermented baby foods, "sweet" milk, acidified milk, and many other products. Nutrition Forum's senior associate editor Manfred Kroger, Ph.D., is one of the three coauthors. The 400-page book is available for \$94.95 from Van Nostrand Reinhold, P.O. Box 688, Florence, KY 41042.

Diet and arthritis. A Norwegian research team has reported that a small group of rheumatoid arthritis patients treated with dietary methods for 13 months had fewer symptoms than a control group of people who ate normally. During the first 7-10 days, the treatment group consumed a low-calorie liquid diet with new foods added individually in an attempt to identify foods that might cause arthritis symptoms to worsen. Then these patients followed a vegetarian diet that eliminated dairy products, eggs, refined sugar, citrus fruits, and gluten-containing foods. (Gluten is a protein found in wheat, oats, rye and barley.) The control group ate in their usual way. Patients who appeared helped by the diet relapsed when they resumed their normal eating habits [The Lancet 338:899-902, 1991]. *Tufts University Diet & Nutrition Letter* has cautioned that (1) the experimental diet can lead to nutritional shortfalls that require professional monitoring, (2) the results were based on the experience of only 17 individuals, and (3) a much larger sample would be required for confirmation.

Notable quote. Vitamins actually play a minor role in our overall health. Together with most minerals they make up the *micronutrients* of the diet, while fats, proteins and carbohydrates are the primary *macronutrients*. As the names imply, macronutrients have a far greater influence on health than do micronutrients—both for better and for worse.—*Lahey Clinic Newsletter, December 1991.*

DECEPTION FOUND AT COMMERCIAL WEIGHT-LOSS CLINICS

On April 30, 1991, a sales representative from a diet center in New York City told a 5'8" woman who weighed 130 pounds that she was 5 pounds overweight and could afford to lose 7 pounds. This ran counter to the advice of the woman's personal physician who confirmed that she already had an ideal weight and did not need to lose more. Moreover, the 7-pound loss would have put her several pounds beneath the ideal target weight listed on the sales representative's own chart. The program would cost \$710 with maintenance, which amounted to \$100 per pound. When the woman failed to sign up, the sales representative pressed her repeatedly and offered her reduced payments as an incentive.

On May 8, 1991, a 5'8" man who weighed 178 pounds was told at another center that he should lose 18 pounds. No measurements other than weight were taken. The man worked out regularly and was very muscular. He had a low body fat content and did not need to lose weight. On the same day, at another center, another man who was 5'9" and weighed 142 pounds was urged to sign up for a program to lose 8 pounds in 2 weeks.

These experiences were reported by agents of the New York City Department of Consumer Affairs who called or visited 14 weight-loss centers last year. The study concluded:

- Few of the centers gave advance warning or openly discussed the safety risks of their program, or of rapid weight

Candy cigarettes seductive? Two studies have explored the influence of candy and bubble gum cigarettes on the attitude and behavior of children toward smoking [Pediatrics 89:27-32, 1992]. One study found that young children in focus groups played with candy cigarettes and imitated adult smoking behavior. The other study found that children who repeatedly buy candy cigarettes are more likely than nonbuyers to experiment with smoking. Noting that "parents and public health professionals would not sanction toy marijuana joints or crack cocaine," the researchers recommended that candy cigarette products be eliminated as part of our society's efforts to prevent children from starting to smoke.

Raw milk creamed again. The California Court of Appeal has upheld a 1989 lower court verdict ordering Steuve's Natural and Alta-Dena Certified Dairy products to place a warning label on their raw milk products. The appeals court concluded that, contrary to the claims made in Alta-Dena's advertisements, raw certified milk: (1) can contain highly dangerous organisms, (2) is less safe than pasteurized milk, (3) does not possess superior health and nutritional benefits, and (4) is not produced under the strictest health standards in the industry. The appeal court also upheld the trial court's assessment of civil penalties (\$23,000), restitution (\$100,000), and payment of more than \$1.5 million in fees to the attorneys representing Consumers Union, which had initiated the lawsuit.

loss in general, even when directly asked about possible problems. One representative said her center's program was "absolutely safe" even though the health history form prospective clients had to sign contained a warning about health risks.

- Some centers attempted to sell their services to people who didn't need them, including the underweight.
- Some centers were engaged more in quackery than medicine. One clinic representative advised that filling the stomach with certain foods would speed up metabolism. Another said her clinic's maintenance program would "close up the body's fat cells."
- Some centers engaged in high-pressure sales tactics.

The Department has proposed regulations that would require weight-loss centers to (a) display a large sign stating that rapid weight loss (more than 1 1/2 to 2 pounds a week) may cause serious health problems, (b) advise consultation with a physician, (3) indicate that only permanent lifestyle changes can promote long-term weight loss, and (4) inform customers that information on dropout rates and staff qualifications is available on request.

The report, *Weighty Issues: Dangers and Deceptions of the Weight Loss Industry*, is available for \$5.00 from the Communications Division, New York City Dept. of Consumer Affairs, 42 Broadway, New York, NY 10004.

NUTRITION

Forum

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THE SHADY BUSINESS OF NATURE'S SUNSHINE

Jack Raso, M.S. R.D.

Nature's Sunshine distributors are using dubious diagnostic tests and prescribing herbs and other products for a large variety of health problems. Many of these people appear to be committing theft by deception and practicing medicine without a license.

Multilevel marketing (also called network marketing) is a form of direct sales in which "independent" distributors sell products, typically to their friends and acquaintances. Distributors can buy products "wholesale," sell them "retail," and recruit other distributors who can do the same. When enough distributors have been enrolled into a recruiter's "downline," the recruiter is eligible to collect a percentage of their sales.

Nature's Sunshine Products, Inc. (NSP), of Spanish Fork, Utah, has been training its distributors to use iridology, "muscle-testing," and "body typing" to market hundreds of the company's products. According to its literature, NSP has grown from a "kitchen table enterprise" in 1972 into an international business with annual sales exceeding \$60 million and distributors in all 50 states, Canada, England, Australia, and New Zealand. The business began with herbs but has expanded into vitamins and other nutritional supplements, homeopathic remedies, skin-care products, hair-care products, water treatment systems, cooking utensils, and a weight-loss plan. Over the years, more than 250,000 people have signed on as "independent" distributors.

The Distributor Kit

Becoming an NSP distributor is simple and requires no prior training in either health or nutrition. All it takes is submission of a 1-page application with a \$35 fee.

NSP's distributor kit consists of a looseleaf binder labeled "The People-To-People Health Business" and a wire-bound book called *A Systems Guide to Natural Health*. The looseleaf binder contains a congratulatory form letter, a product catalog, a manual of policies and procedures, four different price lists, distributor applications, order forms, a receipt book, and

flyers concerning products, payment plans, discounts for new distributors, and group insurance. The policies and procedures manual contains a 15-point "Code of Ethics," which includes: "I will not make any false or therapeutic claims concerning any NSP product" and "I will service a minimum of ten retail customers each month." Distributors also receive a 1-year subscription to NSP's monthly magazine, *Sunshine Horizons*.

The *Systems Guide*, published in 1988, contains about 80 pages. About half of the book describes various body systems and the products NSP relates to them. For each system, there are "key," "primary," and "complementary" products. Key products combine ingredients to "provide comprehensive nutritional support" for the body system. Primary products are combinations "designed to provide more specialized support for the particular system." Complementary products are single-ingredient items "for individuals who want to round out the systems approach to holistic health."

The circulatory system's "key" product is *Mega-Chel*, which contains 12 vitamins, 9 chelated minerals, choline, inositol, PABA, bioflavonoids, fish oils, adrenal substance, thymus substance, and spleen substance. The "primary" circulatory products include *CoQ-10 Plus*; *Bugleweed Liquid Herb*; *Capsicum*, *Garlic & Parsley*; and herbal mixtures (*BP-X*, *GC-X*, *GCC*, *ATC*, *HS-II* and *I-X*) that contain from 3 to 14 ingredients. The "complementary" products include butchers' broom root, capsaicin, garlic, hawthorn berries, liquid chlorophyll, magnesium, omega-3 fatty acids, and yellow dock root. Each of these products is said to provide "nutritional support" for the circulatory system. Products for other body systems are listed in the table on page 19.


Body Hype

Since 1989, NSP has been marketing *GlanDiet*, a meal-replacement program based mainly on the the book, *Dr. Abravanel's Body Type and Lifetime Nutrition Plan*, by Elliot B. Abravanel, M.D., and his wife Elizabeth King. The book maintains that there is a "dominant gland" at the root of every weight


problem and that weight can be controlled by soothing the errant gland and moderating its cravings. The book advises that the corrective plan be tailored to the individual's "body type," which is determined by examining the person's shape, body fat distribution, food cravings, sleep patterns, and various other characteristics. Women can be classified as "thyroid," "pituitary," "adrenal," and "gonadal" type, while men can be classified as "thyroid," "pituitary," or "adrenal." The personality traits described for each type resemble those of a typical horoscope.

According to NSP literature, the object of the *GlanDiet* Program is "to bring balance to out-of-balance systems." Two types of meal-replacement powders are available for this purpose. One, formulated for thyroid and pituitary types, "contains a higher concentration of protein than carbohydrates because carbohydrates tend to stimulate the pituitary and thyroid glands, while protein tends to stimulate the adrenals and gonads." The other powder, said to have a higher ratio of carbohydrate to protein, is formulated for adrenal and gonadal types. To help distributors design the correct program, NSP provides "a convenient body type questionnaire... based solely upon shape and build." For each type there also are "foods to eat or avoid" and various herbal teas and supplement products. All dieters are advised to begin with a "two-to-three day cleanse," engage in aerobic exercise, and aim for an overall calorie count of 1,200/day for women or 1,400/day for men. Obviously, most people who exercise and restrict calories to such levels will lose weight whether or not they use NSP products.


A-Type (Adrenal)




P-Type (Pituitary)



T-Type (Thyroid)



G-Type (Gonadal)




What is your Body-Type?

Each of us is biochemically unique. Therefore, no single diet program will meet every individual's needs.

Recent research now shows there are 4 distinct body types — 4 types of metabolism. Your body shape is determined by which of the major glands (thyroid, adrenal, pituitary, gonadal) is most dominant in your system. This dominant gland determines which foods you crave and where fat appears on your body.

Nature's Sunshine Products now offers a fascinating new weight control program that works with your body to achieve maximum results. The **GlanDiet** Program features meal replacement beverages and vitamin/herb formulas specially designed for your body type.

Find out about GlanDiet today!



Advertising slick for GlanDiet (1990)

"Homeopathic" Products

Homeopathy is based on the idea that greatly diluted substances can exert powerful therapeutic effects on the body. This idea is utter nonsense, but the FDA permits homeopathic products to be marketed without proof that they work as claimed [NF 4:1-6, 1987].

NSP markets about 50 homeopathic products, most of which are named after a disease or symptom. The product *Candida*, for example, is said to be a "natural homeopathic medicine for the relief of the itching, burning and other symptoms associated with Candida yeast infections." The product *Parasites* is for "minor intestinal symptoms associated with parasites such as bloating, abdominal pain, flatulence and diarrhea." *Gout* is for "minor pain, heat, redness, and swelling associated with gouty inflammation of the joints." *Incontinence* is for "occasional minor bladder incontinence (involuntary urination) in adults." *Depressaquel* is "to assist in the reduction of minor feelings of melancholy, apathy and listlessness by lifting the mood and mental outlook." And so on. Each product contains very small amounts of about ten ingredients.

An NSP manual depicts the label of each homeopathic product on a separate page, followed by long lists of symptoms said to be associated with each ingredient. For example, *Gout* contains a 1:100,000 dilution of poison ivy, which is "associated" with "rheumatic and gouty conditions which worsen in cold, wet weather, improve with movement." The manual also lists "nutritional support companion products" for many of the homeopathic products. This setup enables NSP to suggest therapeutic uses for herbal products and supplements without making explicit claims for them.

FDA regulatory guidelines state that "nonprescription homeopathics may be sold only for self-limiting conditions recognizable by consumers" and that their labeling "must adequately instruct consumers in the product's safe use." Candidiasis, parasites, depression, gout, incontinence, and several other conditions for which NSP markets products do not appear to meet these criteria.

Distributor Training

NSP sponsors many meetings and courses at which distributors can receive training.

- Distributor School is a two-day program given at various locations throughout the U.S. and open to all distributors and managers. In 1988 NSP launched the program and announced:

Distributor School will be built around the new catalog, "A Systems Guide to Natural Health." Students will learn [NSP's] philosophy of natural health, plus they will be taken on a tour of the body, system by system. For each system they learn the basics of what that body does and what happens when it starts to break down. Attendees will come away actually knowing the key products to use for each of these systems.

Thus they will have a working knowledge of which nutritional supplements to choose to feed the various systems of the body.

In addition, there will be a carefully constructed business and motivation session that will teach distributors how they can support their own good health habits by sharing their new-found knowledge with others.

NSP's Distributor School kit provides specific guidelines for staying within the law and proposes "legal" ways to promote NSP supplements, such as discussing the "historical uses" of herbs and how herbs, "as foods," contribute to health.

According to the kit, the company will pay up to \$2,000 per calendar year to help defray the expense of any lawsuits filed against an active distributor or manager on grounds of prescribing or diagnosing.

• Manager School was a 5-day program given several times a year at the company's home office. Its purpose was to train people "to really be Natural Health Counselors." The program included "in-depth training in iridology, muscle-testing and nutritional supplements." However, "business and legal information will be woven into the fabric of how to actually practice natural health consulting properly." The program also included role-playing of counseling sessions. The course materials included iridology and muscle-testing charts. Managers

NSP's "SYSTEMS APPROACH" TO NATURAL PRODUCTS

Body System	Key Products	Claims for Key Product	Primary Products	Complementary Products
Circulatory	Mega-Chel	Improves vascular and heart muscle tone, improves circulation throughout the body; lowers LDL	Co-Q10 Plus, herbal combinations	Butcher's broom root, garlic, capsicum, hawthorne berries
Digestive	Food enzyme digestive aid Protein digestive aid (HCl)	Enhances utilization of food, supports weakened pancreas For people who need help digesting protein or are on a high-protein diet	Herbal combinations	Fennel, ginger, safflowers
Intestinal	Bowel Build	Nutritionally enhances digestion and provides dietary fiber, promotes cleansing of toxic intestinal buildup	Psyllium hulls, herbal combinations	Acidophilus, aloe vera, cascara, single herbs, liquid chlorophyll
Nervous	Nutri-Calm	Provides the nutrition the body needs to cope with a busy modern world	Herbal combinations; some contain valerian	Blackcurrant oil, evening primrose oil, lecithin, single herbs
Glandular	Master Gland Formula	Strengthens the thyroid, adrenals, and pancreas	Herbal combinations	Chromium, vitamin C, kelp, single herbs
Immune	Immune Maintenance Formula	Counters the effects of poor foods, pollution, and other things harmful to us	Target Immune Formula, germanium, herbal combinations	Barley juice, pau d'arco, vitamins, single herbs
Respiratory	ALJ Formula	Removes trapped toxins from mucous linings of respiratory system	Herbal combinations	Single herbs
Structural	SKL Formula Target Endurance Formula	Maintains strong and healthy bones Nutritionally feeds the body's muscles	Herbal combinations, trace mineral product, massage lotion	Aloe vera, comfrey, other single herbs
Urinary	URY	Nutritionally supports the urinary system ; helps cleanse blood and resist infection	Multivitamin/mineral product, potassium, herbal combinations,	Vitamins, single herbs
Skin and Hair	External: Herbal Trim Internal: HSN-W	Works from the outside in to break up and rid the body of toxins and impurities Nutritionally supports the structure and function of the skin from within	Herbal salve, ointment, and skin conditioner Chlorofresh	Tea tree oil, pau d'arco lotion, horsetail, aloe vera gel, vitamin C, sage

were encouraged to hold regular meetings to explain the body systems and key products to new distributors. Late last year, Manager School was converted into a 2-day affair called Natural Health and Business School.

- A Professionalism Symposium is offered following the company's national convention each year. This meeting features speakers on health and business topics and workshops on muscle-testing, advanced iridology, Chinese herbology, and new NSP products.

- Other educational opportunities are offered through area herb conferences, lectures at the national convention, conferences for leading distributors, and regional conferences for distributors who wish to focus on selling NSP's water treatment system.

Dubious Diagnostic Tests

Iridology and muscle-testing are used as the basis for prescribing NSP products. Iridology is based on the notion that the body's health status can be determined by examining the iris (the colored portion of the eye surrounding the pupil). Iridologists claim to diagnose "imbalances" that can be treated with vitamins, minerals, herbs, and similar products. In *Iridology Simplified* (1980), which is on NSP's suggested reading list, chiropractor Bernard Jensen wrote: "By knowing in advance one's weak tissues and organs, as can be revealed by iridology, it is possible to supply needed nutrients and thereby prevent unnecessary illness and disease from occurring."

NSP's muscle-testing is a variation of "applied kinesiology (AK)," an elaborate pseudoscience concocted during the 1960s by a chiropractor. AK is based on the notion that every organ dysfunction is accompanied by a specific muscle weakness, which enables health problems to be diagnosed through muscle-testing procedures. AK practitioners—most of whom are chiropractors—also claim that nutritional deficiencies, allergies, and other adverse reactions to food substances can be detected by placing substances in the mouth so that the patient salivates. "Good" substances supposedly make specific muscles test stronger, whereas "bad" substances cause specific weaknesses. The recommended "treatment" includes dietary measures and food supplements. Controlled studies have found no difference in response to test substances and placebos.

During my investigation of Nature's Sunshine, I was unable to find out the precise manner in which its distributors use iridology and muscle-testing to market their wares. Regardless of the details, under state laws, a commercial interaction in which a person attempts to discover a health problem and recommend a product to solve it constitutes the practice of medicine.

NSP is well aware of this fact. Its literature and training sessions warn distributors not to "diagnose" or "prescribe." The distributor application form requires an acknowledgement that NSP's products "are not intended for and are not to be sold as a cure, ameliorant or palliative for any disease or ailment, and that such products are sold solely and only for nutritional purposes." An article in the February 1989 *Sunshine Horizons*

advises distributors:

Teach, don't prescribe and diagnose. . . .

Instead of diagnosing, ask questions. Be particularly careful when using iridology and muscle-testing. For instance, don't say "You have a sinus problem." Rather, ask them, "Do you have sinus problems?" Let them diagnose themselves. You can also teach by talking to them in the third person. For example, you might say, "People with lymphatic rosaries typically have trouble with their sinuses." Or you can cite authorities: "Dr. Bernard Jensen says that this particular eye sign is associated with sinus congestion."

Always make clear that the information you are providing is only educational in nature and that the decision as to what they will do must be left up to them.

... Practice saying things correctly with family and friends so that the correct things to say and do are so ingrained in you that you never have to worry about getting "trapped" into practicing medicine without a license, even when dealing with strangers.

Despite the doubletalk, this approach appears illegal. Courts have long ruled that one cannot escape responsibility for practicing medicine without a license or marketing unapproved drug products by calling them something else. In addition, the use of false statements to sell products constitutes theft by deception.

Distributor School

In the spring of this year, I contacted NSP's Manager Service Department and expressed an interest in becoming a distributor. I was referred to a potential sponsor who lived in my neighborhood. When I telephoned, his son explained that his father had to see a "patient," whereupon I asked whether father was a doctor. The son replied that he was an iridologist.

On April 4, 1992, I attended NSP's Distributor School at a hotel in Uniondale, New York. The tuition was \$35. Fifty-eight people were registered for the program. The *Distributor School Preparatory Workbook*, which each of us received, states the school's goal: "To provide an active understanding of Natu-

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All correspondence should be sent to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105. Telephone 215-437-1795.

ral Health which can be used to improve health and can be shared with family and friends."

The program began with the presentation of "Why Herbs?" a video promoting herbal supplementation in general. Shortly afterward, Molly Wright, our "trainer," said she wanted "to talk about where health begins." She asked where it begins, and told us to feel free to answer her questions. A distributor responded: "On the cellular level."

"The millions and millions and billions of cells" of which the body is composed, said Molly, have five basic needs: oxygen, water, nutrients, proper elimination, and even temperature. We can control "a certain amount" of these needs, she said, and "what we can control, it's our business to try to control." She described herbs and vitamins as "a great nutritional source," particularly "when we eat foods that don't have all the nutritional value." Then she referred to Alexis Carrel (1873-1944), a French-American surgeon who received the 1912 Nobel Prize for Medicine. Carrel developed methods for keeping tissues and organs alive in vitro for long periods. The *Workbook* also cites his work and states: "Under proper conditions, cells can live forever."

"If you've ever been to a nutrition class in the medical university," Molly said, "the nutrition specialist will say that you really don't need vitamins and herbs because if you eat the right foods... you'll get the right nutrients you need. But we can't trust all the foods we're eating... We can't always rely on the quality... The quality of the nutrients... is certainly important." This "lack of nutrients," according to Molly, causes a "weakening condition" of the body. "Another way that the body gets sick," she said, is "toxic buildup." This, she claimed, is caused by "a stressful environment and improper elimination."

"When the body is trying to accumulate its nutrients," Molly elucidated, "if it's clogged with toxins, then... even if you're giving it all the right things, it's not going to be able to use them as it should because of this toxic condition." If the body isn't able to "eliminate properly," she added, "those toxins are going to build, and so we need to assist it in cleaning." She also referred to Chinese yin-yang philosophy.

"Nature's Spring"

Next, Molly discussed tap water. "Most of the water that is supplied to your home is not used for drinking," she said. "The solution then would be to clean just the water that you're going to drink. And since the city can't do that for us at this time, we need to be aware of how we can best do that."

Molly then informed us that the solution to tap water safety is *Nature's Spring II*, an NSP water treatment system retailing for \$520. In a video presentation that followed, the narrator described it as "an easy-to-use countertop unit designed to help ensure that the water you drink is the way nature intended it to be." A distributor in my row informed Molly that she'd had her tap water tested and that "the results were really shocking." She said the sample had contained fecal matter and had been "very toxic, very high in metals, very high in lead." I later observed this distributor washing down some pills with

what she said was "Nature's Spring" water. She had brought a gallon container of it with her.

"The difference in the taste—that's kind of interesting," said Molly. "It does to me taste a lot better because I'm used to it now. But when we first bought our *Nature's Spring* unit, I put the regular tap water and then the *Nature's Spring* clean water in two different cups, and I had my husband taste it to see which one he liked better; and he picked the one that was regular tap water." Later Molly said:

You're always washing things for your body. What about washing the water for the inside of your body? That's the important place to start. . . .

Whatever's put into that water, whatever's in the environment can be absorbed in that water, from the rainfall, whatever's in the sky. . . . Insecticides, pesticides. . . even the things that are used to treat the water are harmful for you.

NSP's brochure for its water-treatment devices states that distributors are independent of the company and "not authorized to make any representations on behalf of Nature's Sunshine." The brochure also states:

Nothing in this material or in any statement concerning Nature's Sunshine, or in any statement attributed to Nature's Sunshine, is intended to make any of the following representations, claims, or statements: (1) That your water supply contains, or may contain, any contaminant or contamination (or any health-related physical, chemical, biological, or radiological substance or matter); (2) That scientific certainty exists regarding the relationship between acute or chronic illness and water supply.

Prescribing vs. Recommending

After a break, Molly conducted a discussion of NSP's herbal supplements. She referred to chemist Mark Pedersen, whom she identified as NSP's director of research and development. Two paperbacks written and published by Pedersen sold for about \$12 each at the school: *Nutritional Herbology* (1991) and *Nutritional Herbology, Volume II: Herbal Combinations* (1990).

The back cover of the first volume states that *Nutritional Herbology* "provides the nutritional profile or 'label' for 106 commonly used herbs and natural foods. It is ironic that avid 'label readers' are only provided nutritional profiles of processed foods, while the most desirable foods, natural herbs, foods and food supplements are never sold with nutritional information, until now." Moreover, the book "combines a detailed history and use of each herb with the nutritional profile to explain and interpret many historical uses of herbs as foods and medicines." Actually, Pedersen goes further in his book, listing: herb constituents of little or no nutritional import, the "definite actions" and "probable actions" of each herb, and instructions on preparation and dosage.

Volume II categorizes herbal combinations according to the physiological system—circulatory, digestive, glandular, etc.—for which they are purported to be therapeutic. They are further classified according to whether they are recommended for “excess conditions” or for “deficient conditions.” The book includes a “Medical Index” of diseases and symptoms.

Molly cited Pedersen as responsible for many of NSP’s herbal combination products. She expounded:

He has written books to give... information on Nature’s Sunshine Products. And Nature’s Sunshine cannot sell these books, even though they’re perfect for our use, because we’re a manufacturing company and realize the conflict between a manufacturing company and a publishing company. The FDA recognizes that as conflict of interest, [and so] we can’t publish the information that you really want to know about the products.... We can’t look like we’re prescribing actual products that we’re manufacturing. So that’s why we have such a healthy education program, and everyone is into self-learning.

Molly thereupon announced that the books could be bought from her and briefly described the first volume. “When you put these herbs together in certain combinations,” she claimed, “they actually go in and target and help with whatever’s going on.”

Based on Pedersen’s empirical classification system, the Distributor School literature lists four categories of herbs: 1) aromatic (“stimulate action, speed things up”); 2) mucilaginous (“soothe, lubricate, absorb water/toxins, slow things down”); 3) bitter (“loosen, soften, relax, dissolve, liquefy”); and 4) astringent (“contract, tighten, tense, tonify, solidify tissue”). Molly cited several herbs, including aloe vera and slippery elm, as mucilaginous. “A mucilage herb has a cooling down effect,” she told us. “It has a soothing effect.” She claimed that aloe vera “has cooling properties in it” and would have a cooling effect on “the inflammation in the body or whatever needs to be cooled down in the body.” “If you have anything hot before [ingesting] slippery elm,” she stated, “then you will feel that cooling down going on.” She said that saponins, present in bitter herbs, may be thought of as soap, since they “clean out the dirty.”

Bowel Build, one of NSP’s “key products,” is a combination of vitamins, minerals, herbs, and digestive enzymes. NSP’s catalog describes it as “food for the gastrointestinal tract itself.” Molly said it was a good example of a synergistic product, having both “laxative-type herbs in it to help cleanse” and “building-type herbs in it to help strengthen the... system.” She asked if they would “cancel each other out,” and then explained that “the herbs work not like a chemical or a drug that’s going to actually change something. They’re just going to either... support or cleanse the system somehow so that it gives you the right benefit.” The herbs will do “what’s needed,” she claimed, but won’t have any bad effect on the rest of the system.

The “systems approach” was Molly’s next topic. She began with the digestive system. “This,” she said, “is where you should start when you’re thinking about health.... Cleansing is

very important because... if you want to give yourself nutrients that your body needs and there are toxins blocking the way for those nutrients to be used, then you need to clean those toxins out of the way first so that you can use those nutrients.”

“Nothing Illegal or Weird”

“If you are working with your medical doctor on something that you have a specific problem with,” she told a questioner, “I’m not advocating that you stop doing that. But you can use your judgment and your education.... The drugs are going to probably cause the herbs to not work like they should.” Later, she stated: “Some drugs will wipe out the effects of your herbs.” Although Molly advised distributors who were not licensed health professionals against prescribing or diagnosing, she did suggest an alternative:

If somebody comes to you... or if you know somebody who has friends with, like, a diabetic problem... use your knowledge about the product that would support somebody with a diabetic condition. And you recommend to them that that’s what you would do if you had that type of condition in the body....

You’re giving a referral, basically, just like you would recommend a movie that you saw, or a play that you saw and that you enjoyed. You’re telling them... about the experience that you had with this product, and that’s why it would work. And if you don’t know of [any] experience, you can do some research into the historical uses, and they need to rely on the historical uses.

The “Herbal Hour”—a home meeting designed to generate sales—is described in printed material I obtained at the school. It includes a “script” and defines herbs as “little units of concentrated energy that nourish and energize the body and provide missing nutrients that supply the raw materials that we so desperately need to allow the body to do its job.” The Herbal Hour instructions advise:

Tell your group that you are not there to prescribe or diagnose, that you are not a doctor so it is not legal for you to go beyond sharing information with your friends and neighbors. We like to explain, however, that it is their legal right to prescribe for themselves, so if they choose to use the information for themselves, they may do so.

When a distributor asked the difference between prescribing and recommending, Molly replied: “Prescribing is actually saying: ‘If you have a cold... you need to take this common cold product that Nature’s Sunshine sells.’” But saying “If I had a cold, I would take this because I know it helps clean the mucus out of my system, and that will make the cold go away” would merely be recommending, she said. “It’s just a matter of semantics,” she added. Then she proposed a similar alternative to diagnosis:

Somebody comes in, they're sneezing and running at the nose. If you say—"Oh, you have a cold. Here's a product for you."—that's diagnosing. You're telling them they have a cold, and you're not a doctor to tell them that. [But you could] say: From what it looks like . . . you know . . . you're having some respiratory troubles, and these are good respiratory disease products . . . probably the ones that you're thinking of."

Nevertheless, one distributor raised the question of lawsuits. She conceded that there had been cases involving distributors who "would not watch how they're recommending products." But she added: "It's not something you need to be concerned with. . . if you're just recommending the product and selling them. . . We're not doing anything illegal or really weird."

The Name Game

Next, Molly discussed NSP's "key products." She asked if anyone had had good results using any of the products for gastric ulcers. One distributor stated she advises people against drinking water with meals because it interferes with the action of hydrochloric acid and digestive enzymes. She said that drinking water with meals had been described to her as "the work of the devil." Another distributor concurred. "But," she added, "there are medical-nutritional doctors who say that's nonsense."

"It just shows you," Molly rejoined, "the different type of training that they have." The distributor countered that the doctor to whom she had alluded was a "natural doctor"—a "nutritional" doctor. Molly responded that in nutrition schools, "nutritional philosophy is taught right along with the medical philosophy." Such schools, she claimed, teach that "if you do certain things in a certain way, then you don't need to be aware of any of these other things."

"A lot of these products you'll just take the rest of your life," said Molly, "because [of] the imbalance of your body, or you may have an inherently weakened state that you have to work with always." She indicated that the names of the herbal combination products refer to the conditions or organs they are designed to treat. For example, "U" stands for "ulcer"; "UC3-J," for "ulcers, colitis, Crohn's disease, and celiac disease"; AG-C and AG-X, for "anti-gas"; and BLG-X for "bile, liver, and gallbladder." The letter "C," if it follows the hyphen, designates that the product is based on a traditional Chinese formula. Other letters following the hyphen refer to

the designers of the formulas. For example, "A" refers to Paavo Airola (a naturopath) and "X" to Dr. John Christopher (an herbalist).

"Herbal Cleansing"

Molly claimed that, ideally, people should have three bowel movements daily, and she declared that "everyone has a certain degree of parasites." She asked us how "optimal and proper elimination" can be supported. One distributor suggested "LBS II," a "lower bowel stimulant" composed of nine herbs including cascara sagrada (a laxative). Another revealed that she'd neglected to tell one of her clients to ingest ample fluids with the herbal supplements he had been taking to "cleanse" himself. "Totally unbeknownst to me," she explained, "he was not drinking any water. He prided himself on being able to get by with only two glasses of fluid a day. . . . And so he had horrendous stomach pains, and it wasn't until we went through everything [that we realized what the problem was]—and then he just went: 'Oh, you mean you have to drink water?'" The audience laughed. "Horrible stomach pains," she emphasized. "I mean horrible. . . I was just amazed that he didn't put that together at all. . . and I didn't even ask."

Another distributor acknowledged that she hadn't felt well during an herbal "cleanse." Molly attributed this feeling to the excretion of toxins. "A lot of times when toxins are coming out of the body," she explained, "you experience the symptoms. That's the body's way of healing itself. So if you get a flu-like symptom with that cleanse, don't be alarmed." Molly referred to this reaction as a "healing crisis."

The Bottom Line

Nature's Sunshine is marketing hundreds of dubious products intended for the treatment of health problems. Its distributors are using unscientific methods as a basis for recommending products. The company also provides an extensive framework of false, misleading, and unproven statements with which to promote the products. I believe that, despite its elaborate system of disclaimers, NSP is breaking the law and encouraging its distributors to do likewise.

Mr. Raso, a registered dietitian, lives in New York City and is preparing a book on "paranormal" nutrition.

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BRIEFS

Anthology updated. The Dushkin Publishing Group, Sluice Dock, Guilford, CT 06437, has published *Nutrition 92/93*, its fifth annual sourcebook of nutrition articles. Edited by Charlotte Cooke-Fuller, Ph.D., of Towson State University, with help from Dr. Stephen Barrett, the book contains 67 significant articles from magazines, newsletters and scientific journals. Single copies are available for \$10.95 plus \$2/order for postage from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

EMS associated with lysine. Eosinophilia-myalgia syndrome has been reported in a 33-year-old woman who took an array of products that included lysine and homeopathic remedies, but did not include L-tryptophan [NJ Med 89:285-286, 1992]. Lysine use is suspected in at least three other cases. Reprints of the report are available from Michael Patmas, M.D., 1749 Hooper Ave., Toms River, NJ 08753.

High-tech AIDS ripoff. The New York City Department of Consumer Affairs has concluded that many private home-care suppliers have been engaging in "bedside robbery." The biggest problem is the provision of total parenteral nutrition (TPN), a liquid protein and fat supplement fed intravenously through a surgically implanted catheter to AIDS patients whose digestive system no longer functions normally. The Department's report, "Making a Killing on AIDS," cites instances where insurance companies and government agencies have been billed more than \$15,000 a month for treatment that costs much less to deliver. Only three out of twelve companies responded to the Department's questionnaire about prices for their services. Several patients reported that buying supplies through a pharmacy and administering TPN themselves could more than halve their home-care costs. The report is available for \$5.00 from the Communications Division, New York City Dept. of Consumer Affairs, 42 Broadway, New York, NY 10004.

Diet and behavior. Information presented at a 1991 symposium on diet and behavior has been published in a 92-page book. The symposium was sponsored by the National Center for Nutrition and Dietetics with funding from The Sugar Association. The topics include: (1) consumers' food habits and safety concerns, (2) nutrition and cognitive performance, (3) food additives and behavior, (4) nutritive sweeteners and behavior, and (5) high-intensity sweeteners and behavior. Copies of the book can be purchased for \$2.00 from The Sugar Association, 1101 15th St., N.W., Suite 600, Washington, DC 20005.

Information on new food labels. The Food Label Education Project (FLEP), a consortium of industry, government, and professional and consumer groups, is developing educational materials to explain the labels resulting from the FDA's proposed food labeling rules [NF 9(1):1-5]. For information about FLEP and its forthcoming materials, write to: Regina Hildwine, Industry Analyst, National Food Processors Association, 1401 New York Ave., N.W., Washington, DC 20005.

Genetically-engineered produce approved. The Bush administration has agreed to permit genetically-engineered fruits, vegetables, and grains to be sold without government testing if their new properties can be found in plants people already eat. The new policy is intended to treat foods developed through biotechnology the same way as all other foods: the degree of oversight will depend on the characteristics of the food rather than the method by which it is produced. The first product anticipated is a tomato that has been altered to remove the enzyme that makes vine-ripened tomatoes spoil. Currently, tomatoes are picked green, sprayed with a gas to ripen them, and then shipped. Calgene's new Flavr Savr tomatoes, which can be picked when red and juicy and shipped thousands of miles without spoiling, are expected to reach supermarkets in late 1993. About 30 companies are developing dozens of crops, including tomatoes, melons, potatoes, celery, carrots, and cucumbers. Other products being researched include a low-cholesterol pig, cholesterol-free canola oil, and a cotton plant that packs its own weed-killer. Biotechnology opponents have threatened that unless the FDA conducts a formal rulemaking procedure, they will initiate legal action to prevent genetically engineered products from being sold.

Vitamin A and liver damage. Researchers who reviewed 41 cases of vitamin A toxicity have concluded that total cumulative intake was a critical factor. One person took six years to develop cirrhosis on a daily dosage of 25,000 IU, but those on higher doses developed cirrhosis sooner [Gastroenterology 100:1701-1709, 1991].

Primrose oil seizure upheld. A U.S. Court of Appeals has upheld a lower court summary judgment against Efamol, Ltd., a company headquartered in Nova Scotia, Canada. Efamol, Ltd., is the leading marketer of evening primrose oil (EPO) products sold throughout the United States. In 1979 the FDA had notified Efamol representatives that EPO could not be imported into the United States unless the company sought and obtained approval by filing an appropriate food additive petition or new drug application. Although Efamol said that it would not export the oil to the U.S., it continued to ship it in bulk to California for encapsulation. The capsules would then be shipped to distributors who would market them as dietary supplements through health food stores or by mail-order. In 1989, at the FDA's request, a U.S. marshal seized 45 drums of EPO en route to the company in California. The FDA had evidence that Efamol, Ltd., was spreading therapeutic claims through press conferences, news releases, news bulletins to distributors, and many other channels of communication. One piece of evidence was a videotape of Efamol's president telling a gathering of health food retailers exactly how to prescribe EPO for premenstrual syndrome. Although Efamol, Inc., could have been charged with marketing an unapproved new drug, the FDA felt that treating it as a "food additive" would make the court case simpler.

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CHIROPRACTORS AND NUTRITION: THE "SUPPLEMENT UNDERGROUND"

Stephen Barrett, M.D.

Many companies market supplement concoctions to chiropractors with claims that would be illegal on product labels. Although this marketing channel poses considerable danger to consumers, government enforcement agencies have been reluctant to explore it.

About 50 companies market supplements through chiropractic offices, where they typically are sold for at least twice their wholesale cost. Many of these products are intended for the treatment of disease even though they are unproven and lack FDA approval for this use. Since it is illegal to place an unproven therapeutic claim on a product label, claims of this type are conveyed separately through product literature distributed at chiropractic meetings, company-sponsored seminars, and by mail.

The percentage of chiropractors engaging in unscientific nutrition practices is unknown, but several reports suggest that it is substantial. In 1988, 74% of about 2400 chiropractors who responded in a survey by the leading chiropractic newspaper reported using nutritional supplements in their practices. Not long afterward, researchers from San Jose State University's Department of Nutrition and Food Science mailed a survey to 438 members of the San Francisco Bay Area Chiropractic Society. Of the 100 who responded, 60% said that they routinely provide nutrition information to their patients, 38% said they provide it on request, 60% claimed that they treat patients for nutritional deficiencies, 19% said they use hair analysis, and 9% indicated that they use "applied kinesiology" for nutritional assessment [Journal of the American Dietetic Association 89:939-943, 1989]. Neither hair analysis nor applied kinesiology are valid for nutritional assessment of patients.

In 1989, a spokesperson for Douglas Laboratories (a company that sells nutritional products only to chiropractors) stated that "roughly 65% of all chiropractors are dispensing nutritional products, and more of them are doing it every day."

Typical Chiropractic Beliefs

Chiropractic is based upon the belief that most ailments are the result of spinal problems. The "discovery" of chiropractic was announced in 1895 by Daniel David Palmer, a grocer and "magnetic healer" who practiced in Davenport, Iowa. Palmer believed that he had restored the hearing of a partially deaf janitor by "adjusting" a bump on his spine. Not long afterward he decided that the basic cause of disease is "nerve interference" caused by misaligned spinal bones which could be adjusted back into place by hand.

Today's 45,000+ chiropractors can be divided into two main types: "straights" and "mixers." Straights tend to cling strictly to Palmer's basic doctrine that most disease is caused by misaligned vertebrae ("subluxations") that can be corrected by spinal adjustment. Mixers acknowledge that germs, hormones, and other factors play a role in disease, but they tend to regard mechanical disturbances of the nervous system as the underlying cause (through lowered resistance). In addition to spinal manipulation, mixers may use nutritional methods and various types of physiotherapy (heat, cold, traction, exercise, massage, and ultrasound). About 300 chiropractors belong to the National Association for Chiropractic Medicine, a reformist group that has renounced Palmer's basic theories. Its members limit their practice to musculoskeletal problems and have denounced the unscientific methods used by other chiropractors.

Although some aspects of scientific nutrition are taught in chiropractic schools, many ideas that chiropractors absorb—in school and afterwards—are as unscientific as their basic theory of disease. Chiropractors who give nutritional advice typically recommend vitamin supplements that are unnecessary or are not appropriate for treatment of the patient's health problem. Some chiropractors have charged thousands of dollars for treatment programs involving diagnostic evaluations, vitamins, adjustments, and massage over a period of several months.

ACA Council on Nutrition

The American Chiropractic Association's Council on Nutrition, which was founded in 1974, holds symposiums and seminars and publishes a quarterly journal (*Nutritional Perspectives*) and a monthly newsletter. The journal states that the council is "dedicated to the health of mankind on the premise that proper nutrition is a major factor in promoting and maintaining good health and preventing disease." During the past year, the journal has contained editorials, letters to the editor, abstracts of scientific reports, and reprints from *FDA Consumer* and other publications. Recent issues have contained 28 to 32 pages, of which about 35% are ads by supplement manufacturers. The title page states that ads "are initially screened" by a committee of the council, but that neither the council or its personnel are responsible for the advertising and that publication of the ads does not imply approval or endorsement by the journal or the council.

Recent issues of the council's newsletter have supported the (bogus) idea that mercury-amalgam fillings are dangerous and opposed pending legislation to strengthen the FDA. One issue was accompanied by a form letter asking the FDA to lift its ban on L-tryptophan supplements.

The Council on Nutrition also appoints the American Chiropractic Board of Nutrition, which sets standards and administers a certifying examination for chiropractors. To become certified, chiropractors must take 300 hours of approved courses and pass an examination in basic and clinical nutrition. According to the council's correspondence secretary, 42 of the council's 300 members are certified. To maintain certification status, the chiropractor must submit evidence each year of active involvement in chiropractic education at an approved college or must submit detailed case histories or a paper on nutrition for publication. However, the past four issues of *Nutritional Perspectives* contain no reports of cases or research studies involving chiropractic nutrition.

In 1991, the American Chiropractic Association passed the following resolution, which was co-authored by the executive director of the ACA Council on Nutrition:

The ACA's Council holds the position that it is appropriate for a doctor of chiropractic to recommend the use of vitamins, minerals, and food supplements to the extent that this is not in conflict with state statutes and regulations. A nutritional assessment should be made of the patient prior to the use of nutritional supplements. The recommendation of nutritional supplements should include a nutritional assessment of the patient. The practitioner shall record the rationale for the supplements in the patient's charts. The doctor should attempt to determine that the products being recommended are not experimental.

A similar resolution was passed regarding weight-control programs. Commenting on these resolutions, the newsletter's editor said:

Save and memorize these resolutions! Their importance cannot be overstated. Before these resolutions were passed, there was no official "opinion" or direction by the ACA regarding this area. With these resolutions, we have, for the first time, something in writing; a part of the American Chiropractic Association that says YES WE CAN use nutrition. . . . Now we have the clout and the backing of the American Chiropractic Association behind us.

Marketing Strategies

Under federal law, "drugs" are defined as any articles (except devices) "intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease" and "articles (other than food) intended to affect the structure or function of the body." All drugs must be labeled with adequate directions for their intended uses. Drugs not generally recognized as safe and effective by experts are "new" drugs. It is a federal crime to market a "new" drug in interstate commerce without FDA approval or without adequate directions for use. To gain FDA approval substantial evidence must be presented to the FDA that the product is safe and effective for its intended use.

Chiropractic suppliers are marketing thousands of unapproved nutritional products intended for the treatment of disease. The manufacturers seldom advertise openly what the products are for. Some companies make therapeutic claims through seminars, exhibits at chiropractic conventions, and material provided by "independent" regional distributors. Some companies provide their own product literature, which may or may not provide complete directions for use. Some companies provide copies of articles from the popular press or health food magazines that mention or promote substances contained in their products. A few companies distribute elaborate manuals listing the diseases their products can supposedly treat. Other companies stress quality or price advantage and let the chiropractors figure out for themselves what the products are for. Many products are simply named after an organ (e.g., *Ora-Brain*), bodily function (*Anabolic MegaPak*, *Gluco-Stabil*), or health problem (*ArthEase*, *Candidaforte Pack*). Other products are given code names or numbers that the company explains elsewhere.

Regional distributors, who may handle the products of one company or several, may mail information or visit chiropractic offices in much the same way that drug "detailers" attempt to educate physicians. However the information delivered by legitimate drug company representatives is strictly regulated by the FDA and must be complete and based on well designed scientific tests. The information delivered to chiropractors has neither of these characteristics and is transmitted through channels that are intended to be hidden from the FDA.

Several chiropractors and naturopaths have written manuals suggesting specific products for large numbers of diseases. Those that I have collected within the past few years contain a disclaimer that nothing should be construed as a claim or representation that any of the products mentioned consti-

tutes or is intended for use as a cure, palliative or ameliorative for any of the conditions noted. One of the books, *The Unauthorized Guide to Nutritional Products & Their Uses*, by David Williams, D.C., states that its information was "compiled from specific recommendations made by various manufacturers." Although it advises readers to use the book as a guide, with the help of a physician, it also tells how to order the products from a mail-order discount house.

In December 1991 *The Chiropractic Journal* (a newspaper distributed free-of-charge to chiropractors) published an ad from Physiologics, of Boulder, Colorado, which said:

Are you ignoring a major income source? Spend 5 seconds per patient and increase your gross profits \$53,000 or more per year. According to national studies, over 50% of the population could benefit from some type of nutritional support therapy. Of those individuals who use supplements, the average purchase is 1.5 supplements per visit. That means if you see an average of 30 patients per day, you will have the opportunity to provide 15 of them with nutritional supplements. Our studies show your average profit margin per patient equals \$13.75 . . . = \$53,625 gross profit per year.

During the past two years I have collected catalogs and/or other product literature from about 50 companies that

market supplement products through chiropractors. The table below illustrates some of the claims that I believe are false, misleading, or otherwise illegal.

The Bottom Line

It is clear that the entire communication system between supplement manufacturers and their chiropractic clients is set up with the hope of "distancing" illegal claims from their product labels. Although some chiropractors may give rational nutrition advice to their patients, their journals contain little or no discussion of how such advice is given, or should be given. Although I am aware of several cases in which patients were seriously harmed by vitamin megadoses prescribed by chiropractors, I have seen no case reports in chiropractic journals or warnings that high doses can be toxic. Worst of all, however, despite the many problems described in this article, no prominent chiropractor or chiropractic organization has openly suggested that there is anything wrong with the way chiropractors "practice nutrition."

Stephen Barrett, M.D., a practicing psychiatrist and consumer advocate, edits Nutrition Forum Newsletter and is co-author/editor of 31 books, including *Health Schemes, Scams, and Frauds* (Consumer Reports Books, 1990). He has been investigating the chiropractic marketplace for more than 20 years.

DUBIOUS PROMOTIONS TO CHIROPRACTORS

Company	Products	Claims in Catalogs or Product Literature
Body Gold La Jolla, CA	Super Fat Burner Formula	Accelerates fat loss and enhances muscle definition
Esscolloid Co. Cedarburg, WI	Immune Life	Promotes thymosin, trophic hormones, natural killer cells, interferon, and T-cells
Futurebiotics Brattleboro, VT	Hypoglycil PressureLo	The perfect product for people who feel tired and unwell Brings together the minerals, vitamins, herbs, and other key factors that address a major health concern
Health Concerns Alameda, CA	Astra Essence	Promotes longevity useful in our society where many show signs of premature aging or kidney deficiency from fast-paced lifestyles
Metagenics Laguna Hilks, CA	Parasidal	Destroys parasites
Nova Nutritional Products Inglewood, CA	Stress Buster	Contains . . . vital nutrients that will help you fight the "burn-out" of stress
Rainbow Light Nutritional Systems Santa Cruz, CA	Adrenogen The Mind System	For glandular systems overtaxed by stress or stimulants Specifically formulated to help fuel the brain's production of mental energy
Standard Vitamins Company La Canada, CA	Cardio-Care	Nutrition for a healthy heart - supplies all the nutrients known to benefit the heart and circulatory system
Universal Laboratories New Brunswick, NJ	Orchic Test Infusion	Increases testosterone production to promote muscle mass and strength gains in both men and women

CHIROPRACTIC NUTRITION: AN INSIDER'S VIEW

Ira Milner, R.D., obtained the following information during two telephone interviews with Donald Huml, D.C., president of the American Chiropractic Association's Council on Nutrition:

How do you feel about chiropractors who sell supplements out of their office?

That's up to the discretion of the practitioner. I don't have an ethical problem with that. Again, anything in the hands of the wrong person can be misused. We sell some supplements out of our office. It makes it convenient for the patient. We try to compete with whatever is fair and equitable prices.

What is considered legitimate and what is considered illegitimate by the council. For example, the use of such things as . . . bee pollen and dietary supplements. What are your feelings about those?

The official stance is this: That a person needs a proper and complete nutritional workup. Upon the findings of that nutritional analysis, supplementation can be utilized that has been shown to be effective for their particular situation. There are things that have reams and reams of information published in the scientific literature. Evening primrose oil (EPO)—there are thousands of citations. . . . Bee pollen . . . may be very effective for certain things, and the scientific validation may be much less. And they talk about some other supplements that might have even less. So, it's up to the doctor's discretion, but experimental nutrition is not encouraged. If you know what I mean.

You mean use of substances that have not been shown to be effective?

Yes, but you know that's a gray area.

How do you determine effectiveness?

Again, speaking for the Council, all we can state is just try to keep everything above-board. . . . Don't go too far out on a limb, and use what is effective. Now, there are things that have shown their effectiveness that haven't been tested in clinical trials just because they're new, if you know what I'm saying.

How have they been shown to be effective if their effectiveness has not been shown in clinical trials?

Let me see what can I think of that we use in our practice. . . . We tell people to drink ginger tea for colds and flus and stuff like that because I know it's very helpful and it helps clear up your sinuses. . . . The Council wants to promote proper nutritional therapies that have some backbone . . . that have some clinical trials, but I don't know any nutritionist that doesn't use things like the ginger, that don't have a few of these items in their armamentarium that haven't had massive clinical trials.

Are you aware of any chiropractors doing anything that you or the council feel is unscientific or unproven?

There are all sorts of people out there both in the chiropractic profession, in health food stores, and in the medical profession, that use dubious diagnostic techniques. . . . I have had patients come . . . who have been put on a vitamin regimen just

from a hair analysis. And that's not enough information gathered to put someone on a program unless they are on a vitamin, like vitamin C to specifically chelate out one of the heavy metals that might show up on a hair analysis. There are also people who will put people on nutritional programs based on muscle-testing alone, which, at best, is educated guesswork. That information . . . should always be backed up with some sort of other standardized testing protocol. Unfortunately, what is taught in seminars sometimes is bastardized. You know once people [return] to their office, they can do anything they want. What is taught in seminars is not always what comes out of a practitioner's office.

Do chiropractors as a whole prescribe a lot of supplements?

Not necessarily. It depends on how your practice leans. I personally have a strong background in nutrition, and my practice is geared that way so we make recommendations. Some chiropractors never make recommendations for nutrients; they will deal strictly with the spine and nothing else. And some will recommend only one or two specific types of supplements for disk problems. . . . So it varies, it goes the whole gamut from nothing . . . to putting people on a whole program.

Where do chiropractors learn about or how to prescribe supplements?

In school and in postgraduate work. The Council on Nutrition and American Chiropractic Board of Nutrition put on a 300-hour postgraduate education seminar Except when you're in school, everything else is done on a seminar type of basis.

About fifty or so mail-order companies supply a whole range of products to chiropractors. . . . Where do they learn how to use these products?

All those companies offer support because sometimes they have unique formulations. However, all of the usage should be based on physiology. What is the supplement doing, how is it doing it, does this patient need this. . . . So you always fall back onto basic physiology and biochemistry as to how this works . . . and is it the appropriate supplement for this person.

So a chiropractor may call one of these companies and speak to someone there that can give advice about how much to use of a certain supplement or whether it's indicated in a particular situation or not?

Right, just like a medical doctor does with drugs. You rely on the information you are getting from the drug company to be correct and reliable, then using your knowledge of physiology and basic biochemistry you hope to apply that to the person. [Editor's note: Medical doctors rarely need to contact drug companies to find out what their products are used for. That information is readily available in product literature, medical journals, textbooks, and other scientific publications.]

Do these companies ever offer seminars to chiropractors to help use their products?

You know I don't believe that is legal. You cannot make a medical claim for a supplement.

BOOK REVIEWS

Title: Straight Talk About Weight Control (1991)

Authors: Lynn J. Bennion, M.D., Edwin L. Bierman, M.D., and James M. Ferguson, M.D.

Publisher: Consumers Union, Mt. Vernon, N.Y.

Price: \$15.95 softcover

Reviewed by: Lisa T. Harris, R.D.

Three prominent physicians and the editors of *Consumer Reports* have produced a comprehensive work about the current state of knowledge on weight control. The book is not a diet plan but presents essential information for those who hope to succeed in long-term weight management. Its information is accurate and highly readable. It provides detailed explanations of the definition, measurement, causes and treatment of obesity.

The authors, all experts in the field of weight control, also discuss the prevalence of obesity in this country, health problems related to the condition (social costs as well as physical and psychological), and the benefits of weight loss. A short food program, dubbed "healthy, low-calorie menus," is included (approximately 1,600 calories per day). In addition, the book is full of sobering statistics, touching anecdotes, and pertinent research findings, both historical and recent.

Straight Talk About Weight Control gives readers the facts needed to make informed choices. The section on pros and cons of various weight-control methods should be especially useful to dieters. The discussion includes everything from exercise to behavior change, from jaw wiring to gastric bypass, and from commercial weight-loss programs to conventional dietary counseling. Readers can use this information to evaluate strategies according to their particular weight-loss profile and needs. The overriding emphasis, however, is on reducing caloric intake, increasing energy output, and maintaining positive eating habits.

People looking for a new miracle diet plan may be disappointed, but those who take their weight control seriously should find the book a valuable reference. It may be especially helpful to dieters who are "successful" with many diets but invariably regain the lost weight. The book gives readers frank information to prepare them for the permanent changes needed to maintain weight loss. It is also an excellent reference for those who counsel patients with regards to weight control.

Straight Talk About Weight Control may not become a best seller. But for consumers who are ready to take control of their eating and exercise habits, it may help save time, money, and frustration.

Lisa Harris, R.D., is a nutritionist and freelance writer in San Bernardino, California. For several years, she edited and published of *Current Diet Review*.

Title: Your Guide to Good Nutrition (1991)

Authors: Fredrick J. Stare, M.D., Virginia Aronson, M.S., R.D., and Stephen Barrett, M.D.

Publisher: Prometheus Books, Buffalo, N.Y.

Price: \$13.95, softcover

Reviewed by: Manfred Kroger, Ph.D.

Among the many books offering nutrition advice, a large number are unsound, some even dangerously so, and many are far too technical for the average reader. This practical and easy-to-read 213-page paperback is just right for the average person who doesn't have a doctor's degree and is intelligent enough to stay away from all those tracts devoid of merit.

The book is essentially a question-and-answer display of more than 300 subjects arranged in 13 chapters. These include nutrition basics and a balanced diet; how to evaluate nutrition information; vitamin and mineral supplements; "health foods" and related products; "junk foods" and "fast foods"; additives; practical weight control; balanced vegetarian diets; the truth about sugar, "fluid facts"; tips for teenagers; and diet in relation to heart disease and cancer. There is also a very useful 11-page glossary of terms and concepts. One figure and 13 tables provide condensed overviews; and, as is customary with books of this genre, the Recommended Dietary Allowances (of 1989) are found in an appendix.

The authors of this guide together have authored more than two dozen books on various subjects all related to this one. Dr. Stare, a respected Harvard University nutrition professor, is known worldwide for his research and writing. Ms. Aronson, a registered dietitian, is co-author of *The White House Family Cookbook*. Dr. Barrett is a nationally renowned author on health subjects as well as a consumer advocate who, in 1984, received an FDA award for his public service in fighting nutrition quackery.

The book is indeed easy to understand and can be used, via its 12-page index, as a reference as much as an enlightening, educational textbook. As a matter of fact, it would be an excellent choice as a school or university classroom text. All topics covered reflect the mainstream thinking of current health professionals. The data presented are from conventionally accepted and reliable sources. And the recommendations, wherever made, are in harmony with the major nutrition guidelines and scientific health advice presented to the public in recent years.

Dr. Kroger is Professor of Food Science at The Pennsylvania State University. *Nutrition Forum* readers can obtain copies of the book for \$15.00 postpaid from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

“ERGOGENIC AIDS” CHALLENGED

About 100 companies are marketing “supplements” of vitamins, minerals, amino acids, and various other ingredients with false claims that they can help build muscles and improve athletic performance. In May, the New York City Department of Consumer Affairs issued “Notices of Violation” to six such companies and challenged the FDA to clean up the marketplace nationwide.

Investigators from the Department found that manufacturers they contacted for information about their products were unable to provide a single published report from a scientific journal to back the claims that their products did any of these things. Calling the bodybuilding supplement industry “an economic hoax with unhealthy consequences,” the department warned consumers to beware of terms like “fat burner,” “fat fighter,” “fat metabolizer,” “energy enhancer,” “performance booster,” “strength booster,” “anabolic optimizer,” and “genetic

optimizer.” The Department calculated that a supplement program recommended in the leading bodybuilding magazine (*Muscle & Fitness*) would cost more than \$11 per day.

The companies cited for “deceiving or misleading consumers by falsely representing and/or exaggerating the benefits, qualities or effects” of their products were: Metabolic Nutrition, Inc., Miami, Fla. (*Opti-Genetics*); Cybernetics, Lakewood N.J. (*Cyberblast, Cybertrim, Cybergain, Vortex*); Universal Nutritional Systems, New Brunswick, N.J. (*Hot Sauce*); Champion Nutrition, Concord, Calif. (*Metabolol*); ROM Research, Baltimore (*Ultra Pro*); and Mega-Pro International, St. George, Utah (*Anabolic Muscle Stuff, Meg-amino 1500, Smilax Spray*).

A 32-page report, *Magic Muscle Pills!!: Health and Fitness Quackery in Nutritional Supplements*, is available for \$5 from the NYC Dept. of Consumer Affairs, 42 Broadway, New York, NY 10004.

HEALTH FOOD INDUSTRY STEPS UP ANTI-FDA CAMPAIGN

The campaign to weaken the FDA envisioned by the Nutritional Health Alliance [NF 9:1-5, 1992] has gone into full swing. At a trade show in April, alliance leaders pledged to generate one million letters to Congress within six months and raised \$500,000 to launch the campaign. “Health Freedom Kits” containing form letters, sample press releases, and other campaign materials have been distributed to many health food stores throughout the United States. Most trade and consumer “health-food” publications have published ads urging their readers to “fight for your family’s right to choose safe and beneficial nutritional supplements.” The ads claim that if current FDA and Congressional actions are passed and enforced, 50% of all nutritional supplements will no longer be available within the next 12 to 18 months and the FDA will become “empowered with police powers and the ability to levy heavy civil penalties that will be used indiscriminately against dietary supplements and force most health food stores out of business.”

The health food industry fears that the FDA intends to promulgate labeling regulations that will sharply curtail its freedom to market products. The industry also fears that Congress will enact new laws giving the FDA greater efficiency and power to enforce its regulations. NHA’s campaign is intended to block both of these possibilities and to weaken the agency’s current enforcement power.

In line with these goals, Senator Orrin Hatch [R-UT] has introduced the Health Freedom Act of 1992. The bill would amend the Food, Drug, and Cosmetic Act to define the term dietary supplement as “an article that includes, and is intended to supplement the diet with: (A) a vitamin; (B) a mineral, (C) an herb; or (D) another similar nutritional substance, including a concentrate or extract of . . . (A), (B), or (C).” The bill would prevent the FDA from regulating the dosage of any substance

for which no therapeutic claims are made, but would permit therapeutic claims based on “scientific evidence, whether published or unpublished, that provides a reasonable basis.” The FDA would be prevented from regulating claims before they are made, and manufacturers would be permitted to seek immediate court review of FDA warning letters. According to an article in *Whole Foods*, an industry group called the Utah Natural Products Alliance (UNPA)—which includes several manufacturers of herbal products—worked with Senator Hatch to develop S. 2835.

Under current laws, it is illegal for manufacturers to make therapeutic claims that are not recognized by the scientific community, and the FDA can quickly squelch claims that violate this standard. Senator Hatch’s proposal would enable manufacturers to call anything they please a “supplement,” make false claims based on a poorly designed study, and tie up the FDA in court while continuing their dubious promotions. For practical purposes, consumer protection against health food industry deception would end.

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All correspondence should be sent to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105. Telephone 215-437-1795.

BRIEFS

Offbeat literature available. The Lehigh Valley Committee Against Health Fraud wishes to dispose of more than 100 duplicate copies of health-food magazines, chiropractic journals, and other sources of nutrition misinformation. *Nutrition Forum* readers can obtain five assorted items for \$7 or ten assorted items for \$13 from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105. (Satisfaction not guaranteed.)

Food safety booklet. The U.S. Department of Agriculture has published *How to Keep Your Food Safe*, a 20-page booklet designed to teach people with lower-level reading skills how to safely care for food. The booklet will be distributed through the WIC Program, the agency's supplementary food distribution program for low-income women and children. A free copy can be obtained by writing to USDA/FSIS, Public Awareness Office, Room 1165 South Bldg., Washington, DC 20250.

Food slogans attacked. The National Consumers League (NCL), a Washington-based consumer protection organization, has urged the FDA and USDA to ban the term "healthy" from food labels. A recent NCL-sponsored survey of 1,000 consumers found that 59% said that they would be inclined to choose one product over another simply because the word "healthy" appears on the label. Two out of three also said that when they see the word "healthy" on a label, they expect the product to be low in sodium, fat, saturated fat, and cholesterol. At a recent press conference, NCI president Linda Golodner called use of the word a "shameless manipulation" and "a marketing tool, not a guide for the health-conscious consumer." NCI would also like "wholesome" and "nutritious" prohibited on food labels.

Misleading infomercial stopped. The Postal Service has obtained a cease-and-desist order barring the promoters of *Oncor* from falsely representing that it, or any other product, is safe and effective for treating male impotence or lack of sexual desire. The product, said to be a homeopathic medication containing *Avena sativa*, had been promoted with a 28-minute television program set up like a regularly scheduled talk show with commercial breaks. The program failed to disclose that participants introduced as "impartial health professionals independent from the distributor of the product" actually were closely tied to *Oncor's* promoters. In addition, one of the supposedly satisfied consumers who appeared as a "guest" on the program was closely related to a promoter.

Salt and high blood pressure. A comprehensive review has concluded that the relationship between sodium chloride and high blood pressure is too complex and has not been studied enough to justify population-wide recommendations. The reviewers believe that although lower NaCl intake may improve blood pressure in some persons, there is no evidence that this will decrease the occurrence of cardiovascular disease in the general population. The reviewers also noted that lowering NaCl intake may have long-term metabolic risks that have not been fully identified [*American Journal of Hypertension* 5(Suppl):1-44, 1992].

Iron poisoning in infants. An analysis of 3.8 million cases of poisoning among children has concluded that iron was the single most common cause of accidental death by ingestion [*Pediatrics* 89:999-1006, 1992]. Iron supplements, either as iron tablets or as an ingredient in prenatal vitamins, were responsible for 30% of accidental poisoning deaths reported between 1983 and 1990. In 1991, eleven children died following iron supplement ingestion.

Conrad LeBeau enjoined. On March 10, 1992, a U.S. District Judge ordered Vital Health Products, Ltd., and its president, Conrad Le Beau, to stop selling hydrogen peroxide products, licorice root tea, mineral water, or any other product claimed to prevent, cure, mitigate or treat human disease, unless the product has been granted FDA approval. Calling LeBeau a "self-styled authority" on the products he promoted, the judge concluded that a permanent injunction was necessary because LeBeau had continued to market his products despite previous regulatory actions by the FDA. In 1988 the agency had warned LeBeau to stop marketing *Aloe Vera Oxygel* with claims that it was effective against arthritis, cancer and AIDS. When he persisted, the FDA initiated a seizure of a number of vials and negotiated an agreement under which they were confiscated. Although LeBeau subsequently shipped his products and literature from separate locations, the judge ruled that the literature was still part of the products' labeling. LeBeau acted as his own attorney during most of the proceedings. He claimed that the FDA was violating his 9th Amendment rights, but the judge dismissed this claim. During 1990 LeBeau marketed a "9th Amendment Legal Defense Kit," which he said could help sellers and "alternative" practitioners "legally use testimonials and make truthful claims about your products and services without government interference, approval or censorship."

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"Boiler room" vitamin scam stopped. Three people who operated a telemarketing scheme in Tampa, Florida, during a six-month period in 1988 have been sentenced to prison for mail fraud and related activities. Their company, American Health Systems, used post cards to solicit telephone calls and then used a high-pressure sales pitch and deceptive tactics to attempt to sell vitamins to the respondents. Over 3,000 individuals and banks were reported to have lost \$1 million in this scheme. Sandor Weiss received a 135-month sentence after a 2-week trial, while two other defendants, Dawn Dodson and Dave H. Zion, received 10-month sentences after pleading guilty.

What vitamins do pharmacists recommend? Each year, *American Druggist* magazine asks pharmacists which nonprescription (OTC) products they recommend most often. This year, responses were received from 283 chain pharmacists (a 20.2% reply rate) and 297 independent pharmacists (an 18% reply rate). Both groups reported that about half the customers who buy vitamin products ask for advice. For multivitamins, chain pharmacists said they recommend *Centrum* (55%), generic/private label (31.3%), or *Theragran M* (8.8%), while independents recommended generic/private label (35.8%), *Centrum* (29.2%), *Theragran M* (14.6%), or *Super Plenamins* (5.8%). Among children's vitamins, *Poly-Vi-Sol* led with 35.2% of chain pharmacists and 47% of independents recommending them.

New newsletter. *The Diet Business Bulletin*, a quarterly newsletter will track marketing and business aspects of the diet industry. Subscription information can be obtained from Marketdata Enterprises, 181 S. Franklin Ave., Suite 608, Valley Stream, NY 11581.

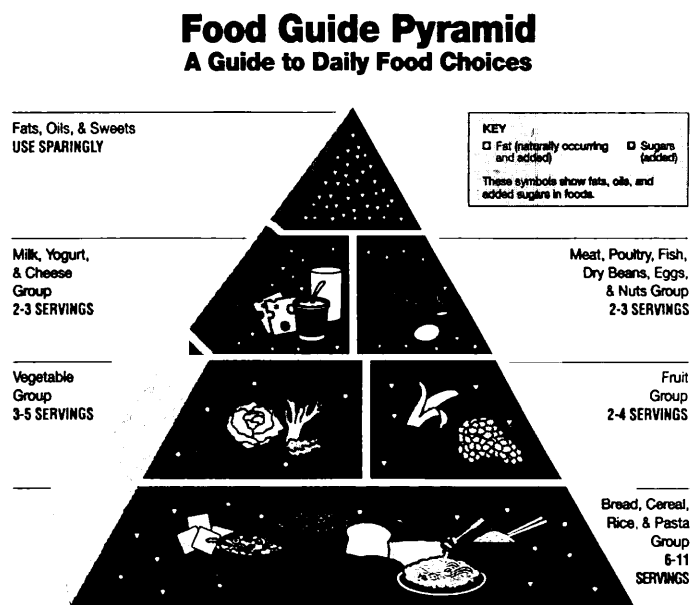
Dental delicensure upheld. A state appellate court has upheld the New York State Board of Regents' decision to revoke the dental license of Joel Berger, D.D.S., on nine counts of professional misconduct. The board's action followed a complaint that Dr. Berger had removed mercury-amalgam fillings from a woman's teeth after telling her the mercury was poisoning her. An appeal to a higher court is expected.

Notable quote. "Historically, the field of nutrition has focused on manifestations of specific deficiency diseases. . . . More recently, there has been increasing recognition of the potential role of nutrition in preventing many important illnesses. Such illnesses include heart disease and stroke, several forms of cancer, diabetes, osteoporosis, and renal disease. It may be more realistic, however, to think of nutrition as a useful adjunct in delaying or mitigating these disorders rather than preventing them entirely. Furthermore, proper nutrition is of little value if the individual continues to smoke, drink excessively, or engage in an immoderate or unsafe lifestyle." —*Richard S. Rivlin, M.D.* [JAMA 268:382-383, 1992]

Unconventional research? A recently passed law directs the National Institutes of Health (NIH) to establish an office to "fully investigate and validate" unconventional medical practices. The law, which provides funding of \$2 million, also directs NIH to establish an advisory panel to recommend research to test the "most promising" of such practices. The 16-member panel contains a few prominent research scientists but is composed mainly of unscientific practitioners and promoters. The panel met on June 17 and 18 to discuss research methodology and hear testimony from "alternative" practitioners.

USDA PYRAMID RELEASED

The U.S. Department of Agriculture has issued a pyramid to replace the familiar pie chart used since 1946 to promote the concept of a balanced diet. The pyramid, which cost almost \$1 million to develop, is intended to implement the U.S. Dietary Guidelines. Whereas the pie chart gave equal space to all food groups, the pyramid gives more space to the groups (grains, vegetables and fruits) for which the largest numbers of portions are recommended. Except for the milk group, the number of recommended servings depends on the individual's estimated caloric intake, with the lower numbers for people consuming 1,600 calories daily and the higher ones for those consuming 2,800 calories. *USDA's Food Guide Pyramid*, a 32-page booklet, provides detailed dietary instructions; information on the fat, salt, and "added sugar" content of common foods; and tables for rating one's diet. Copies of the booklet [HG 249] are \$1 each from the Consumer Information Center, Pueblo, CO 81009. *Editor's note:* The emphasis on "added sugar" appears unwarranted. Most people who meet the guidelines for number of servings and overall fat content do not have to worry about how much sugar they consume.



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CAN MEGADOSES OF VITAMIN C HELP AGAINST COLDS?

Charles W. Marshall, Ph.D..

Few things have stirred the imagination and hopes of the public in matters of nutrition or vexed nutrition scientists as much as Linus Pauling's 1970 book, *Vitamin C and the Common Cold*. The book's main claim is that taking 1 gram (1,000 mg) of vitamin C daily will reduce the incidence of colds by 45% for most people, but that some persons might need much larger amounts. It recommends that if symptoms of a cold do start, you should take 500 or 1,000 mg every hour for several hours—or 4 to 10 grams daily if symptoms don't disappear with smaller amounts. Without question, publication of this book, combined with Pauling's reputation as a Nobel Prize-winning scientist, has made vitamin C a best seller. When his theory was announced, millions of Americans rushed to try it for themselves. The second edition of the book, issued in 1976 as *Vitamin C, the Common Cold and the Flu*, suggests even higher dosages.

Pauling has also suggested that most people need a daily vitamin C intake of 2,300 mg or more for "optimum" health and to meet stresses, including infections. In *How to Live Longer and Feel Better* (1986) he states that individual biochemical variability is so great that optimum intake may be as high as 250 mg to 20 grams or more per day.

Many concerned persons have wondered whether Pauling's advice is prudent, and millions have experimented upon themselves to see if they can tell. Pauling himself reportedly takes 12,000 mg daily and raises it to 40,000 mg when symptoms of a cold appear! Pauling presumably has adapted to such dosage, but most people would suffer chronic diarrhea and the risk of kidney stones.

How Scientific Facts Are Determined

The "scientific community" consists of thousands of scientists throughout the world, most of whom operate under a strict set of rules known as the scientific method. Simply stated, this is a system of logical steps designed to separate cause-and-effect from coincidence. This method is used to answer such questions as: "If you do a particular thing, will something else take place?" and "If two things follow one

another, are they related?"

A scientific "fact" is determined by analyzing the results of all the experiments that bear on that particular fact. In the case of vitamin C, there are two key questions. First, does vitamin C prevent colds? And second, does it reduce their severity? Before discussing experiments on these questions, however, we should note that not all experiments are created equal. *To be valid, an experiment must be well designed, and its data must be honestly collected and interpreted with good techniques of statistical analysis.* One hallmark of a good experiment is that others can repeat it and get the same results.

Experimental studies of the possible value of vitamin C in the prevention of infections have been conducted by medical investigators ever since preparations of the pure crystalline vitamin became commercially available during the 1930s. By 1982, about thirty of these were reported and the majority of medical scientists had concluded that supplementation with vitamin C does not prevent colds and, at best, may slightly reduce the symptoms of a cold. Two subsequent reports have not altered these conclusions.

Linus Pauling remains steadfast in his belief that the scientific community is wrong—basing his ideas on the same experiments but interpreting their results differently. Moreover, he suggests the following way to determine one's correct vitamin C dosage: "If you are taking 1 gram per day, and find that you have developed two or three colds during the winter season, it would be wise to try taking a larger daily quantity." Presumably, if you have fewer colds than expected, you should believe that vitamin C has been responsible for the decrease.

Unfortunately, in the real world, scientific facts cannot be determined that simply. Consider the following questions:

1. Is it possible that you actually had a different number of colds than you recall? This would be faulty data collection.

2. Is it possible that you would have had only one cold this year anyway? If so, what happened to you would be a mere coincidence.

3. Is it possible that you had a very mild cold but wish so strongly for a favorable result that you didn't count it? If so, this would be an effect of bias.

Scientific experiments must be designed to overcome these possible sources of error. The problem of faulty memory can be overcome by keeping close track of the individuals involved in an experiment. The problem of coincidence can be overcome by using large numbers of people and following them for significant lengths of time. The problem of bias, however, is far more complicated. Use of the double-blind method is critical, but as you will see, experiments with vitamin C have encountered some very curious results when subjects were able to figure out whether they were getting the vitamin or the placebo during experiments intended to be double-blind.

So far, at least 30 experiments have tested the ability of vitamin C to protect against colds in large groups of people. Five review articles by biomedical scientists have found Pauling's claims unsupported, except for slight reduction in severity, in most of those trials that were scientifically properly designed and executed. Now let's examine the evidence.

Inoculation Trials

One way to test whether high-dosage vitamin C prevents colds is to inoculate the throats of volunteers with cold viruses. Two studies of this type found that everyone got colds whether they took vitamin C or not. Dr. Walker and co-workers in 1967 and Drs. Schwartz, Hornick and associates in 1972-73 gave half of their volunteers a placebo and the rest 3,000 mg of vitamin C daily for several days before inserting live cold viruses directly into their noses; and then continued 3,000 mg of vitamin C (or placebo) for seven more days. All of the volunteers got colds, which were of equal severity.

Pretreatment with Vitamin C Trials

Another way to test vitamin C is to see what happens to matched groups over a period of time. Two teams of investigators have done this more than once, one team led by Dr. John L. Coulehan and the other by Dr. Terence Anderson.

Dr. Coulehan's first study was done on 641 Navajo Indian children, half of whom received a placebo while the rest received 1,000 mg of vitamin C daily. A complicated system of judging the severity of head, throat and chest symptoms was used. The Coulehan team reported in 1974 that the vitamin C group had less severe colds, but other scientists who reviewed the study criticized the method of judging the severity of symptoms.

So in 1976 the Coulehan team repeated their study with 868 Navajo children but used a better system of scoring severity. The children receiving vitamin C averaged 0.38 colds per person while the placebo group averaged 0.37. The average duration of the colds was 5.5 days in the vitamin group and 5.8 in the placebo group. Thus, in this test, vitamin C neither prevented colds nor shortened their duration. In 1979, Dr. Coulehan published his analysis of vitamin C versus the common cold and concluded that extra vitamin C is not worth taking.

The Anderson Trials

In 1972, Dr. Terence Anderson and colleagues at the University of Toronto published the results of a 3-month double-blind study of 818 volunteers aged 10 to 65. Half received 1,000 mg of vitamin C daily before colds and 4,000 mg per day during the first 3 days of a cold, while the other half received "equivalent" placebos. This study was designed to test Pauling's claims that ingestion of 1,000 mg of vitamin C daily would reduce the frequency of colds by 45% and the total days of illness by 60%. These claims were certainly not supported by the study's outcome. In the vitamin group, 74% had one or more colds during the study period, while 82% of the placebo group had one or more colds. The difference, which amounted to "one-tenth of a cold per person," was judged by Dr. Anderson to be "of no practical importance." The severity, as measured by days confined indoors, averaged 1.36 days for the vitamin group and 1.87 days for the placebo group—a 30% difference that Anderson decided to explore further. At the end of this trial, before the double-blind code was opened, all volunteers were asked whether they had experienced any unusual feelings of well-being [euphoria] during the trial. Nineteen percent of both groups said yes—an interesting example of the placebo effect.

In 1974, the Anderson team reported on a larger trial to see what results would be obtained with different amounts of vitamin C. Some 3,500 volunteers were divided into eight groups, six of which received various daily dosages of vitamin C while the others received placebos for three months. No difference in the incidence of colds was found among the groups taking no vitamin C, 250 mg, 1,000 mg or 2,000 mg daily. A possible slight reduction in severity of symptoms was found in the vitamin C groups, but volunteers taking dosages of 4,000 or 8,000 per day when a cold began did no better than those taking only 250 mg per day.

The third Anderson trial, reported in 1975, covered 16 weeks and used 488 volunteers (ages 14 to 67), with one-third receiving a pill of vitamin C as its sodium and calcium salts, and one-third given vitamin C in slow-release capsules, and one-third getting a placebo. The vitamin C dosage was 500 mg once a week (equivalent to about 70 mg daily) before colds, but 1,500 mg the first day of a cold followed by 1,000 mg on the second and third days. No reduction in the incidence of colds was observed,

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but those taking vitamin C averaged less time at home (1.62 vs. 1.12 days indoors). Do you think that a half-day's less confinement is of practical significance?

Taken together, the Anderson studies suggest that extra vitamin C may slightly reduce the severity of colds, but that it is not necessary to take the high dosages suggested by Pauling to achieve this result. Nor is there anything to be gained by taking vitamin supplements year-round in the hope of preventing colds.

Other Studies

In 1975, Carson and co-workers told of treating company employees with 1,000 mg of vitamin C or a placebo daily during colds. The number of colds per person, the duration of colds and their severity were the same in both vitamin and placebo groups.

In 1975, Karlowski and associates at the National Institutes of Health reported treating volunteers as follows: 25% received placebos; 25% took 3,000 mg of vitamin C daily before colds but placebos during colds; 25% were given placebos daily before colds and 3,000 mg of vitamin C daily during colds; and 25% got 3,000 mg daily before colds and 6,000 mg daily during colds.

The experiment was supposed to be double-blind, but the doctors had failed to make the placebo taste the same as the vitamin C pills as is done in most trials. As a result, half of the volunteers correctly guessed which pill they were getting and therefore became unblinded. When the results were tabulated with all volunteers lumped together, the average number of colds per person was 1.27 colds for the vitamin group and 1.41 for the placebo group. But among those who remained blinded, no differences in the incidence or severity were found. This fascinating result shows how many people who think they are taking a positive step (such as taking a vitamin) may report a favorable result even when none really exists!

Two Trials with Identical Twins

In 1977, Miller and colleagues treated 44 pairs of identical twins for 5 months as follows. One twin in each pair received a vitamin C capsule while the other got a placebo. The daily vitamin C dosages before and during colds ranged from 500 for younger children to 1,500 mg for older ones. The investigators noted "no significant overall benefit on cold symptoms" as reported by the children's mothers, but the responses varied among the subgroups when the children were divided according to sex and age. After the data were analyzed, four

mothers admitted tasting the capsules in an attempt to figure out which twin was getting the vitamin C! Thus it is possible that the ratings of these mothers and possibly others were influenced by guessing which twin was getting the vitamin C.

A double-blind Australian trial with 95 pairs of identical twins was reported in 1981. One of each pair took 1,000 mg of vitamin C for 100 days while the other received a placebo. The vitamin C group had slightly more colds but a shorter duration of colds (5 days instead of 6).

In 1977, Tyrell and co-workers reported treating 743 men and 758 women for 5 months as follows. Half received placebo pills daily. The others took vitamin C but only during colds at dosages of 4,000 mg on the first and second days of a cold and 200 mg on the third day. There was no benefit from taking vitamin C. The incidence and duration of colds were the same for both men and women in the vitamin and placebo groups. Men in both groups missed an average of half a day's work while women missed about a day.

An 8-week trial with 764 U.S. Marine recruits carried out by Pitt and Costrini was reported in 1979. Half of the recruits received 2,000 mg of vitamin C daily, while the others took placebo pills on the same schedule. No benefit from vitamin C was found. Ninety percent of both groups got colds, and no difference in severity or duration of colds was found.

In a 1984 study Dr. M. H. Briggs gave half of 528 volunteers 1,000 mg vitamin C daily and the other half a daily placebo for three months. In the vitamin C group 47% got colds, and 46% of the placebo group. Severity of symptoms lasted an average of 3.1 days for the vitamin C group and 3.3 days for those getting placebos. Briggs concluded: No prevention and no benefit.

In 1990 Dr. Elliot Dick and coworkers summarized the methods and results of their three double-blind controlled trials to test methods of transmission of viruses, by contaminated fingers or inhaling viruses in the air, and to test the protective effect of vitamin C. They used 24 volunteers (8 donors and 16 recipients). The recipients were non-smoking men who tested negative for antibodies to the RV16 type cold virus. Half of these were pretreated for 3.5 weeks with 2,000 mg of vitamin C daily (4 x 500 mg), and the other eight were given four placebos daily. The eight donors were infected with RV16 cold virus by direct inoculation into the nose and then were housed with the recipients 24 hours a day for a 7-day interaction period. All donors developed colds first and then all 16 of the recipients. The vitamin C or placebo pills were continued during the week of interaction and for the following two weeks. During the 7-day interaction period the men were supervised and slept, ate and

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played cards in the same room. All got colds, but the authors claim that the vitamin C group suffered significantly less "symptoms and signs" such as coughs and mucus production.

Do Added Bioflavonoids Help?

In 1979, Dr. I.M. Baird and co-workers reported a 10-week experiment with 350 volunteers (ages 17 to 25) who were divided into three groups. One-third of them, as the placebo group, received a daily "supplement" of a synthetic orange drink containing no vitamin C. A second group got a synthetic orange drink containing 80 mg of synthetic vitamin C. The third group was given enough pure orange juice daily to provide 80 mg of natural vitamin C plus bioflavonoids. The incidence of colds was the same for all three groups. Both vitamin C groups had slightly less severe colds than the placebo group. Thus the synthetic vitamin C was as effective as the natural vitamin C and the presence of bioflavonoids had no apparent effect.

Antihistamine Effect of Vitamin C

Histamine in varying amounts is almost always released in the tissues of the respiratory tract by an allergic-like response to the stress of common cold infections. Perhaps the first clue that animals and humans might use vitamin C to combat stress that involves histamine release came in 1940 from the research team led by the co-discoverer of vitamin C, Dr. Charles Glen King of Columbia University.

Dr. King's group showed that stressing rats with certain drugs stimulated their bodies to synthesize extra vitamin C. Later, evidence was presented to support the belief that animals, such as the rat, who can make their own supply of vitamin C, react to histamine by producing extra vitamin C.

In 1974, two other research teams found that rats given vitamin C along with histamine-releasing drugs had a reduction in stress symptoms and reduced histamine in the urine. They concluded that vitamin C can act like an anti-histamine drug. However many physicians believe that reducing infection-caused inflammation (nature's defense reaction) slows recovery.

Two Recent Reviews

Two comprehensive reviews covering just about all of the published reports about testing vitamin C against colds in humans are those of Dr. A. Stewart Truswell of the University of Sydney, Australia, and Dr. Harri Hemila, Institute of Biotechnology, University of Helsinki. In 1986 Dr. Truswell concisely summarized the results of 27 trials conducted since 1970. Of these, five were treatment trials with vitamin C or a placebo given only at the onset of a cold and for only several days—all of which found no benefit. The other 22 were double-blind controlled trials giving daily vitamin C or placebo before and during colds. Of these twelve trials showed no prevention and

no reduction in duration or severity, five trials showed no prevention and only slight, statistically non-significant lessening of severity, and the other five trials reported no prevention and a small but significant reduction of duration of the colds. Dr. Truswell concluded: "It is now fairly clear that for preventing colds, vitamin C has no worthwhile effect," but there is "a little more evidence for a small therapeutic effect." However, as Dr. T.W. Anderson's second trial in 1974 revealed, 250 mg of vitamin per day reduced severity as much as did 1,000 mg or 4,000 mg.

In his 1992 review entitled, "Vitamin C and the Common Cold," Dr. Harri Hemila concluded: "Vitamin C has consistently decreased the duration of cold episodes and severity of symptoms." Yet Dr. Truswell found no reduction in severity in 17 of 27 trial reports he analyzed.

And finally, let us note that Dr. Richard Cutler at the National Institute on Aging and Dr. R. S. Sohal claim there is evidence that an excess supply of antioxidants like vitamins C and E from outside the body (exogenous) suppresses the body's own unique endogenous (from within) antioxidants such as catalase and superoxide dismutase.

Overview

Does it make sense to supplement with vitamin C? If so, should it be done daily or only at the first sign of a cold or other infection? And what dosage should be used?

The many studies done in the last thirty years clearly prove that daily vitamin C supplements, whether 100 mg or 5,000 mg, do not prevent colds and provide, but only for some people, only a slight reduction in duration and severity of colds. Dr. Thomas Chalmers, a prominent medical educator and researcher, concluded in 1975: "I, who have colds as often and as severe as those of any man, do not consider the very minor potential benefit that might result from taking vitamin C three times a day for life worth either the effort or the risk, no matter how slight the latter might be."

If you choose to supplement when a cold strikes, there is no reason to take more than 250 mg per day, as shown in the 1974 Anderson study. This amount is easily obtained from the age-old "remedy," fruit juices. Supplementation with larger amounts of vitamin C has not been shown to be more effective, and it may cause diarrhea or have other adverse effects.

What about other infections? It is known that the body's pool of vitamin C in the blood plasma and white cells declines rapidly the first day or two in the presence of stresses such as severe infections, burns or surgery. Some doctors believe that under these circumstances, a supplement of 250 mg, but never more than 500 mg, per day for a few days may aid in recovery.

Dr. Marshall, a retired biochemist, is author of *Vitamins and Minerals: Help or Harm?*, which won the American Medical Writers Association award for the best book of 1983 for the general public. The book can be obtained for \$14 postpaid from LVACHF, Inc., P.O. Box 1747, Allentown, PA 18105.

THE FDA VERSUS JONATHAN WRIGHT

On May 6, 1992, FDA and local enforcement officials raided the Tahoma Clinic in Kent, Washington, a few miles southeast of Seattle. The clinic's proprietor, Jonathan V. Wright M.D., claims he is being picked on unfairly. Government documents, however, suggest otherwise.

Dr. Wright, a graduate of Harvard University and the University of Michigan Medical School, began practicing in Kent in 1973. In *Dr. Wright's Book of Nutritional Therapy* [Rodale Press, 1979], he labels his approach "nutritional biochemistry" and describes how he treats a wide range of health problems with vitamins, minerals, other "natural" substances, and/or dietary measures. He and Alan Gaby, M.D., of Baltimore, give seminars on "Nutrition as Therapy," which present their theories in detail. In 1985, Dr. Wright co-founded and became president of the American Quack Association (a support network for "holistic" practitioners), which no longer appears to be active.

Dr. Wright's dispute with the FDA surfaced in July 1991 when law enforcement officers seized 103 bottles of L-tryptophan from the For Your Health Pharmacy, located near the Tahoma clinic. The FDA had banned the marketing of L-tryptophan following an outbreak of eosinophilia-myalgia syndrome, the tally for which is now 1511 serious cases, with 38 deaths [JAMA 268:1826, 1992]. In August 1991, Wright filed suit, asserting that the outbreak was due to a contaminant and that his tryptophan was safe and therefore legal to dispense. The suit also asked the court to return the product and bar the FDA from "unreasonably interfering" with his ability to exercise clinical judgment in treating patients.

On May 4, 1992, a U.S. Magistrate issued warrants authorizing criminal searches at the Tahoma Clinic and the adjacent pharmacy. The warrants were based on affidavits from an FDA investigator who concluded that the clinic had been "receiving, using, and dispensing several unapproved and misbranded foreign-manufactured injectable drug products" and that the pharmacy had been dispensing them. The affidavits also state:

- In August 1991, FDA investigators observed mold in some glass vials at the pharmacy and were informed that the products had been made at a laboratory adjacent to Dr. Wright's clinic. Further investigation indicated that Dr. Wright and the pharmacy proprietor were co-owners of the laboratory and clinic and that a clandestine manufacturing facility was being constructed in a vacant business next to the pharmacy. When FDA investigators went to the laboratory, Dr. Wright would not permit them to conduct a full inspection.

- During the next few months, illegally marketed products were identified by inspecting trash from the clinic and pharmacy.

- In December 1991, an FDA inspector posed as a patient and was diagnosed with an Interro device. The woman who operated the device probed one of the inspector's fingers while selecting items on the screen that were said to repre-

sent substances to which he might be allergic. The woman explained that the height of a vertical bar that appeared on the Interro's screen when she probed his finger would indicate whether or not he was sensitive to the item being tested. After the test was completed, a printer produced a list of foods, chemicals, and other substances, with numerical values corresponding to readings on the screen. Then he was given homeopathic medicines, instructions for using them, and an article saying that they would dramatically relieve his allergic symptoms. [The Interro is a computerized galvanometer that measures changes in the skin's electrical resistance and depicts them on its monitor. The harder the probe is pressed against the patient's finger, the less the skin resistance and the higher the reading on the screen. The FDA Center for Devices and Radiologic Health has said the Interro is "adulterated and misbranded" and can have no legal medical use.]

- In February 1992, the Tahoma Clinic posted a notice claiming that state-licensed physicians are "exempt from the restrictions and regulations of the federal Food and Drug Administration as a matter of federal law." The notice also stated that "no employee, agent or inspector of the FDA shall be permitted on these premises."

On May 6th, FDA agents accompanied local police officers, who broke down the front door of the Tahoma clinic. Dr. Wright and his supporters claim that the search party entered with guns drawn and terrorized the clinic staff. Federal officials state that the police broke down the door because the clinic staff had refused to open it when they knocked, a gun was drawn because the officers suspected that those inside might be hostile, but the gun was never pointed at anyone and was reholstered as soon as the area was deemed safe. The authorities seized products, patient files, computer records, and Interro devices from the clinic and additional materials from the pharmacy. Two weeks later, the state pharmacy board summarily suspended the pharmacy's license, an action taken only when the board feels that public health may be endangered.

The health food industry is attempting to arouse public sympathy and fire up its own troops by claiming that the authorities used excessive force—that Dr. Wright "had committed no crime but was only providing his patients with nutritional supplements and non-toxic, natural therapeutics." Dr. Wright's supporters have generated extensive press coverage of their version of the controversy and have started a legal defense fund. The Nutritional Health Alliance, a group campaigning to weaken FDA jurisdiction over vitamins [NF 9:9-14, 1992], has given \$50,000 to the fund.

In August 1992, Dr. Wright consented to the destruction of the L-tryptophan that had been seized and agreed to pay at least \$850 to cover court costs and fees associated with the action. But he filed another suit seeking to bar the FDA from regulating what he does. For Your Health is now operating as a health food store.

BRIEFS

"Fountain of youth" ring indicted. On March 16, federal authorities announced criminal charges against David Halpern, of Pebble Beach, California, and his mother, sister, and brother-in-law with illegally importing more than 15 tons of products promoted for the treatment of more than 100 diseases and conditions. The products, whose market value exceeded \$5 million, included procaine derivatives such as *Gerovital H3*, "sexual tonics" containing yohimbine and methyltestosterone, and injectable animal tissues used for "cell therapy." The products had been imported for sale to wholesalers, health food stores, gymnasiums, chiropractors, and individual consumers.

Fluoridation update. The U.S. Centers for Disease Control estimates that more than 135 million Americans have access to public water supplies that are fluoridated either naturally (9.3 million) or artificially (125.9 million).

Bodybuilding supplement survey. A survey of 12 popular health and bodybuilding magazines (one issue each) has found ads for 89 brands and 311 products with a total of 235 unique ingredients [JAMA 268:1008-1011, 1992]. The most frequent ingredients were amino acids and herbs. Among the 221 products for which an effect was claimed, 59 were said to produce muscle growth, 27 were said to increase testosterone levels, 17 were said to enhance energy, 15 were said to reduce fat, and 12 were said to reduce fat. The researchers advise doctors to routinely ask patients whether they are taking supplements and to report possible adverse or side effects to public health authorities. Reprints of the report can be obtained from Rosanne M. Philen, M.D., Division of Environmental Hazards and Health Effects (F28), National Center for Environmental Health and Injury Control, Centers for Disease Control, 1600 Clinton Road, N.E., Atlanta, GA 30333.

Military weight standards. The Institute of Medicine (IOM), an affiliate of the National Academy of Sciences, has issued a report suggesting that the U.S. Army change its current weight and physical performance standards for recruitment and retention. Current standards base the permitted amount of weight on an individual's height without taking muscularity into account. Thus, some extremely muscular individuals might not meet the standards even though they are fit and healthy. The report noted that the standards are based on norms for white males and may discriminate against women and certain racial and ethnic groups. The report also suggested that performance tests be revised to reflect the load-carrying work of combat soldiers rather than the ability to run and do push-ups and sit-ups.

Exercise and breast milk. A study of infants who given samples of breast milk collected before and after exercise has found that the milk produced after exercise contained more lactic acid and was less accepted [Pediatrics 89:1245-1247, 1992]. The authors suggest that mothers consider nursing before they exercise rather than soon afterward.

Mother jailed for baby food tampering. A South Carolina woman who put more than 460 pieces of glass in a jar of baby food and then fed several spoonfuls to her 13-month-old son has been sentenced to 33 months in jail followed by three years of supervised probation. The woman had brought the child to an emergency room, claiming that she had discovered glass in two jars of baby food and in her son's mouth. However, federal investigators found that the jars had come from lots produced six months apart and thus could not have had the glass enter them during the manufacturing process. When the investigators indicated they were "pretty sure this was a case of tampering," the woman confessed that she had hoped to get money from both the manufacturer and the grocery store. Prosecution was brought under the federal Anti-Tampering Act.

Notable quote: "Unfortunately, some members of the chiropractic profession have been engaging in what amounts to 'crime and wicked conduct' in their practices by jumping on the bandwagon of getting all they can from the insurance industry while the 'getting' is good. They have been playing a numbers game of getting as many patient visits and as many dollars per visit by whatever means they (and often their practice consultants) can devise.... Some members of our profession have been engaging in outright fraud with too many examinations and inflated office fees—which include inappropriate and worthless therapies and x-ray procedures—that sometimes amount to \$1,000 for the first visit before they've done anything at all for the patient!" [Today's Chiropractic Jan/Feb 1992, 7-9]

Tryptophan suit settled. A suit by a man from Kansas who became quadriplegic after taking L-tryptophan has been settled out of court. The settlement amount was not disclosed, but probably is several million dollars.

FDA stops illegal claims. Swanson Health Products, of Fargo, North Dakota, has agreed to stop selling four products it had been marketing with unsubstantiated claims for the prevention or treatment of serious diseases [FDA Consumer 26(1):41-42, 1992]. The products are *Heart Food* and *Cardiolife* (claimed to prevent heart attacks), *Cata Rx* (promoted as a cure for cataracts), and *Gymnema Sylvestre* (claimed to block absorption of sugar into the body). Swanson's also agreed to stop making therapeutic claims for *Willard's Water* (promoted as an infection fighter) and *Co-Enzyme Q10* and *Acidophilus* (promoted as digestive aids). Swanson is one of the country's largest mail-order discounters of products sold through health food stores. Its monthly newspaper-style catalog (*Health Shopper*) typically ranges from 76 to 96 pages per issue. It consists mainly of articles about products made by other manufacturers. Most articles are accompanied by display ads. Some articles appear to be written by an official of the manufacturing company, some are reprints of articles from other sources, and others are in the format of an "interview" conducted by Swanson. Most articles contain claims that would be illegal on product labels.

Growth of breast-fed infants. A study comparing 46 breast-fed and 41 formula-fed infants has found that both groups grew similarly in height but the breast-fed infants tended to weigh less at the end of 18 months, indicating that they were leaner [Pediatrics 89:1035-1041, 1992]. The researchers noted that when the growth of breast-fed infants was plotted on standard growth charts, they appeared to be "faltering" after a few months even though they actually were healthy and thriving. To avoid causing unnecessary worry among parents, the researchers recommended that their data be used to update growth charts for breast-fed infants.

Weight-loss brochure. The FDA, FTC, and National Association of Attorneys General have produced a brochure describing how to spot phony weight-loss promotions. A free copy of "The Facts About Weight Loss Products and Programs" can be obtained by writing to FDA Consumer Affairs and Information, 5600 Fishers Lane, HFC-110, Rockville, MD 20857.

Weight-loss guidelines. The Michigan Health Council has published the conclusions of a task force appointed in 1987 to establish guidelines for weight-loss programs in Michigan. The 48-page report covers risk-assessment, program staffing, full disclosure to prospective clients, selection of weight-loss goals, nutrition recommendations, exercise, and psychological approaches. The task force recommended against the use of appetite-suppressant drugs and, in most cases, the use of formula products. A free copy of *Toward Safe Weight Loss* can be obtained by writing to Della Jones, Center for Health Promotion, Michigan Dept. of Health, 3423 N. Logan/Martin Luther King, Jr., Blvd., Lansing, MI 48909.

Quackery calendar. The American Medical Association has published a 12 x 18-inch calendar featuring pictures of ads and product labels from the AMA's historical collection. The post-paid price is \$13.45 for AMA members and \$16.45 for nonmembers, plus sales tax in some states. Copies can be ordered by calling 1-800-621-8335. [Order #OP310892]

Delaney Clause criticized. The Council for Agricultural Technology (CAST) has issued a 24-page report stating that the Delaney Clause is "hopelessly obsolete" and should be abandoned. The controversial clause, part of the 1958 Amendment to the Food, Drug, and Cosmetic Act, states that "no additive shall be deemed to be safe if found to induce cancer . . . in man or animals." When the law was passed, about 50 carcinogens were known and could be easily regulated. Since that time, thousands more were identified and advances in analytical methods have enabled detection of amounts that have little or no biological or toxicological significance. CAST and other prominent scientific groups believe that the FDA should be able to utilize a "de minimis" policy. (The term comes from a judicial doctrine, *de minimis non curat lex*, which means "the law does not concern itself with trifles.") The report, *Food Safety: Interpretation of Risk*, can be obtained for \$8.00 from CAST, 137 Lynn St., Ames, IA 50010.

FDA pesticide report. The FDA's annual pesticide residue study has found that 66.8% of 18,214 fruits, vegetables, and other domestic or imported foods, had no detectable pesticide residues, 31.6% had residues below the maximum federal limits, and only 1.5% contained violative levels. The agency's annual Total Diet Study found that dietary intakes of pesticides for all population groups were well within international and EPA standards. Copies of the report, "Residue Monitoring - 1991" are available from Norma Yess, FDA, HFF-420, 200 C St., S.W., Washington, DC 20204.

Dental quackery report. *Dubious Dental Care*, a 12-page report published by the American Council on Science and Health, is now available for \$2.00 from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105. The report covers a wide variety of controversial and quack procedures.

Vitamin hype. The National Nutritional Foods Association (NNFA), is using *Time* magazine's April 6, 1992, cover story, "The New Scoop on Vitamins," as the centerpiece for a public relations campaign. The cover is headlined "The Real Power of Vitamins - New research shows they may help fight cancer, heart disease, and the ravages of aging." The article itself provides a confusing look at research tidbits and speculations about vitamins, garnished by hedged statements by its author. NNFA sent a copy to all members of Congress as part of its campaign to prevent implementation of proposed FDA food labeling regulations. Multiple copies were also distributed to health food stores for distribution to their customers. (NNFA is the major trade organization of health food manufacturers, retailers, and distributors.)

QUESTION BOX

Q. I've received several elaborate mailing pieces for a newsletter called *Health and Healing*, edited by Julian Whitaker, M.D. Can you shed any light on this publication?

A. The newsletter is marketed by Phillips Publishing Co., of Potomac, Maryland, which also publishes a reputable health-related newsletter and several others on financial matters. One promotional piece is a 20-page "special supplement" called "Wellness Today," which claims that Dr. Whitaker "is quickly becoming America's #1 advocate of a more intelligent approach to health care." Dr. Whitaker espouses many questionable methods and appears antagonistic to many types of conventional medical treatment. The newsletter's associate editor is Jane Heimlich, M.D., author of *What Your Doctor Won't Tell You*, a book advocating the gamut of unproven and unscientific approaches to health care. The newsletter has recommended a very-low-fat diet for combatting heart disease, nutritional supplements for a wide variety of unproven purposes, and chelation therapy. Several articles have attacked "FDA tyranny and criticized the medical establishment's negative views toward "alternative medicine." Recent ads state that the circulation is 300,000.

BOOK REVIEW

Title: Earl Mindell's Herb Bible (1992).

Author: Earl Mindell, R.Ph.

Publisher: Fireside Books/Simon & Schuster, New York.

Price: \$13.00

Reviewed by: Varro E. Tyler, Ph.D.

Earl Mindell, co-founder of Great Earth Vitamin Stores, has added another biblical work to his collection (*Earl Mindell's Vitamin Bible*, *Earl Mindell's Vitamin Bible for Kids*, and *Earl Mindell's Pill Bible*). This new volume bears the same relationship to authentic herbal information that tales of the Old and New Testaments simplified for children have to the *Revised Standard Version*. Yet even that analogy does not apply perfectly, because biblical stories retold for juveniles are usually faithful to the original. This herbal is characterized by numerous sins of commission and omission, as well as by a large number of weasel words like "possible benefits," "may help," "often used," "long used," "have relied on," "touted as," "is believed." Such constant equivocation should cause a careful reader to question the validity of any of the information. Pharmacist Mindell states that he owes his lifelong interest in herbs to a college course called Pharmacognosy 101. Pharmacognosy is the science of medicines from natural sources. As a professor in that discipline, I must say it is unfortunate that he did not go on to Pharmacognosy 102.

Following an introductory chapter, the author presents brief monographs on herbs and their uses, which he classified into different chapters on the basis of their popularity, traditional use, geographic origin, recommended availability, female and male specialties, preventive application, cosmetic employment, and fragrance.

Contrary to Mindell's assertions, no substantial evidence supports the use of alfalfa tablets to relieve rheumatoid arthritis; dandelion (part unspecified) does not help rid the body of excess salt; the effectiveness of echinacea as an immune enhancer is not tied to its ability to cause a tingling sensation on the tongue; no proof exists that ginseng increases estrogen levels in human beings; silymarin is not "a flavonoid" but a mixture of flavolignans; two average-sized capsules of white willow bark will not contain a therapeutically effective dose of salicin; there is no reason to believe that yucca will relieve joint pain due to arthritis and rheumatism. His frequent failure to identify the part of the plant introduces many more errors. For example, in the "Ginkgo Tree" monograph he refers to ginkgo as an "ancient remedy." While this is true for the *fruit* of that plant, it does not accurately describe the *leaf extract* that has come into such wide usage recently.

Errors of omission are nearly as frequent. An authoritative work would have noted the effect of capsaicin on substance P and the fact that it alleviates pain only after long usage. The toxicity of nordihydroguaiaretic acid in chaparral is not mentioned; nor is the irritant effect of juniper oil on the kidneys. The effectiveness of nettle root in the treatment of benign

prostatic hypertrophy is not discussed. Recent findings concerning the potential toxicity of skullcap are overlooked. Nothing is said about the need to maintain an alkaline urine if *urva ursi* is to be an effective treatment for bladder and kidney ailments. Borage is recommended without reservation, in spite of its content of hepatotoxic pyrrolizidine alkaloids.

Proper nomenclature is especially important in an herbal guide to identify with certainty the source of the therapeutic agent under discussion. But he errs still further by misidentifying cascara sagrada as California buckthorn and citing obsolete botanical origins, such as *Caryophyllum aromaticum* for clove, *Armoracia lapathifolia* for horseradish, and *Cardus [sic] marianus* for milk thistle. The relatively unimportant *Smilax officinalis* is the only source listed for sarsaparilla. *Ephedra sinica* is not a source of Mormon tea, nor does the latter contain ephedrine and pseudoephedrine. Chaste tree is said to derive from *Verbenaceae [sic]* species, a family composed of about 750 different species in some 70 genera. In fact, it is obtained from only a single species, *Vitex agnus-castus* L. Hawthorn is not spelled with a final "e."

Some of Mindell's comments would be amusing if they were not so woefully inaccurate. The claim that goldenseal, a native of North America, was discovered by the aborigines of northern Australia denies credit to the American Indians who utilized it extensively before transmitting their knowledge of it to the early-day settlers. After noting that guarana seeds contain up to 5 percent caffeine, he states that the plant is "reputed" to increase mental alertness and fight fatigue. This is an instance where the ever-present qualifier could have been omitted. The author's statement that many herbs support the so-called Doctrine of Signatures (plant parts resembling a particular organ cure diseases of that organ) is without foundation. For every herb that appears to support this venerable myth, there are many that do not.

This elementary synopsis of herbal medicine is flawed still further by the inclusion of many unproven and inaccurate assertions regarding the usefulness of the plants discussed. As a sales tool for health food stores, it undoubtedly will do well. As "bible," it fails miserably. Why do you suppose a major publisher is willing to put its imprint on such a book?

Dr. Tyler is professor of pharmacognosy at Purdue University and author of *The Honest Herbal* [Haworth, 1992], an evaluation of popular herbs.

INFORMATION WANTED

If you find any newsworthy item, such as a published article or news report, or have a personal experience that might interest our readers, please send it to Stephen Barrett, M.D., P.O. Box 1747, Allentown, PA 18105. We are especially interested in receiving information about enforcement actions by state agencies and lawsuits by victims of quackery.

NUTRITION

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SHOULD HERBAL REMEDIES REMAIN IN FDA REGULATORY LIMBO?

Varro E. Tyler Ph.D.

Phytomedicines are broadly defined as crude vegetable drugs (herbs) and the extracts and tinctures made from them. They generally are prepared from one of some 13,000 species that have been used for at least a century as traditional medicines by people in various cultures around the world. Several hundred of these are not obscure plants with ambiguous uses whose existence is known only to ethnobotanists. Rather, they are well-known or classic drugs, once commonly used, some of which have already re-entered the *materia medica* as the result of modern investigations. It is the group that is certainly the most likely to yield additional significant drugs if subjected to further scrutiny.

Over the years, more than 600 botanical items have received official recognition in the various editions of *The United States Pharmacopeia*. Most have now been deleted from that volume. It should be emphasized, however, that most did not lose their official status because tests proved them unsafe or ineffective. They were dropped because newer drugs appeared safer, more potent, or, in some cases, more profitable to market. The vast majority of the abandoned botanicals were not thoroughly examined using modern standards. If they had been, I believe that some might still have a practical niche in modern medical practice.

This article discusses ten phytomedicines that have been researched in Western Europe in recent years but are available in the United States only as crude herbs for making teas or as finished products sold as "foods" or "nutritional supplements." I believe that these herbs have utility or potential utility as drugs and that some are eminently worthy of further investigation.

U.S. Regulatory Limbo

The laws and regulations governing the sale of phytomedicines in Western Europe and the United States are complex and vary considerably from country to country. In some countries, many phytomedicines are prescription-only

drugs. In others, they are over-the-counter drugs sold only in pharmacies; in still others, they are sold in so-called drug stores (not pharmacies) or health food stores. Worldwide, they are recommended by herbologists, chiropractors, naturopaths, acupuncturists, and various other "alternative" practitioners and "healers," many of whom are not appropriately trained to diagnose and treat the gamut of disease.

In Germany, approval of herbal drugs is based on the results of clinical and pharmacological studies; in other European countries, such as France and the United Kingdom, the traditional use of herbal drugs is generally considered as sufficient proof of the product's efficacy and safety. Even in Germany, however, where significant evidence is required for approval of a new phytomedicine, the required amount needed is much less than it would be in the United States. The German standard has been characterized as providing "reasonable certainty" rather than "absolute proof" of safety and efficacy.

Much of the research on phytomedicinals in Germany is conducted in-house by pharmaceutical companies, but much is also carried out under grants and contracts by institutes (departments) of the universities. There is considerable concern at these academic institutions that, as the date for European economic unity approaches, this sort of support will be lost. Bureaucrats tend to reduce things to the lowest common denominator, and Germans fear that lax regulations in Britain and France, which allow the sale of phytomedicinals without substantial testing, will prevail throughout all of the countries involved. If phytomedicinals can be sold without the need for evaluation, research funds devoted to this purpose are sure to dry up, and progress in the field will be severely limited.

In this country, no deviation from the most rigid criteria for determining drug safety and efficacy is permitted, even for phytomedicines long in use. It was clearly the intent of the United States Congress to "grandfather" from such requirements all drugs marketed prior to 1962. Because the vast majority of herbs now in use here were at one time official in *The United States Pharmacopeia* or *The National Formulary* and therefore fall into that category, it may seem unusual that they

are not presently viewed in this way by the Food and Drug Administration (FDA). However, that agency, by a clever interpretation of administrative law, simply ruled that pre-1962 drugs could continue to be sold but would be considered misbranded if any therapeutic claims, not proven by post-1962 standards, were made on the label.

This placed phytomedicines in the United States in regulatory limbo between drugs and foods. Although most are basically drugs by almost any definition applied to them, they could not legally be sold as such unless many millions of dollars were spent to prove them safe and effective. Since exclusivity of sales rights could not be assured through the patent mechanism for drugs already used for centuries or even millennia, no manufacturer was willing to hazard such an investment. Phytomedicines continued to be marketed under the guise of foods or nutritional supplements, without therapeutic claims on their labels. No legal standards of quality exist or are now enforced, and, with some herbal products (particularly those with raw expensive ingredients), consumers have less than a 50% chance that the contents and potency are accurately disclosed on the label.

But the most serious effect of the FDA regulations on pre-1962 drugs has been to discourage research in this country, particularly in the pharmacologic and therapeutic areas but also in the area of chemistry, on the classic phytomedicines. Among the most recent drugs of plant origin marketed in this country are the catharanthus alkaloids vinblastine and vincristine, which were discovered about 30 years ago and are now approved for use as chemotherapeutic agents for treating cancer. There is some hope that taxol, now derived from scarce yew trees, may eventually be marketed as an anticancer agent, but first a reliable synthetic or cell-culture production method must be developed so it can be mass-produced. Still, a 30-year gap between new natural plant drugs is much too long.

Consequently, research in the field has shifted to other countries, especially Germany, where phytomedicinals are popular. In 1989, the estimated market for phytomedicinals in Western Europe was 2.2 billion U.S. dollars, with 70% of this figure in Germany alone. These estimates, compiled by the European Scientific Cooperative for Phytotherapy, are viewed by many people as quite conservative.

The second reason why Germany leads the world in phytomedicinal research is that once a product has been proven safe, only reasonable certainty of its efficacy is required to market it there. In 1978, Germany's Federal Health Agency established Commission E to evaluate some 1,400 herbal drugs corresponding to 600–700 different plant species. Evaluations are based on data from the published literature, information supplied by practicing physicians, reports from patients, pharmacological investigations, and limited clinical studies. This process has resulted in a series of monographs that assess the safety and utility of each drug and summarize what is probably the best information available today on the composition and use of many phytomedicinals. This has encouraged even small pharmaceutical manufacturers—and there are many in Germany—to sponsor appropriate research in the hope that the

data obtained will facilitate a favorable evaluation by Commission E.

Ginkgo

Without question, a concentrated extract of the leaves of *Ginkgo biloba L.*, an ornamental tree that is truly a living fossil, is the most important phytomedicinal agent to be marketed in the last decade. Its popularity may be judged by the 5.4 million prescriptions written for it in Germany in 1988, more than for any other pharmaceutical. In addition, it is available in Western Europe as an over-the-counter drug. Ginkgo biloba extract (GBE) is prepared by extracting the dried green leaves with an acetone-water mixture under partial vacuum; the solvent is then removed and the extract adjusted to the desired potency.

GBE appears to be effective against ailments associated with decreased cerebral blood flow, particularly in geriatric patients. Such conditions, including memory loss, headache, tinnitus, and depression, respond to the vasodilation and improved blood flow induced by GBE in both the arteries and capillaries. There is also evidence that the extract is an effective free-radical scavenger. Side effects are usually minimal but may include restlessness, diarrhea, nausea, and vomiting.

In the United States, GBE is marketed as a "food supplement" with no therapeutic claims on product labels. As is customary with phytomedicinals here, catalogues and books make therapeutic claims for GBE that are mostly pure hyperbole [see NF 8:23–24]. Assertions that GBE offers significant protection against strokes or the development of Alzheimer's disease or that it will reverse the aging process, produce increased longevity, or enhance intelligence are, for example, quite unproven.

Echinacea

Echinacea (also called cone flower) was introduced into medicine in 1871 by a patent medicine vendor in Nebraska who learned of its value as a "blood purifier" from the Indians. Originally, the rhizome and root of two varieties were extensively employed here, usually as a tincture (hydroalcoholic solution), as anti-infective agents. In 1920, it was the largest-selling of the 239 plant-derived preparations marketed to physicians by the firm of Lloyd Brothers in Cincinnati. However, with the development of sulfa drugs and other antimicrobial agents, the use of echinacea declined rapidly, and the drug was dropped from official status in *The National Formulary* in 1950. Meanwhile, Dr. Gerhard Madaus had introduced the plant into Germany.

As early as 1939, it was observed that various infectious diseases responded favorably to echinacea therapy despite the fact that the phytomedicinal did not act directly on the disease-producing pathogen. The search for the identity of the active principles of echinacea has led to the publication of more than 200 papers since 1940, with most of the chemical research

conducted in Germany. Although it was postulated in 1941 that constituents in the plant seemed to stimulate the body's own healing powers, serious research on echinacea's nonspecific immunostimulant properties did not begin until 1971. Intensive research, particularly during the last decade, has found that echinacea stimulates the activity of various types of phagocytes, inhibits hyaluronidase, increases fibroblasts and properdin levels, and may cause increased production of interferon. All these activities could result in enhanced resistance to disease.

About 150 conventional (non-homeopathic) phyto-medicinals containing echinacea are currently marketed in Germany. Preparations intended for external use (ointments, lotions, creams) are employed for the treatment of wounds, burns, and various inflammatory conditions. Oral preparations (tinctures, extracts) are used to increase immunity and appear to be most useful in preventing or moderating the symptoms of colds or flu. Injectable preparations are also available. Commission E has approved use of the drug in its various forms. No side effects with local or oral administration have been reported.

Chamomile

Chamomile, particularly the German variety, consists of the dried flower heads of *Matricaria recutita* L. In 1987, it was designated as the medicinal plant of the year in Europe, where it is used in scores of phytomedicinals marketed for treating everything from gastrointestinal spasms to skin irritations. In the U.S., it is known primarily as a pleasant-tasting tea. Chamomile is perhaps the best example of the wide chasm separating medicinal practice in Western Europe and the United States.

Europeans utilize chamomile internally and externally for its anti-inflammatory, antispasmodic, antibacterial, and mild sedative properties. Commission E has declared it effective for all of these actions except as a sedative. Many varieties of chamomile extracts, tinctures, ointments, and teas are sold in Europe. The drug is an ancient one, and the literature dealing with it is extensive. A 1986 review of the literature on chamomile and its near relative, Roman chamomile, listed 220 references.

Contraindications to the use of chamomile are not known. Side effects may include allergic reactions, and some authors place great emphasis on this potential hazard. However, only five such cases were reported in the literature between 1887 and 1982. Considering that an estimated 1 million cups of chamomile tea are consumed daily worldwide, this is a very low incidence.

Feverfew

Feverfew, the leaves of *Tanacetum parthenium* (L.) Schultz Bip., has been used as a folk remedy for the treatment of headache and related conditions for some 2,000 years. During the 1980s, it gained popularity as the result of British studies which found that doses of about 60 mg of freeze-dried powdered leaves could significantly decrease the frequency

and severity of migraine headaches and the nausea and vomiting that may accompany them.

The active principles of feverfew are sesquiterpene lactones, of which parthenolide is the predominant one. Regulatory agencies in various countries have proposed standards ranging from not less than 0.1 to not less than 0.2% of parthenolides in whole, dried feverfew leaf. Where standardized dried leaf preparations are not available, many people consume the fresh leaves, chewing them before swallowing. This can cause ulceration and, more commonly, inflammation of the mouth and tongue, often with swelling of the lips. These conditions subside when administration is stopped. No chronic toxicity tests have been carried out with feverfew, but no serious side effects have been observed, even in long-term users.

In the United States, feverfew is marketed as a "food supplement" in compressed tablets or capsules containing 300 to 380 mg of the herb. The recommended dosage is up to six per day. This is many times the effective daily dose of high-quality preparations, but perhaps this large excess is used as a "safety factor" to assure some activity with low-quality products. A recent study in Canada showed that no commercial feverfew product in North America contained even half of the minimum parthenolide concentration (0.2%) required for effectiveness.

Valerian

Who could imagine that a plant with mild but effective tranquilizing and sedative properties could have been widely used in medicine for a millennium; further, that today in Germany alone more than 100 phytomedicinals containing it are marketed; and, most amazing of all, that the active principles responsible for its therapeutic effects remain unidentified! The existence of such a plant epitomizes the failure of modern-day scientists to coordinate the chemical and pharmacological testing of classical plant drugs. The drug is valerian, the root and rhizome of *Valeriana officinalis* L. Other species possess similar activity and are similarly used.

Over the years, valerian's depressant effects on the central nervous system (CNS) have been attributed to its volatile oil and especially to two components, valerenic acid and valeranone. More recently, it was believed that a mixture of compounds known as the valepotriates was responsible. But in 1988, investigators published the results of an extensive study in rats which indicated that, while the crude drug was effective, these principles were not. Here the matter stands. All that is certain at this time is that rhizomes and roots that are fresh or have been recently dried at a temperature below 40°C exhibit the most effective CNS-depressant activity.

Commission E considers valerian an effective treatment for restlessness and sleep disturbances resulting from nervous conditions. In the United States, the drug is available as a coarse powder for making tea, an encapsulated powder, and a tincture, all of which are marketed as "food supplements." There have been no reports of side effects or toxicity in either animals or humans.

Milk Thistle

About 20 years ago, scientists succeeded in isolating from the milk thistle, *Silybum marianum* (L.) Gaertn., a crude mixture designated silymarin, whose components were later identified. Studies on small animals have shown that silymarin protects the liver against a variety of toxins including those of the deadly amanita. Human trials have also been encouraging with respect to hepatitis and cirrhosis of various origins. Both types of studies suggest that silymarin shields intact liver cells or cells not yet irreversibly damaged by acting on cell membranes to prevent entry of toxic substances. Protein synthesis is also stimulated, thereby accelerating the regeneration process and the production of liver cells. As a result of these findings, Commission E has endorsed the use of milk thistle fruits as a supportive treatment for inflammatory liver conditions and cirrhosis.

Silymarin is very poorly soluble in water, so aqueous preparations (teas) of the fruit are ineffective. Silymarin is also poorly absorbed (20–50%) from the gastrointestinal tract, so the drug is best administered parenterally. Oral use requires a concentrated product. Milk thistle is currently marketed in this country as a "food supplement" in capsules containing 200 mg each of a concentrated extract representing 140 mg of silymarin. Toxic effects have not been reported.

St. John's Wort

Only a portion of the potential of even well-known drug plants has been examined. A case in point is St. John's wort, *Hypericum perforatum* L., the leaves and tops of which have long been used internally as a diuretic and treatment for menstrual disorders and externally, usually in an oil base, for wound healing. More recently, the plant has gained considerable reputation in Europe as an effective treatment for nervousness, sleep disturbances, and, particularly, depression. At first, such activity was attributed to hypericin, a naphthodianthrone pigment, but it is now believed that various flavonoids and xanthenes play a significant role in its antidepressant action. These compounds function as monoamine oxidase inhibitors. Tests on small animals and preliminary tests in humans have confirmed the activity, and Commission E has approved the use of St. John's wort for the treatment of psychotic disturbances, depression, anxiety, and nervous unrest.

The most important property of this ancient plant is perhaps still to be realized. In 1988, investigators showed that hypericin and pseudohypericin showed dramatic antiretroviral activity and low toxicity at effective doses. Phase I clinical trials of hypericin are now underway at New York University Medical Center, and it appears that St. John's wort may eventually yield a useful treatment for retroviral-induced diseases such as AIDS.

Hypericin is known to induce photosensitivity in livestock. While this is not ordinarily a problem in humans taking normal doses of the herb, fair-skinned consumers are cautioned

against excessive exposure to sunlight. St. John's wort is available in this country both in capsules and as a fluid extract. Naturally, these are sold only as "food supplements," not as drugs.

Saw Palmetto

Commission E has approved several plants that can help people with benign prostatic hypertrophy (BPH). Perhaps the most popular of these is saw palmetto (also called sabal), the fruit of *Serenoa repens* (Bartr.) Small. Extracts of the fruits have anti-androgenic properties. The beneficial effects include increased urinary flow, reduced residual urine, increased ease in commencing urination, and decreased frequency of urination. The chemical constituents responsible for this activity have not been identified, but they occur in the fraction extracted by nonpolar solvents.

A number of phytomedicinals containing saw palmetto extract are marketed in Europe. In this country, only the crude drug is available in cut or powdered form for use as a tea because all OTC drug preparations used to treat BPH were banned by the FDA in 1990. Since the active constituents of saw palmetto are not water-soluble, little or no benefit can result from the use of any water-based preparation.

Hawthorn

The leaves and flowers or fruits of the hawthorn, *Crataegus laevigata* (Poir.) DC. and related species, constitute one of the most widely used heart remedies in Germany today. Hawthorn apparently brings about its beneficial effects in two ways. First, it dilates (widens) blood vessels, particularly the coronary arteries, thus improving circulation. In addition, it exerts a positive inotropic (strengthening) effect directly on the heart muscle.

These beneficial effects develop slowly over a period of days or even weeks. Toxic effects are uncommon, even at large doses. The drug thus provides a useful treatment for certain milder forms of heart disease. Such usage has been approved by the Commission E, and scores of phytomedicinals containing hawthorn are marketed in Western Europe. The principal active constituents in hawthorn are simple flavonoids and oligomeric procyanidins. To assure potency, product standardization is based on oligomeric procyanidin content.

Hawthorn was selected as the 1990 medicinal plant of the year by the Union of German Druggists. (In Germany, druggists sell herbal teas and various proprietary products, but they are not pharmacists.) Although hawthorn is available in this country as a "food supplement," both in tablet form and as a powdered herb, I believe it is unsuitable for self-treatment. It might, however, find a useful role in medical practice if competent physicians were permitted to prescribe it. Physicians in Germany recommend use of standardized hawthorn prepara-

tions in mild cases of coronary artery disease and angina pectoris, particularly in the elderly, where a gentle, long-lasting action without side effects is desired.

Melissa

Melissa (also called lemon balm) is a drug derived from the leaves of *Melissa officinalis* L., a volatile-oil-containing herb that was selected medicinal plant of the year in Europe in 1988. The plant is familiar to beekeepers all over the world because the odor of its essential oil resembles that of the pheromone (sex-attractor hormone) produced by bees which consequently find the plant very attractive.

Melissa is little known in this country, but its volatile oil is widely used throughout Western Europe as a sedative, a spasmolytic, and an antibacterial agent. The sedative action is attributed largely to citronellal, with other terpenes such as citronellol, geraniol, caryophyllene, linalool, citral, limonene, and eugenol contributing to the effect. Some of these constituents are responsible for the plant's antispasmodic and antibacterial properties.

Commission E has approved melissa only as a calmative and a carminative, but a cream containing the plant extract is widely marketed as a local treatment for cold sores and related conditions caused by the herpes simplex virus. Here the activity is attributed to a complex mixture of tannins that is contained in the plant to the extent of about 5%. Tests indicate that the ointment can not only reduce the time required to heal herpes lesions, but can also extend the interval between recurrent episodes.

What's the Bottom Line?

Western Europe's experience with useful phytomedicines seems to have had relatively little impact on herbal medicine in the U.S. In Germany, at least, phytomedicine seems to become ever more scientific with proven product safety and efficacy a desired goal. Here, herbal medicine is not only stifled by regulatory disinterest but is debased, even by some knowledgeable people, to the status of unconventional medicine, along with homeopathy, crystal power, Qigong, and numerous other examples of the power of the placebo effect.

Rational herbal therapy is as conventional as the use of plantago seed (psyllium) for constipation. This plant product is an official drug in the current edition of *The United States Pharmacopeia*. Yet a combination of adverse educational, regulatory, and financial circumstances conspires to keep useful phytomedicines out of the American health-care system. If this continues unchanged, herbalism in this country will also remain unchanged—a medieval system in which drugs, not even called drugs, are separated by the Atlantic Ocean from their modern, scientific counterparts in Western Europe.

I believe that the FDA should regulate herbs and

phytomedicines as drugs, not foods or food supplements. However, in evaluating their safety and efficacy, special consideration should be given to their long history of use and the voluminous scientific and clinical literature that has accumulated about them in recent years in developed European nations. Perhaps the simplest procedure would be to adopt the published standards of Commission E herbal monographs. This would not only result in the rapid establishment of appropriate standards; it would also result in considerable saving of time and money that would otherwise be required to duplicate the Commission's findings.

Such an action would benefit consumers in two ways. First, herbal products could be labeled with accurate information about their benefits and risks—information that is unavailable under current FDA policy. Second, requiring product literature to conform to the monographs would undercut the exaggerated claims now made by herbal marketers.

I once thought that public opinion would force our government to change its outlook on phytomedicinals in a relatively short period of time. This prediction now seems faulty, probably, in large measure, because outrageous claims by many herbal advocates have caused the government to view all things associated with herbs as nonscientific and therefore unworthy of consideration. Considering most of the herbal literature available in this country, it is not difficult to see how this impression would be gained. I also thought that the best way to differentiate between rational herbalism and faulty herbalism was to label the latter "paraherbalism" [see NF 6:41-44, 1989]. I now believe it is more appropriate to refer to rationally used herbs or their extracts as phytomedicines and the practice of using such products as phytomedicine. This terminology might remove or lessen the stigma now associated with herbalism.

Research on well-known natural products is not carried out extensively in this country in pharmaceutical industry because of the difficulty in obtaining patent protection and subsequent lack of profitability. But many academic scientists are little concerned about these factors. Some of the plant drugs just discussed present intriguing problems that could be resolved by academic scientists, if funding could be obtained from appropriate granting agencies, such as the National Institutes of Health. Aside from its cancer and AIDS programs, the NIH has been loathe to support phytomedical research, but perhaps the taxol breakthrough will change this picture, too.

I believe that phytomedicines can prove to be a significant source of new drugs and drug products. That is already the case in Western Europe. Scientists themselves need to be aware of this so they, in turn, can create public awareness. This will not only change the regulatory philosophy that now exists, but should also lead to increased funding for natural product research as well.

Dr. Tyler is professor of pharmacognosy at Purdue University and author of *The Honest Herbal*, an evaluation of more than 100 popular herbs and related products. The third (1993) edition is available for \$20 postpaid from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

BRIEFS

Correction. The last issue of *Nutrition Forum* described a study of advertising for nutritional supplements in health and bodybuilding magazines. The note said that among the 221 products for which an effect was claimed, 12 were said to reduce fat. It should have said that these products were said to increase strength.

Dangerous message. Health-food industry publications have expressed optimism that Bill Clinton will support weakening of the FDA after he takes office. In October he issued a letter stating that, "Dietary supplements like vitamins, minerals, herbs and other nutritional substances have an important role in preventive health. We must protect the rights of consumers to choose dietary supplements and insure they are safe and of high quality and that health information about the supplements is truthful and non-misleading. . . . However, the FDA must not be allowed to infringe on the rights of the millions of Americans who enhance their daily diet with vitamins or other dietary supplements. The Health Choices Freedom Act of 1992 was introduced by Congressman Bill Richardson of New Mexico . . . one of the strongest congressional supporters of my campaign for President, and I look forward to working closely with him and the nutritional supplement community on this important issue." *Editor's note: Congressman Richardson's bill, like Senator Hatch's Health Freedom Act [NF 9:30, 1992], would make it virtually impossible for the FDA to regulate claims made for vitamins, minerals, herbs, and anything else the industry calls a "supplement."*

Popular supplements. *Health Foods Business* has asked 15 leading manufacturers to identify their top-selling supplements. The "top ten," listed in the magazine's August 1992 issues, were: multivitamins, vitamin C, vitamin E, calcium, B-complex, Beta-carotene, zinc, calcium/magnesium, multiminerals, potassium, and iron. One company official said that multivitamin/multimineral products "obviously drive the industry." Another manufacturer, referring to vitamin C, Vitamin E, and beta-carotene, said that "the field of antioxidants is on the threshold of exploding."

Critical vitamin report. The New York City Department of Consumer Affairs has published a 57-page report advising vitamin-takers how to avoid overpriced and worthless vitamins. The Department also charged four companies with violating city law by making "preposterous claims" for products. One company had claimed that its vitamin C product could inhibit the AIDS virus. Three others were attacked because their names (*Memory, Supreme Vital Hair, and Manpower*) could mislead consumers into believing that the products could enhance memory, hair growth, or male strength or virility. Copies of the report, *Hype and Hope: The Cost of Vitamins*, are available for \$3 from the Department of Consumer Affairs (Attn: Publications), 42 Broadway, New York, NY 10004.

Much trouble for "clinical ecologist." In April 1991, a jury in New York City awarded \$900,000 to the survivors of Glen Gerston, a commercial artist who committed suicide at the age of 29 after several years of treatment by Warren M. Levin, M.D., a clinical ecologist. The amount included \$411,000 for punitive damages, \$250,000 for wrongful death, \$150,000 for lost earnings, \$85,000 for medical expenses, and \$4,000 for funeral expenses [The New York Jury Verdict Reporter 9(23):1-3, 1991]. Testimony at the trial indicated that although the patient was a paranoid schizophrenic who thought "foods were out to get him," Dr. Levin had diagnosed him as a "universal reactor" and advised that, to remain alive, he must live in a "pure" environment, follow a restrictive diet, and take supplements. Dr. Levin admitted that since 1974, when he began practicing clinical ecology, he had diagnosed every patient he saw as suffering from environmental illness. In September 1992, after a lengthy investigation involving the care of 13 patients, the New York State Department of Health Board for Professional Medical Conduct stated that Dr. Levin "has a litany of unproven and medically unnecessary tests that he runs on virtually all patients. He uses these tests—whatever their results may be—to convince his patients that his unconventional kinds of treatment are necessary." The Board found him guilty of "gross negligence," "fraudulent practice," and "moral unfitness" and recommended that his license be revoked. "Clinical ecology is a pseudoscience based on claims that "overloading" the immune system causes multiple common symptoms.

"Natural" poultry? Several producers have launched a petition campaign to persuade the U.S. Department of Agriculture to define more narrowly the term "natural" when used in labeling fresh meat and poultry products. Their goal is to restrict the term to animals that have been raised since birth without antibiotics or growth-producing hormones. According to a report in *Natural Foods Merchandiser*, current regulations permit use of the term for any fresh meat or poultry product that contains no artificial ingredients and has undergone only minimal processing. The issue may also be addressed when "organic" standards are proposed as required by a federal law passed two years ago [NF 8:25-29, 1991].

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Supplement labeling rules blocked. On December 2, Health and Human Services Secretary Louis Sullivan proposed final regulations that provide for consistent, scientifically based labeling for all processed foods. However, the proposed regulations did not cover the labeling of dietary supplements. An amendment passed during the closing days of the 1992 Congressional session prevents the FDA from proposing new regulations for dietary supplements until the end of 1993. The amendment, engineered by Senator Orrin Hatch (R-UT), also delays possible implementation of new standards (RDIs) for vitamin and mineral contents.

Antiquackery blockbuster. The American Medical Association has published a 370-page guide to contemporary literature on "alternative" health methods, which it defines as "methods that are not based on established scientific knowledge." The book, *Reader's Guide to "Alternative" Health Methods*, summarizes the contents of more than 1000 books, journal articles, and other reports published mainly between 1980 and 1992. It also lists organizations that promote "alternative" methods and organizations and publications that are skeptical of these methods. The book's introduction notes that the word "alternative" has two possible meanings: "Correctly employed, it refers to methods that have equal value for a particular purpose. (An example would be two antibiotics capable of killing a particular organism.) When applied to unproven methods, however, the term can be misleading because methods that are unsafe or ineffective are not reasonable alternatives to proven treatment." The introduction also states: "Our handling of information contrasts starkly with that of the general media. During the past few years, many articles and broadcasts addressed to the public have given what we believe is a very distorted view of 'alternative' health-care methods. Most of these reports are marked by a complete absence of critical thinking and merely echo the views of proponents and their satisfied clients." The book, which lists for \$34.95, is available for \$32 postpaid from LVCAHF/NF, P.O. Box 1747-N, Allentown, PA 18105.

Poultry irradiation approved. The U.S. Department of Agriculture has approved the irradiation of poultry, which can greatly reduce the danger of *Salmonella* contamination. However, large poultry producers have expressed no interest in irradiating their products. Part of their reluctance is due to protests from individuals opposed to irradiation, but some of it stems from reluctance to admit that there is anything now wrong with their products. The December 1992 issue of *American Health* contains an outstanding article exploding the propaganda of irradiation opponents.

Fluoridation and hip fractures. A study of patients in Utah who were 65 years of age or older has found that those who lived in a fluoridated community had a slightly higher incidence of hip fractures [JAMA 268:746-748, 1992]. An accompanying editorial, titled "Please 'pass the roach poison again,'" noted that other studies have shown the opposite and that many other factors are involved in the development of hip fractures and that the study does not provide reason to curtail fluoridation programs. [JAMA 268:781-782, 1992].

Modern alchemy? Termites, ruminants, and/or the microorganisms they harbor produce enzymes that turn cellulose, the woody fraction of plant materials, into glucose. Researchers at USDA's Northern Regional Research Center in Peoria, Illinois, are studying the role of three relevant enzymes (xylanase, xylosidase, and arabinosidase) and the bacterium (*Bacteroides ovatus*) that produces them in the human large intestine. The researchers hope to find a way to turn dietary fiber into a calorie-producing substance.

Caffeine withdrawal symptoms. A study of 62 normal adults whose mean daily intake of caffeine was 235 mg (the amount in 2.5 cups of coffee) found that 52% of them had moderate or severe headaches and 8 to 11% had symptoms of depression or anxiety when they abruptly switched to a caffeine-free diet [New England Journal of Medicine 327:1109-1114, 1992]. A copy of the report can be obtained from Roland R. Griffiths, Ph.D., Dept. of Psychiatry, Johns Hopkins University School of Medicine, 5500 Nathan Shock Drive, Suite 3000, Baltimore, MD 21224.

Report on amino acid safety. The Federation of American Societies for Experimental Biology (FASEB) has issued a 324-page report on the safety of amino acids used as dietary supplements. The FDA commissioned the report because of the epidemic of eosinophilia-myalgia syndrome epidemic among people who took L-tryptophan. The report concludes that: (1) single- or multiple-ingredient capsules, tablets, and liquid products are used primarily for pharmacological purposes or enhancement of physiological functions rather than for nutritional purposes; (2) little scientific literature exists on most amino acids ingested for these purposes; (3) no scientific rationale has been presented to justify the taking of amino acid supplements by healthy individuals, (4) safety levels for amino acid supplement use cannot be established at this time, and (5) a systematic approach to safety testing is needed. Copies of the report are available for \$40 from FASEB, 9650 Rockville Pike, Bethesda, MD 20814.

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HEARING EXAMINES L-TRYPTOPHAN REGULATION

On July 18, 1991, the Human Resources and Intergovernmental Relations Subcommittee of the House of Representatives' Committee on Government Operations held a hearing on the regulatory history of L-tryptophan. The testifiers included scientific experts, regulatory officials, and victims of eosinophilia-myalgia syndrome (EMS), a previously rare disease that erupted among L-tryptophan users in 1989. L-tryptophan, an essential amino acid, was marketed as a "dietary supplement" for many years before the FDA banned it in response to the EMS outbreak.

One of the experts was Richard J. Wurtman, M.D., professor of neuroscience at M.I.T. and Harvard Medical School, the leading researcher on amino acid metabolism. He testified that, 20 years ago, his laboratory discovered that tryptophan levels normally control the production of serotonin, a brain chemical involved in sleep, mood, and appetite. He said that, at the time, he thought that tryptophan might become a legitimate drug that could help people sleep, diminish pain, and control mood and appetite.

"Nobody argues about whether tryptophan works," Dr. Wurtman continued. "The reason 15 million people took it is that when presented in pure form—which it wasn't in EMS patients—it is an effective compound. . . . I had assumed that pharmaceutical companies might take this discovery and invest the \$10 or \$20 million, whatever it took then, to do appropriate safety and efficacy studies." Noting that tryptophan might eventually have been approved as a drug, he lamented that "it didn't work out that way. . . . because tryptophan was allowed to be sold as a nutritional supplement."

"But tryptophan in a bottle is not a nutritional supplement, Dr. Wurtman said. "In protein, it comes with 21 other amino acids, and you need all of them in order to utilize them and make protein. Pure tryptophan in pills or in a bottle is not natural. . . . The body cannot use it to make its own protein. There is not a single person in America who is tryptophan-deficient. Isolated amino acid deficiencies do not occur. People who have low blood tryptophan levels also have low blood levels of other essential amino acids as well, because these people are protein-deficient. Giving one amino acid to a protein-deficient person can make matters worse."

Dr. Wurtman noted that since manufacturers did not want to invite FDA regulatory action by openly marketing tryptophan as a drug, they did not list appropriate use, dosage, or contraindications on their labels. "Tryptophan was, in every sense, an accident waiting to happen," he added. He also described hazards associated with other amino acids that are still marketed in health food stores. He believes that isolated amino acids should not be marketable unless they can meet regulatory standards for prescription drugs.

FDA officials presented the following account of tryptophan's regulatory history. Until 1973, it was included on a list of food substances that were generally regarded as safe (GRAS) for use as dietary supplements. In 1973, the FDA revoked this GRAS status and stated that L-tryptophan could not

be marketed without approval as a food additive. Since approval had not been sought, the agency initiated seizure actions against two manufacturers. The first case was dismissed because L-tryptophan was accidentally included on a GRAS list published in 1977. The second case was withdrawn before a verdict was rendered, because the FDA believed that the judge was inclined to favor the manufacturer. The FDA also felt constrained by the Proxmire Amendment (1976), which curbed its ability to regulate vitamin dosage. Although amino acids were not included under this law, the agency took its passage as a signal that Congress did not want supplement products regulated without serious indications of danger to health. Thus, although the marketing of amino acid supplements was illegal, the FDA did nothing further until the EMS outbreak occurred.

After the outbreak occurred, an anonymous person sent the FDA a package of ads and product literature that contained therapeutic (drug) claims for L-tryptophan. FDA attorney Mary Pendergast, who compiled a 21-page analysis of this material, concluded that at least 26 companies had made illegal claims and that many "amino acids" were still sold as dietary supplements in violation of FDA food additive and drug regulations. She also concluded that the occurrence of EMS in children might be related to the marketing of the products advertised for use in sedating children.

Rep. Patsy T. Mink [D-HI], who presided over the hearing, asked what the FDA was doing about the illegal promotions described in the analysis and whether criminal charges would be filed. She was informed that the agency had initiated several investigations, but details could not be revealed. Mrs. Mink then said, "I don't know why an agency in the first place has to sit and wait for anonymous information; it should be out there investigating. But the fact is you had some information to base some corrective action on and I'm just a little amazed that nothing has been done." Following a few minutes of additional testimony, she summed up her view of the proceedings:

I think the hearings. . . make it clear that the L-tryptophan tragedy was indeed an accident waiting to happen. . . . Throughout the 1980s, the FDA permitted all amino acids to be marketed illegally as dietary supplements. Many of these products made illegal drug claims that were also ignored by the agency. What is perhaps most alarming is that all of the amino acids that remain on the market today in supplement form are illegal. We fail to understand how FDA can allow the supplement industry to flaunt federal law.

The U.S. Government Printing Office has published a transcript of the hearing and the documents submitted to the subcommittee. A limited supply is available from the subcommittee staff (202-225-2548). Copies may also be purchased from the Superintendent of Documents, Washington, DC 20402. (Ask for "FDA's Regulation of the Dietary Supplement L-Tryptophan," ISBN 0-16-03830-9.)

NUTRITION

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"ALTERNATIVE" THERAPY BUZZWORD FOR THE '90s

Stephen Barrett, M.D.

The *American Heritage Dictionary* defines "buzzword" as "a usually important-sounding word or phrase connected with a specialized field that is used primarily to impress laymen." Promoters of quackery are very adept at using slogans and buzzwords. During the 1970s, they popularized the word "natural" as a magic sales slogan. "Natural" foods are claimed to be safer and/or more nutritious than other foods. Despite the falsity of this claim, "natural" products typically command higher prices than their "unnatural" counterparts.

During the '80s, the word "holistic" gained widespread use. "Holistic" practitioners imply that their approach is special because it treats the "whole patient" and not just the disease. However, good physicians have always paid attention to patients' social and emotional concerns as well as their physical problems. Most practitioners who call themselves "holistic" are engaged in unscientific methods. For this reason, scientific practitioners should not embrace it.

Today's leading buzzword is "alternative." Correctly employed, the word refers to methods that have equal value for a particular purpose. (An example would be two antibiotics capable of killing a particular organism.) When applied to unproven methods, however, the term can be misleading because methods that are unsafe or ineffective are not reasonable alternatives to proven treatment. For this reason, I place the word "alternative" in quotation marks when it refers to methods that are not based on established scientific knowledge.

Many "alternative" approaches are rooted in vitalism, the concept that bodily functions are due to a vital principle or "life force" distinct from the physical forces explainable by the laws of physics and chemistry. Nonscientific health systems based on this philosophy maintain that diseases should be treated by "stimulating the body's ability to heal itself" rather than by "treating symptoms." Homeopaths, for example, claim that illness is due to a disturbance of the body's "vital force," which they can correct with special remedies, while acupuncturists claim that disease is due to imbalance in the flow of "life energy" (*Ch'i* or *Qi*), which they can balance by twirling needles in the skin. Many chiropractors claim to assist the body's

"Innate Intelligence" by adjusting the patient's spine. Naturopaths speak of "Vis Medicatrix Naturae." Ayurvedic physicians refer to "prana." And so on.

Although vitalists often pretend to be scientific, they really reject the scientific method with its basic assumptions of material reality, mechanisms of cause and effect, and provability. Their proponents regard personal experience, subjective judgment and emotional satisfaction as preferable to objectivity and hard evidence.

Misleading Publicity

During the past year the news media have publicized "alternative" methods in ways that will cause great public confusion. Most of these reports have contained little critical thinking and have featured the views of proponents and their satisfied clients. *Time*, *Newsweek*, and *U.S. News & World Report* have published feature articles stating that "alternative" methods have become increasingly popular. "Good Morning America" and "CBS This Morning" have aired snippets for a week, and CBS's "48 Hours" has aired a 1-hour show. And Cable News Network and the Associated Press have propagated the conclusions of a *New England Journal of Medicine* article (discussed below) without any indication that the study was flawed.

Many of these reports exaggerated the significance of the newly opened National Institutes of Health Office for the Study of Unconventional Medical Practices (now called the Office of Alternative Medicine). *Time*, for example, stated that "the NIH program is supported by an odd alliance of New Age believers and old-school quackbusters. Both sides want to sort out once and for all what works." The article was titled, "New Age Meets Hippocrates: Medicine gets serious about unconventional therapy."

Taken together, these reports have suggested that "alternative" methods have become increasingly accepted by the public, even though (as I had pointed out to several reporters) no valid data exist to enable comparison of past and present utilization of most "alternative" practices. Many of these reports

have lumped approaches (such as biofeedback and a low-fat diet) that probably have real value with nonsensical methods (such as homeopathy) and concluded (incorrectly) that "alternatives" are moving into the scientific mainstream. Some reports decry the high cost of medical care and suggest that "alternatives" may prove to be less expensive.

Behind the Scenes

During the past few months, the Fetzer Institute has emerged as a major player in the unfolding mess. The Institute, located in Kalamazoo, Michigan, is described in its brochure as "a nonprofit educational organization that promotes research into health care methods that utilize the principles of mind-body phenomena." Since 1991, the Institute has published *Advances* ("The Journal of Mind-Body Health"), which was originally published by the Institute for the Advancement of Health. This latter group, which ceased operations on January 1, 1991, was heavily promoted by the late Norman Cousins, a prominent editor who claimed to have healed his spine and his heart with unconventional methods.

In January 1993, the *New England Journal of Medicine* published "Unconventional Medicine in the United States," an article by David Eisenberg, M.D., and five collaborators [NEJM 328:246-252, 1993]. The article, supported by a contract with the Fetzer Institute, was based on a telephone survey concerning the use of 16 types of "unconventional therapy" among 1,539 individuals. The authors concluded:

One in three respondents (34%) reported using at least one unconventional therapy in the past year, and a third of these saw providers for unconventional therapy . . . In 1990 Americans made an estimated 425 million visits to providers of unconventional therapy. This number exceeds the number of visits to all U.S. primary care physicians (388 million). Expenditures . . . amounted to approximately \$13.7 billion.

Although the report was widely cited in the media as evidence of increasing public interest in "alternative methods," the study's design was extremely poor. The authors define "unconventional therapies" as "medical intervention not taught widely at U.S. medical schools or generally available at U.S. hospitals." However, the categories they selected included some approaches that are medically appropriate (self-help groups, for example) and some that may or may not be appropriate, depending on the circumstances (relaxation therapy, biofeedback, hypnosis, massage, and commercial weight-loss clinics). About 30% of the visits were for "relaxation techniques," 11% for commercial weight-loss clinics, and 5% for self-help groups. In light of these facts, the estimated expense total is meaningless.

The February issue of *Consumer Reports* contains a 9-page article titled, "Can Your Mind Heal Your Body," said to be "largely adapted from the book *Mind/Body Medicine*, just published by Consumer Reports Books." The article concludes that enough is known about "mind/body medicine" to make it

applicable in a number of situations and that mind/body techniques pose virtually no physical or emotional risks—as long as they are not used in place of conventional medicine. This advice strikes me as simplistic. Although some activities, such as self-help groups, can offer valuable emotional support, other mind/body techniques are the bailiwick of charlatans. The book thanks the Fetzer Institute for cooperating and supporting its planning and development, but no mention of this role accompanies the *Consumer Reports* article.

From February 22 through February 24, the Public Broadcasting System will air a 5-part series called "Healing and the Mind," narrated by Bill Moyers. The topics include Chinese medicine (featuring Dr. Eisenberg), "the relationship between the immune system and our emotions," group therapy and meditation, "the art of healing," and treatment at Commonweal, a "retreat center for people with cancer." The series was funded by the Fetzer Institute and four other sources. An article in *USA Today* has noted that Eisenberg, an instructor at Harvard Medical School, was the principal consultant for the series and is a Fellow of the Fetzer Institute. The article states that he hopes to create a teaching center "dedicated to the rigid assessment of unconventional therapies" with "a lot of political support and a lot of money to fund and implement." When asked how our already overburdened health-care system can afford to study unconventional methods, he replied, "How can we not spend millions of dollars to understand which are safe, effective and could save money?"

David Zimmerman, editor/publisher of *Probe*, has prepared 2-part report on the Fetzer Institute. In a recent conversation, he said, "It isn't often that the *New England Journal*, Consumers Union, and PBS can get snookered by the

FOR ADDITIONAL INFORMATION

Reader's Guide to "Alternative" Health Methods (\$30.00), written by two AMA Library officials, Stephen Barrett, M.D., and NCAHF president William Jarvis, Ph.D., cites and analyzes more than 1,000 reports on "unproven, disproven, controversial, fraudulent, quack, and/or otherwise questionable approaches to solving health problems." Each major topic includes an overview by the authors.

A Consumer's Guide to "Alternative Medicine" (\$18.00), written by Kurt Butler and edited by Stephen Barrett, M.D., is a treasure-trove of information on dubious products and practices. Two chapters confront leading "diet gurus" and "experts to be wary of." Another deals with chiropractic, which the author calls a "cancer of the health-care system." Another blasts acupuncture, naturopathy, ayurveda, multilevel marketers, and other "wannabes." Another attacks scores of modern "snake-oil" products. A chapter on "tabloid journalism" summarizes the author's 2-year study of TV talk shows, in which he recorded or obtained a transcript of almost every one that promoted dubious health ideas. The final chapter provides novel ideas for antiquackery activities. Orders should be sent to LVCAHF-NF, P.O. Box 1747, Allentown, PA 18105, adding \$2.00 for the first book and 50¢ for each additional book for postage.

same folks." (His reports can be obtained for \$5 from Probe, Box 1321, Cathedral Station, New York, NY 10025.)

The NIH Deback

In 1991, at the urging of former Congressman Berkley Bedell, Senator Tom Harkin (D-IA) secured passage of a law ordering NIH to foster research into unconventional practices and allocating \$2 million per year for two years. In various interviews, Bedell acknowledged that he had undergone unconventional treatment "to replenish nitrogen" for a suspected recurrence of prostate cancer.

Early in 1992, NIH appointed a 20-person ad hoc advisory panel that included him, Dr. Eisenberg, and leading advocates of acupuncture, energy medicine, homeopathy, Ayurvedic medicine, and several types of "alternative" cancer therapies. A few qualified researchers were placed on the panel, but they had little influence over subsequent events. In June, the panel met for two days to discuss research principles and to hear testimony from more than fifty assorted practitioners.

In addition to promoting their own approach to health care, many panelists and testifiers praised NIH for its "openness" and commented to the press that the event "legitimized" unconventional medicine itself. Panel members were considered "professional service contractors" and did not have to file conflict-of-interest statements or promise to refrain from using their advisory status in advertising their products and services. Although several "quackbusters," including me, were interviewed for possible appointment to the panel, we were neither selected nor notified about the meeting. When a list of panelists was faxed to me by a reporter, I predicted that many would trumpet their appointment as evidence that whatever they promote is valid. That is precisely what happened.

Panelists were assigned to committees, which made recommendations at a meeting in September. These included: (1) collecting and disseminating research literature on unconventional practices; (2) making the NIH office a permanent entity with authority to issue grants and peer-review committees that include experts in the therapies under consideration; (3) introducing medical and nursing students to alternative therapies while in school; and (4) a moratorium on legal actions and other sanctions against physicians who practice aspects of alternative medicine under consideration at NIH. Press reports indicate that the NIH office is considering proposals to fund studies of several methods. It remains to be seen whether such studies will be funded and will yield useful results. Even if useful research is conducted, however, its benefit is unlikely to outweigh the publicity bonanza given to quack methods.

Quackery vs. Science

"Alternative" practitioners typically use anecdotes and testimonials to promote their practices. When someone feels better after having used a product or procedure, it is natural to credit whatever was done. This can be misleading, however, because most ailments resolve themselves and those that

persist can have variable symptoms. Even serious conditions can have sufficient day-to-day variation to enable quack methods to gain large followings. In addition, taking action often produces temporary relief of symptoms (a placebo effect). People who are not aware of these facts tend to give undeserved credit to "alternative" methods.

When challenged about the lack of scientific evidence supporting whatever they espouse, promoters of quackery offer various responses. They may claim that scientific reports (whose meaning they distort) do back them up. They may claim that research isn't necessary because they have seen with their own eyes that their methods are effective. They may claim that funds are not available for them to perform research. Sometimes they claim that the scientific establishment is unwilling to test their methods or even to look at their data. They may claim that scientific journals are unwilling to consider their research because it poses a threat to the establishment. Each of these claims involves deception. Preliminary research does not require funding or even take much effort. The principal ingredients are careful clinical observations, detailed record-keeping, and long-term follow-up "to keep score." Proponents of "alternative" methods almost never do any of these things.

Under the rules of science and consumer protection, no procedure is presumed safe or effective until reasonably demonstrated to be so. National Council Against Health Fraud president William T. Jarvis, Ph.D., has noted that proponents should carry the burden of proof because "no agency could test all of the theories that people dream up." Actually, most proponents who clamor for research do so as a ploy to arouse public sympathy—the last thing they want is a scientific test that could prove them wrong. Should scientific studies be performed and come out negative, proponents invariably claim that the studies were conducted improperly or that the evaluators were biased.

It is often suggested that people seek "alternatives" because doctors are brusque, and that if doctors were more attentive, their patients would not turn to quacks. Doctors sometimes pay insufficient attention to the emotional needs of their patients. But blaming the medical profession for quackery's success would be like blaming astronomers for the popularity of astrology. Some people's needs exceed what ethical, scientific health care can provide. And many types of quackery have nothing to do with doctor-patient relationships. The main reason for quackery's success is its ability to seduce people who are unsuspecting or desperate. The massive publicity given to "alternatives" will do exactly that.

In December, I expressed several of these points in a lively debate with a naturopath, a homeopath, and a "nutritional doctor" on a "Donahue" show entitled "Can Alternative Medicine Replace Doctors?" Transcripts are available for \$3 from Journal Graphics, 1535 Grant St., Denver, CO 80203. Video-tapes (\$28.90) can be ordered by calling 1-800-367-84336.

Stephen Barrett, M.D., a practicing psychiatrist and consumer advocate, edits *Nutrition Forum Newsletter* and is co-author/editor of 32 books on health topics. He is a board member of the National Council Against Health Fraud and has been investigating the health marketplace for more than 20 years.

MINI-GLOSSARY OF "ALTERNATIVE" METHODS

Except for biofeedback, none of the items in this list has a rationale or underlying theory that is consistent with accepted scientific beliefs. Biofeedback has proven efficacy but is also promoted with dubious claims.

Acupressure (shiatsu): A technique that uses finger pressure instead of needles at "acupuncture points."

Acupuncture: A system of treatment purported to balance the body's "life force" by inserting needles (or using other forms of stimulation) at various points where imaginary horizontal and vertical lines ("meridians") meet on the surface of the body. These points are said to represent various internal organs (some of which are nonexistent). Although acupuncture can sometimes relieve pain, there is no evidence that it can influence the course of any organic disease.

Anthroposophical medicine: A set of practices based on the occult philosophy of Rudolph Steiner (1861-1925) and said to relate humankind to the natural environment, with emphasis on color, rhythm, and spirituality. Its practitioners frequently prescribe homeopathic remedies, herbs, study of musical instruments, social service projects, prayer, and meditation. The remedies are claimed to restore balance either by strengthening the therapeutic "etheric body" or by moderating the animalistic "astral body."

Applied kinesiology: A pseudoscience based on the belief that every organ dysfunction is accompanied by a specific muscle weakness that can be diagnosed by various tests. (Note: kinesiology, which is the study of the mechanics and anatomy of motion, is a legitimate science.)

Ayurvedic medicine: A set of practices promoted by transcendental meditation (TM) organizations. Ayurveda (meaning "life knowledge") is said to be based on a traditional Indian approach that includes meditation, purification procedures, rejuvenation therapies, herbal and mineral preparations, exercises and dietary advice based on "Ayurvedic body type."

Biofeedback: A technique that can help people learn to control certain body functions. The patient is connected to a device that continuously signals the heart beat, skin temperature, degree of muscle contraction, or other mechanism. In scientific hands, biofeedback has achieved a measure of respectability for helping patients control pain, anxiety, phobias, high blood pressure, sleep disorders, and some stomach and intestinal disorders. Some specialized techniques have been used to treat abnormal heart rhythms, epilepsy, Tourette's syndrome, fecal incontinence, and Parkinson's disease. However, claims that biofeedback fosters "personal growth," "self-understanding," "stabilization of the autonomic system," or the like are simplistic and unproven.

Cellular therapy: Injections of animal cells into the human body, claimed by various proponents to cure disease, rejuvenate or "revitalize" the body, and prolong life. The cells are commonly obtained from freshly slaughtered sheep fetuses, but other animals can be used. The method is also called "cell therapy" and "live-cell therapy."

Chelation therapy: A series of intravenous administrations of a synthetic amino acid (EDTA) plus various other substances. Proponents claim that chelation can reverse atherosclerosis and is effective against many other diseases. However, there is no scientific evidence that this is so.

Chinese medicine: A collection of practices that includes acupuncture, the use of herbs and dietary procedures, pulse diagnosis, and other procedures. (Pulse diagnosis supposedly involves six pulses at each wrist that correspond to twelve internal spheres of bodily function.)

Chiropractic: A broad spectrum of practices related to the false premise that spinal misalignments ("subluxations") are the cause, or underlying cause, of most ailments. Many chiropractors prescribe and sell supplement concoctions in their offices [NF 9:25-28, 1992]. Chiropractic has received considerable favorable publicity since a RAND Corporation study concluded that spinal manipulation may be appropriate for certain cases of low-back pain. However, most of the research upon which this conclusion was based was done under medical supervision and does not reflect what takes place in a typical chiropractic office.

Clinical ecology: A pseudoscience based on the premise that multiple common symptoms are triggered by hypersensitivity to common foods and chemicals. Also called "environmental medicine" by its proponents.

Colonic irrigation: A "high colonic" enema performed by passing a rubber tube into the rectum for a distance of up to 20 or 30 inches. Warm water is pumped in and out through the tube, a few pints at a time, typically using 20 or more gallons. Some practitioners add herbs, coffee, or other substances to the water. The procedure is said to "detoxify" the body, though no "toxins" have ever been specified or scientifically demonstrated.

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Complementary medicine: A term used by unscientific practitioners who claim to integrate both "alternative" and conventional methods into their practice.

Energy medicine: An umbrella term for various practices said to be based on the practitioner's ability to view or sense an individual's "energy field" or "etheric body." Some practitioners claim to rely on psychic ability, while others use "electro-diagnostic" devices.

"Holistic" approach: A slogan used to suggest that a practitioner treats the "whole person," with due attention to emotional factors as well as the person's lifestyle. Most practitioners who call themselves "holistic" use unscientific methods for diagnosis and treatment.

Homeopathy: A pseudoscience based on the idea that symptoms can be cured by taking infinitesimal amounts of substances that, in larger amounts, can produce similar symptoms in healthy people. Homeopathic theory states that the more dilute the remedy, the more powerful it is. (Some are said to be so dilute that no molecule of the original substance remains.)

Iridology: A pseudoscience based on the idea that each area of the body is represented by a corresponding area in the iris (pupil) of the eye. Practitioners claim to diagnose nutritional imbalances that can be treated with vitamins, minerals, herbs, and similar products.

Macrobiotic diet: A semi-vegetarian diet claimed by its proponents to improve health and prolong life. Proponents suggest that the diet is effective in preventing and treating cancer, AIDS, and other serious diseases. There is no evidence to support these claims. Some versions of the macrobiotic diet contain adequate amounts of nutrients, but others do not.

Mental imagery: A procedure in which detailed mental images are used in an attempt to control a situation. For example, cancer patients may imagine that their white blood cells are little knights in white armor attacking their tumors, which they picture as black dragons. New Age devotees may imagine that they have spirit guides and work to put as much detail as possible into the fantasized image.

Metabolic therapy: A loosely defined treatment program based on the idea that cancer, arthritis, and other chronic illnesses result from a disturbance of the body's ability to protect itself. The program is claimed to detoxify the body and strengthen

the immune system. Its components, which vary from practitioner to practitioner, may include megadoses of vitamins, oral enzymes, pangamic acid, coffee enemas, a low-protein diet, and laetrile (for cancer).

Natural hygiene: A form of naturopathy that emphasizes fasting, strict vegetarianism, and food-combining, a dietary practice based on the incorrect notion that certain food combinations can cause or correct ill health. Natural hygienists oppose immunization and food irradiation and eschew most forms of medical treatment.

Naturopathy: A system of treatment based on the belief that the cause of disease is violation of nature's laws. Naturopaths believe that diseases are the body's effort to purify itself, and that cures result from enhancing the body's ability to heal itself. Naturopathic treatments can include "natural food" diets, vitamins, herbs, tissue minerals, cell salts, manipulation, massage, exercise, diathermy, colonic enemas, acupuncture, and homeopathy. Like some chiropractors, many naturopaths believe that virtually all diseases are within the scope of their practice.

Nutripathy: A pseudoscience in which treatment with supplements and other measures is related to a formula devised by Cary Reams. Proponents claim that the formula, derived from the results of nonstandard urine and saliva tests, reveals energy input and energy use within the body. Reams, a self-professed biophysicist, was prosecuted for practicing medicine without a license during the 1970s.

Orthomolecular therapy: A treatment approach that supposedly provides the correct amounts of nutritionally "right" molecules normally found in the body. Its practitioners prescribe large doses of vitamins, minerals, and various other substances. It is sometimes referred to as megavitamin or meganutrient therapy.

Reflexology: Pseudoscience based on beliefs that each body part is represented on the hands and feet and that pressing on the hands and feet can have therapeutic effects in other parts of the body. Also called "zone therapy."

Therapeutic touch: A system in which the hands are used to "direct human energies to help or heal someone who is ill." Proponents claim that healers can detect and correct "energy imbalances" by stroking the body or placing their hands above the afflicted part. Healing supposedly can result from a transfer of "excess energy" from healer to patient.

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NUTRITION MISINFORMATION IN THE DENTAL OFFICE

John E. Dodes, D.D.S.

Dental problems are among the most common ailments in the United States, accounting for over \$34 billion in dental bills in 1990. Most dentists work in solo or very small group practices where they are not exposed to the professional review and criticism of their colleagues. This situation, plus economic pressures and the poor education in scientific methodology and clinical nutrition afforded to most dentists, has led to the dissemination of dubious, erroneous, and fad nutrition information in many dental offices.

Dentistry has a long history of dentists promoting nutrition faddism. Weston Price, D.D.S., was the primary purveyor of pseudonutrition in dentistry. His book *Nutrition and Physical Degeneration* alleged that tooth decay was a tragic expression of our "modern degeneration," which he referred to as "race decay." Price blamed soil depletion, white flour, sugar, and pasteurized milk.

Royal Lee, a nonpracticing dentist who marketed vitamin products, opposed fluoridation, and promoted nutrition misinformation. In 1962, Lee and his company were convicted of misbranding 115 special dietary products by making false claims for the treatment of more than 500 diseases and conditions. Lee received a one-year suspended prison term and was fined \$7,000. In 1963, a prominent FDA official said Lee was "probably the largest publisher of unreliable and false nutritional information in the world." Although Lee died in 1967, many of the products are still marketed and prescribed inappropriately by dentists (and chiropractors).

Melvin Page, D.D.S., is the father of the phrase "balancing body chemistry." Page stated that dental caries is an "outstanding example of systemic chemical imbalances." His book, *Degeneration-Regeneration*, claims that there "is but one disease: inefficient body chemistry." Page's discredited ideas have been followed by many dentists, including Hal Huggins, D.D.S., of Colorado Springs, Colorado. In his videotaped "tour" of the Huggins Diagnostic Center, Huggins recommends using hair analysis as the basis for prescribing supplements to "balance body chemistry." However, hair analysis is not a valid basis for determining the body's nutritional state.

Huggins is also the leading advocate of the disproven allegations that the mercury in "silver" fillings causes a host of diseases, from arthritis to multiple sclerosis. This allegation is false because this mercury is strongly bound to the other materials in the amalgam and is not released in significant amounts.

Huggins prescribes special diets and "detoxifying" supplements before and following the removal of a patient's silver fillings. Replacement with gold or other materials is not only costly to the patient but can also cause great harm. In order to replace a filling it is necessary to enlarge the cavity in which it is placed, which may weaken the tooth or injure the nerve, causing the tooth to be lost. In 1985, a \$100,000 settlement was awarded to a 55-year-old California woman whose dentist had

removed her silver fillings after claiming that the fillings were a "liability" to her large intestine. In removing the fillings from five teeth, the dentist caused severe nerve damage requiring root canal therapy for two teeth and extraction of two others.

Another major figure in promoting dubious nutrition information is Emanuel Cheraskin, M.D., D.D.S. A former dental school professor, Cheraskin exaggerates the value of nutrition in health and disease and, in fact, argues that most, if not all diseases can be prevented and/or treated with diet alone. For example, Cheraskin is an advocate of "orthomolecular psychiatry," the disproven theory that emotional problems are caused by dietary deficiencies. The American Psychiatric Association has disclaimed this theory. In their books *New Hope for Incurable Diseases* and *Psychodietetics*, Cheraskin and co-author William Ringsdorf, D.D.S., make many scientifically unsupported claims concerning the value of nutrition in treating and preventing diseases, especially incurable ones. They claim, for example, that a diet low in sugar and processed carbohydrates will demonstrably tighten periodontally loose teeth in ten days. Cheraskin and Ringsdorf lecture widely, and both once taught at the University of Alabama's dental school.

A 1985 article in a dental trade journal was titled "Nutrition counseling boosted our practice." The article stated "Are you interested in doubling your net practice income? We almost did it last year . . . we used nutritional counseling as the vehicle." Usually "counseling" is not the only service such dentists provide. They also sell unnecessary and overpriced nutrition supplements, often through the use of discredited diagnostic methods such as hair analysis, lingual ascorbic acid testing, applied kinesiology, testing for food allergies, pendulum divining, and other occult practices. Some dentists sell supplements and herbal preparations as distributors for multi-level "health food" companies.

In 1985 many dentists, myself included, were contacted by Neil Brahe, D.D.S., a well known practice management "expert." Dr. Brahe was promoting United Sciences of America (USA) Inc., a multilevel vitamin and food supplement company. He stated, "You can make the products available to your patients . . . and they can purchase from the company with profit dollars coming to you." The claims for these supplements were roundly criticized as being unscientific and inaccurate, especially by Dr. Fredrick J. Stare, M.D., Ph.D., professor emeritus of the Harvard School of Public Health. In 1987 the company was successfully prosecuted by the Attorney Generals of New York, Texas, and California and driven out of business. But not before many unsuspecting dental patients were sold its expensive and useless products.

In 1979 a dentist who was a food faddist, told his 40-year-old diabetic patient, Carl Stevens, to stop taking insulin and substitute a "holistic" diet. Within three weeks Carl was dead, but his dentist persuaded Carl's widow that Carl could be brought back from the dead through special rituals and psychic

communication. Eight years later Carl Stevens' mummified remains were discovered in his Illinois home. The dentist, whose dental license had been revoked for failure to renew, was sentenced to 30 months' probation.

Patients with temporomandibular joint (TMJ) disorders, characterized by chronic facial pain and difficulty opening the mouth, are often treated with a host of unscientific methods usually including food supplements and vitamins. One author recommended "raw veal bone" for this condition.

A number of dentists are giving patients with periodontal disease vitamin preparations, especially vitamin C, even though studies have shown no benefit. And it is not unusual to hear of patients being sold expensive food supplements and vitamins as part of implant treatment or even routine dental therapy. One reason this occurs is because dentists are poorly trained in the principles of scientific reasoning and are barraged by quack courses given at dental conventions and seminars.

Dental meetings, conventions, and many dental journals do not screen lecturers and writers for scientific validity. In December 1989, for example, the *New York State Dental Journal* published an article by a dentist on "Health, Nutrition and Aging," which included the false claim that soil depletion and food processing produce nutritionally impoverished food. This, of course, is untrue. Our soils are not nutrient-deficient. Even if they were, however, the result would not be vitamin-deficient plants, but smaller yields. And food processing often increases the nutritional value of the food. This article cited many discredited and unscientific vitamin promoters as references and should never have been published in a state dental journal.

The 1989 Greater New York Dental Meeting (the

largest dental convention in the world) offered a course by a physician who is a proponent of clinical ecology, a discredited form of "allergy" treatment. During his lecture he advocated a number of fad nutrition practices. When a reputable professional association offers a course eligible for continuing education credit, it is easy to assume that the course is scientifically valid. The American Dental Association has expressed concern about dubious seminars but fears that aggressive actions (such as "blacklisting" speakers) could trigger expensive lawsuits. Another factor is that these dubious courses can generate large profits for the sponsors.

The media often promote food faddism with inaccurate and misleading stories. Articles in *Newsweek* and *Chemical & Engineering News* have greatly distorted the facts on fluoridation, and "60 Minutes" on CBS TV has aired a horrendous program attacking the use of silver-fillings. Media that prime the pump of quackery in this manner help greedy and/or gullible dentists to pander to patients' health fears.

Concerned dentists and dental educators are seeking stricter standards for lecturers and authors in major dental meetings and journals. They are also urging that dental education be improved by including courses on scientific method, statistics, and the recognition of quackery. Meanwhile the public should be wary of dentists who preach faddist nonsense and sell dietary supplements under the guise of "nutrition counseling."

Dr. Dodes, who practices in Woodhaven, N.Y., is president of the New York State chapter of the National Council Against Health Fraud.

BRIEFS

Diet and cancer surprise. An 8-year study of 89,494 nurses who were between ages 34 and 59 when the study began has found no evidence that a high intake of dietary fat increases the incidence of breast cancer or that a high intake of dietary fiber protects against it [JAMA 268:2037-2044, 1992]. The authors note, however, that recommendations to reduce the intake of animal fat (saturated fat) still are justified to reduce the incidence of cardiovascular disease and possibly colon cancer.

Opposition to genetically engineered foods. Leaders of the Pure Food Campaign (PFC), a project of biotechnology critic Jeremy Rifkin's Foundation on Economic Trends, claim that decals with their boycott logo are appearing in restaurants and retail stores and that 1,500 chefs have pledged to refuse to purchase, prepare, or serve genetically engineered foods. PFC's warning statements and tactics resemble those of food irradiation opponents and are just as ill-founded. PFC has announced its intention to launch an international boycott of the Campbell Soup Company, which financed the development of the Flavr Savr tomato [see NF 9:24, 1992], unless the company halts research and marketing of genetically engineered tomatoes.

Fewer food stamp vendors. Federal laws require that at least half of a store's food stamp sales be in staple items for home consumption, such as bread, milk, meat, and cereals. The Pennsylvania Food Advocate has reported that about 650 convenience stores were being dropped from participation in the Food Stamp program because they sell more snacks than staple food. Many of these stores are in inner-city neighborhoods that no longer have large supermarkets. Last spring the U.S. Department of Agriculture began a 2-year review of the 213,000 retailers nationwide who had been accepting food stamps. About 26 million Americans use the stamps.

Notable quote: The power over people the Prophet role provides is awesome. Some doctors consciously avoid it. They are right to teach patients self-reliance and discourage dependency behavior, but in doing so they may fail to meet important emotional needs in their patients. Quacks, on the other hand, revel in, encourage and exploit this power. Egomania is commonly found among quacks. They enjoy the adulation . . . their pretense of superiority evokes."—William T. Jarvis, Ph.D., *Bulletin of the Louisville (Ky.) Medical Society, Feb. 1991*

Vitamin C and iron overload. Victor Herbert, M.D., J.D. has asked the FDA to require that vitamin C supplements be labeled: "Warning: Do not take this product unless your body iron status has been assessed by a competent health professional... Vitamin C supplements are dangerous for people with excess body iron. About 10% of Americans have such excess because they inherited a gene for it; few know they have it. In addition, most people receiving frequent blood transfusions have excess body iron, as do the majority of people deficient in either folic acid or vitamin B₁₂. It is important to recognize that weakness, tiredness, and mild anemia can occur with iron excess just as with iron deficiency."

Dieters exaggerate weight loss. A study of 82 adults who had participated in community weight-loss programs has found that the average (mean) self-reported weight was about five pounds less than the weight as measured by the researchers [Journal of the American Dietetic Association 92:1483-1486, 1992]. Those who weighed the most tended to have the largest discrepancies.

Raw milk danger. A survey of 51 state and territorial health departments has tabulated 20 outbreaks of acute diarrhea that occurred between 1981 and 1990, due to drinking unpasteurized (raw) milk during school trips or other organized youth activities [JAMA 268:3228-3230]. Fourteen occurred among children in kindergarten through third grade. In the affected groups, 45% of 1,013 who drank the raw milk became infected with *Campylobacter* organisms. The authors note that the dairy industry has not been able to eradicate the organisms from its herds and that cows excreting them can appear healthy. Thus the only way to prevent human infection is to avoid raw milk.

"Organic food" news. The California Department of Food and Agriculture has fined a San Francisco grocer \$500 for misrepresenting selling conventionally grown produce as "organically grown." This is the first such penalty issued under the California Organic Foods Act of 1990. *Organic Times* has reported that 1991 sales for the organic industry totalled \$1.25 billion, a 25% increase over 1990, and that the number of growers increased to 3,114, up 38% from 1990. Meanwhile, the National Organic Standards Board—charged by a 1990 law to develop federal standards [see NF 8:25-29, 1990]—has had its operating funds slashed from \$120,000 for fiscal year 1992 to \$15,600 for the current fiscal year, despite a request for \$780,000. An article in the Winter 1993 *Organic Farmer* magazine states that the board's work will continue "mostly via phone, fax, and mail," but the October 1993 implementation deadline is "unrealistic, even with full funding."

CDC changes name. A new law has changed the name of the U.S. Centers for Disease Control to the Centers for Disease Control and Prevention. However its initials will remain "CDC," because they are so widely recognized. Headquartered in Atlanta, with some personnel in the Washington, D.C., area, the agency has more than 7,000 employees.

Nutri-System update. *The Diet Business Bulletin* has reported that many suits alleging that Nutri-System's low-fat diet caused gallstone formation have been settled out of court with the stipulation that settlement terms would not be disclosed by the person suing. Three suits that went to court during the past 18 months were decided in favor of the company.

"Tanning tablets" prohibited. Janet V. Hopper, former president and sole shareholder of AMT Research, Inc., of Greensboro, N.C., has consented to a permanent injunction barring her from interstate marketing of any product containing canthaxanthin or any unapproved food additive. According to a report in the January-February 1993 *FDA Consumer*, the company had falsely advertised that its *BronzTan* and *BronzGlo* tablets had government approval for tanning purposes and that no harmful side effects were known. Canthaxanthin is legally used in tiny amounts as a food coloring agent for soups, fruit drinks, salad dressings, catsup, and margarine. Ingestion of larger amounts can tint the skin orange. Despite a warning by the FDA, it has been illegally sold in tanning parlors and by mail as a tablet for skin "tanning." Medical reports have linked canthaxanthin use to hepatitis, generalized itching, hives, and eye problems. The consent decree was based in part on Ms. Hopper's assurance that her company, had been dissolved.

Low-dose caffeine withdrawal. A controlled double-blind study of 62 adults with caffeine intakes equivalent to 2.5 cups of coffee per day found that about half experienced moderate or severe headaches and some experienced anxiety, depression, and/or fatigue when their caffeine intake was stopped abruptly [New England Journal of Medicine 327:1109-1114, 1992]. The authors concluded that people who consume low or moderate amounts of caffeine may have a withdrawal syndrome after their daily consumption of caffeine ceases. Reprints of the report can be obtained from Roland R. Griffiths, Ph.D., Dept. of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, 5510 National Shock Drive, Suite 3000, Baltimore, MD 21224. *Editor's note: Although not addressed by this study, abrupt withdrawal from one cup of coffee daily can produce severe symptoms in some individuals. This can be avoided by gradually tapering intake over a period of a week or so.*

Dubious cancer remedy banned. The FDA has obtained an injunction forbidding the distribution of Cancell (also called Entelev) to patients. The product, originally called Entelev, is a liquid promoted for the treatment of cancer, AIDS, and many other diseases. It is purported to cure cancer by reducing the voltage of cancer cells until they become "primitive" and self-destruct. In 1989, the FDA reported that Cancell contained inositol, nitric acid, sodium sulfite, potassium hydroxide, sulfuric acid, and catechol. Subsequently, its promoters claimed to be modifying the formulation to make it more effective. Laboratory tests conducted between 1978 and 1991 by the National Cancer Institute found no evidence that Cancell was effective against cancer. The American Cancer Society has published a detailed report advising against its use [CA 43:57-62, 1993].

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VITAMIN PUSHERS AND FOOD QUACKS

Victor Herbert, M.D., J.D.

We still are in the midst of a vitamin craze. Nutrition hustlers are cleaning up by stoking our fears and stroking our hopes. With their deceptive credentials, they dominate air waves and publications. Talk show hosts love them because their false promises of superhealth draw huge audiences. The situation now appears even worse than it was more than twenty-five years ago, when FDA Commissioner George P. Larrick stated:

The most widespread and expensive type of quackery in the United States today is the promotion of vitamin products, special dietary foods, and food supplements. Millions of consumers are being misled concerning the need for such products. Complicating this problem is a vast and growing "folklore" or "mythology" of nutrition which is being built up by pseudoscientific literature in books, pamphlets and periodicals. As a result, millions of people are attempting self-medication for imaginary and real illnesses with a multitude of more or less irrational food items. Food quackery today can only be compared to the patent medicine craze which reached its height in the last century.

"Health food" rackets cost Americans billions of dollars a year. The major victims of this waste are the elderly, the pregnant, the sick, and the poor.

The Fundamentals of Good Nutrition

Have you been brainwashed by vitamin pushers? Do you believe you should supplement your diet with extra nutrients? Do you believe that, "If some is good, more is better"? Do you believe extra nutrients can't hurt"? Or that they provide "nutrition insurance"? If you believe any of these things, you have been misled.

The fundamentals of good nutrition are simple: To get the amounts and kinds of nutrients your body needs, eat moderate amounts of food from each of the food groups designated by the U.S. Department of Agriculture's Daily Food Guide, choosing a wide variety within each category. (For

detailed instructions send \$1 for USDA's *Food Guide Pyramid* booklet [Publication No. HG 249] to the Consumer Information Center, Pueblo, CO 81009.) This food plan provides for adequate quantities of all vitamins, minerals, and protein components. Actually, normal people eating a balanced variety of foods are likely to consume *more* nutrients than they need. Of course, health hucksters won't tell you this because their income depends upon withholding that truth. Unlike responsible practitioners, they do not make their living by trying to keep you healthy, but rather by tempting you with false claims. These claims raise their personal appearance fees, sell their books and magazine articles, and sell the products of companies in which (unknown to you) they may have a financial interest.

The Dangers of Excess Vitamins

When on the defensive, quacks are quick to demand, "How do you know it doesn't help?" The reply to this is "How do you know it doesn't *harm*?" Many substances that are harmless in small or moderate doses can be harmful either in large doses or by gradual build-up over many years. Just because a substance (such as a vitamin) is found naturally in food does not mean it is harmless in large doses.

When scientists speak of "excess" vitamins, they mean dosages in excess of the "Recommended Dietary Allowances (RDAs)" set by the Food and Nutrition Board of the National Research Council, National Academy of Sciences. The RDAs are the "levels of intake of essential nutrients considered, in the judgment of the Food and Nutrition Board on the basis of available scientific knowledge, to be adequate to meet the known nutritional needs of practically all healthy persons." RDAs should not be confused with "requirements." They are more than most people require. They are set not only to meet body needs, but to allow substantial storage to cover periods of reduced intake or increased need. Amounts higher than the RDAs serve no vitamin function in the body. They should be considered *drugs* and can be an invitation to trouble.

There are two situations in which the use of vitamins in excess of the RDAs is legitimate. The first is the treatment of

medically diagnosed deficiency states—conditions that are rare except among alcoholics, persons with intestinal malabsorption defects, and the poor, especially those who are pregnant or elderly. The other use is in the treatment of certain conditions in which vitamins are used for their chemical (non-vitamin) actions. None of these situations is suitable for self-treatment.

How can vitamin pushers and food quacks be identified? The following behavior should make you suspicious.

They use anecdotes and testimonials to support their claims.

We all tend to believe what others tell us about personal experiences. But separating cause and effect from coincidence can be difficult. If people tell you that product X has cured their cancer, arthritis, or whatever, be skeptical. They may not actually have had the condition. If they did, their recovery most likely would have occurred without the help of product X. Most single episodes of disease recover with just the passage of time, and most chronic ailments have symptom-free periods. Establishing medical truths requires careful and repeated investigation—with well-designed experiments, not reports of coincidences misperceived as cause-and-effect. That's why testimonial evidence is forbidden in scientific articles and usually is inadmissible in court.

Never underestimate the extent to which people can be fooled by a worthless remedy. During the early 1940s, many thousands of people became convinced that "glyoxylide" could cure cancer. Yet analysis showed it was simply distilled water!

Symptoms that are psychosomatic (bodily reactions to tension) are often relieved by anything taken with a suggestion that it will work. Tiredness and other minor aches and pains may respond to any enthusiastically recommended nostrum. For these problems, even physicians may prescribe a placebo. A placebo is a substance that has no pharmacological effect on the condition for which it is used, but is given to satisfy a patient who supposes it to be a medicine. Vitamins (such as B₁₂) are commonly used in this way.

Placebos act by suggestion. Unfortunately, some doctors swallow the advertising hype or become confused by their own observations and "believe in vitamins" beyond those supplied by a good diet. Those who share such false beliefs do so because they confuse coincidence or placebo action with cause and effect. Homeopathic believers make the same error.

Talk show hosts give quacks a boost when they ask "What do all the vitamins you take do for you personally?" Then thousands or even millions of viewers are treated to the quack's talk of improved health, vigor and vitality—with the implicit point: "It did this for me. It will do the same for you." A most revealing testimonial experience was described during a major network show that hosted several of the world's most prominent promoters of nutritional faddism. While the host was boasting that his new eating program had cured his "hypoglycemia," he mentioned in passing that he was no longer drinking twenty to thirty cups of coffee a day. Neither the host nor any of his "experts" had the good sense to tell their audience how

dangerous it can be to drink so much coffee. Nor did any of them recognize that the host's original symptoms were probably caused by excess caffeine.

They promise quick, dramatic, miraculous cures.

The promises are usually subtle or couched in "weasel words"—so they can deny making them when the feds close in. Such promises are the quacks' most immoral practice. They don't seem to care how many people they break financially or in spirit—by elation over their claims of quick cure followed by deep depression when the claims prove false. Nor do quacks keep count—while they fill their bank accounts—of how many people they lure away from effective medical care into disability or death.

They use disclaimers couched in pseudomedical jargon.

Instead of promising to cure your disease, some quacks will promise to "detoxify" your body, "balance" its chemistry, release its "nerve energy," bring it in harmony with nature, "stimulate" or "strengthen" your immune system, or "support" various organs in your body. (Of course they never identify or make valid before-and-after measurements of any of these processes.) These disclaimers serve two purposes. Since it is impossible to measure the processes they allege, it may be difficult to prove them wrong. Moreover, if a quack is not a physician, the use of nonmedical terminology may help to avoid prosecution for practicing medicine without a license—although it shouldn't.

They display credentials not recognized by responsible scientists or educators.

The backbone of educational integrity in America is a system of accreditation by agencies recognized by the U.S. Secretary of Education and/or the Council on Postsecondary Accreditation. "Degrees" from unaccredited schools are rarely worth the paper they are printed on. In the health field, there is no such thing as a reliable school that is not accredited. Since quacks operate outside of the scientific community, they also tend to form their own "professional" organizations.

In some cases, the only membership requirement is payment of a fee. My office wall displays fancy "professional member" certificates for Charlie Herbert (a cat) and Sassafras

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Herbert (a dog). Each was acquired simply by submitting the animal's name, our address, and a check for \$50. Don't assume that all groups with scientific-sounding names are respectable. Find out whether their views are scientifically based.

Unfortunately, possession of an accredited degree does not guarantee reliability. Some schools that teach unscientific methods (chiropractic, naturopathy, and acupuncture) have achieved accreditation. Worse yet, a small percentage of individuals trained in reputable institutions (such as medical or dental schools or accredited universities) have strayed from scientific thought.

Some quacks are promoted with superlatives like "the world's foremost nutritionist" or "America's leading nutrition expert." There is no law against this tactic, just as there is none against calling oneself the "World's Foremost Lover." However, the scientific community recognizes no such title.

They encourage patients to lend political support to their treatment methods.

A century ago, before scientific methodology was generally accepted, valid new ideas were hard to evaluate and were sometimes rejected by a majority of the medical community, only to be upheld later. But today, treatments demonstrated as effective are welcomed by scientific practitioners and do not need a group to crusade for them. *Quacks seek political endorsement because they can't prove that their methods work.* Instead, they may seek to legalize their treatment and force insurance companies to pay for it. Judges and legislators who believe in caveat emptor (let the buyer beware) are natural allies for quacks.

They say that most disease is due to faulty diet and can be treated with "nutritional" methods.

This simply isn't so. Consult your doctor or any recognized textbook of medicine. They will tell you that although diet is a factor in some diseases (most notably coronary heart disease), most diseases have little or nothing to do with diet. Common symptoms like malaise (feeling poorly), tiredness, lack of pep, aches (including headaches) or pains, insomnia and similar complaints are usually the body's reaction to emotional stress. The persistence of such symptoms is a signal to see a doctor to be evaluated for possible physical illness. It is not a reason to take vitamin pills.

Some quacks seem to specialize in the diagnosis and treatment of problems considered rare or even nonexistent by responsible practitioners. Years ago hypothyroidism and

adrenal insufficiency were in vogue. Today's "fad" diagnoses are "hypoglycemia," "mercury amalgam toxicity," "candidiasis hypersensitivity," and "environmental illness." Quacks are also jumping on the allergy bandwagon, falsely claiming that huge numbers of Americans are suffering from undiagnosed allergies, "diagnosing" them with worthless tests, and prescribing worthless "nutritional" treatments.

They recommend a wide variety of substances similar to those found in your body

The underlying idea—like the wishful thinking of primitive tribes—is that taking these substances will strengthen or rejuvenate the corresponding body parts. For example, according to a health food store brochure:

Raw glandular therapy, or "cellular therapy" . . . seems almost too simple to be true. It consists of giving in supplement form (intravenous or oral) those specific tissues from animals that correspond to the "weakened" areas of the human body. In other words, if a person has a weak pancreas, give him raw pancreas substance; if the heart is weak, give raw heart, etc.

Vitamins and other nutrients may be added to the various preparations to make them more marketable. When taken by mouth, such concoctions are no better than placebos. They usually don't do direct harm, but their allure may steer people away from competent professional care. Injections of raw animal tissues, however, can cause severe allergic reactions to their proteins. Some preparations have also caused serious infections.

Proponents of "tissue salts" allege that the basic cause of disease is mineral deficiency—correction of which will enable the body to heal itself. Thus, they claim, one or more of twelve salts are useful against a wide variety of diseases, including appendicitis (ruptured or not), baldness, deafness, insomnia, and worms. Development of this method is attributed to a nineteenth-century physician named W.H. Schuessler.

Enzymes for oral use are another rip-off. They supposedly aid digestion and "support" many other functions within the body. The fact is, however, that enzymes taken by mouth are digested into their component amino acids by the stomach and intestines and therefore don't function as enzymes within the body. Oral pancreatic enzymes have legitimate medical use in diseases involving decreased secretion of one's own pancreatic enzymes. Anyone who actually has a pancreatic enzyme deficiency probably has a serious underlying disease requiring competent medical diagnosis and treatment.

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When talking about nutrients, they tell only part of the story.

They tell you all the wonderful things that vitamins and minerals do in your body and/or all the horrible things that can happen if you don't get enough. But they conveniently neglect to tell you that a balanced diet can provide all the nutrients you need, and that the USDA Pyramid Food Guide system makes balancing your diet simple. Unfortunately, it is legal to lie in a publication or lecture or on a talk show as long as the claims are not connected to selling a specific product. Many supplement manufacturers use subtle approaches. Some simply say "Buy our product X... It contains nutrients that help promote healthy eyes (or hair, or whatever organ you happen to be concerned about)." Others distribute charts saying what each nutrient does and the signs and symptoms of deficiency disease. This encourages supplementation with the hope of enhancing body functions and/or avoiding the troubles described.

Another type of fraudulent concealment is the promotion of "supplements" and herbal extracts based on incomplete information. Many health food industry products are marketed with claims based on faulty extrapolations of animal research and/or unconfirmed studies on humans. The most notorious such product was L-tryptophan, an amino acid. For many years it was promoted for insomnia, depression, premenstrual syndrome and overweight, even though it had not been proven safe or effective for any of these purposes. In 1989, it triggered an outbreak of eosinophilia-myalgia syndrome, a rare disorder characterized by severe muscle and joint pain, weakness, swelling of the arms and legs, fever, skin rash, and an increase of eosinophils (certain white blood cells) in the blood. Over the next year, more than 1,500 cases and 28 deaths were reported. The outbreak was traced to a manufacturing problem at the plant of a wholesale supplier. The naked truth is that L-tryptophan should not have been marketed to the public in the first place because—like most single-ingredient amino acids—it had not been proven safe for medicinal use. In fact, the FDA had issued a ban during the mid-1970s, but had not enforced it.

They claim that most Americans are poorly nourished.

This is an appeal to fear that is not only untrue, but ignores the fact that the main forms of bad nourishment in the United States are undernourishment among the poverty-stricken and overweight in the population at large, particularly the poor. Poor people can ill afford to waste money on unnecessary vitamin pills. Their food money should be spent for nourishing food. With one exception, food-group diets contain all the nutrients that people need. The exception involves the mineral iron. The average American diet contains barely enough iron to meet the needs of infants, fertile women, and, especially, pregnant women. This problem can be solved simply by cooking in a "Dutch oven" or any iron pot or eating iron-rich foods such as soy beans, liver, and veal muscle.

It is falsely alleged that Americans are so addicted to "junk" foods that an adequate diet is exceptional rather than

usual. It is true that some snack foods are mainly "naked calories" (sugars and/or fats without other nutrients). But it is not necessary for every morsel of food we eat to be loaded with nutrients. No normal person following the USDA's food group system is in any danger of vitamin deficiency.

They tell you that if you eat badly, you'll be OK if you take supplements.

This is the "Nutrition Insurance Gambit." The statement is not only untrue but encourages careless eating habits. The remedy for eating badly is a well balanced diet. If in doubt about the adequacy of your diet, write down what you eat for several days and see whether your daily average is in line with the USDA's guidelines. If you can't do this yourself, your doctor or a registered dietitian can do it for you.

They allege that modern processing methods and storage remove all nutritive value from our food.

It is true that food processing can change the nutrient content of foods. But the changes are not so drastic as the quack, who wants you to buy supplements, would like you to believe. While some processing methods destroy some nutrients, others add them. A balanced variety of foods will provide all the nourishment you need.

Quacks distort and oversimplify. When they say that milling removes B-vitamins, they don't bother to tell you that enrichment puts them back. When they tell you that cooking destroys nutrients, they omit the fact that only a few nutrients are sensitive to heat. Nor do they tell you that these few nutrients are easily obtained from a portion of fresh uncooked fruit, vegetable, or fresh or frozen fruit juice each day.

They claim that fluoridation is dangerous.

Curiously, quacks are not always interested in real deficiencies. Fluoride is necessary to build decay-resistant teeth and strong bones. The best way to obtain adequate amounts of this essential nutrient is to augment community water supplies so their fluoride concentration is about one part fluoride for every million parts of water. But quacks are usually opposed to water fluoridation, and some advocate water filters that remove fluoride. It seems that when they cannot profit from something, they may try to make money by opposing it.

They oppose pasteurization of milk.

One of the strangest aspects of nutrition quackery is its embrace of "raw" (unpasteurized) milk. Public health authorities advocate pasteurization to destroy any disease-producing bacteria that may be present. Health faddists and quacks claim that it destroys essential nutrients. Although about 10 percent of the heat-sensitive vitamins (vitamin C and thiamine) are destroyed during pasteurization, milk would not be a significant source of these nutrients anyway. Raw milk, whether "certified"

or not, can be a source of harmful bacteria that cause dysentery and tuberculosis. The FDA has banned the interstate sale of raw milk and raw-milk products packaged for human consumption. In 1989, a California Superior Court judge ordered the nation's largest raw milk producer to stop advertising that its raw milk products are safe and healthier than pasteurized milk and to label its products with a conspicuous warning.

They claim that soil depletion and the use of "chemical" fertilizers result in less nourishing food.

These claims are used to promote the sale of so-called "organically grown" foods. If a nutrient is missing from the soil, a plant just does not grow. Chemical fertilizers counteract the effects of soil depletion. Plants vary in mineral content, but this is not significant in the American diet. Quacks also lie when they claim that plants grown with natural fertilizers (such as manure) are nutritionally superior to those grown with synthetic fertilizers. Before they can use them, plants convert natural fertilizers into the same chemicals that synthetic fertilizers supply.

They claim that under stress, and in certain diseases, your need for nutrients is increased.

Many vitamin manufacturers have advertised that "stress robs the body of vitamins." One company has asserted that, "if you smoke, diet, or happen to be sick, you may be robbing your body of vitamins." Another has warned that "stress can deplete your body of water-soluble vitamins . . . and daily replacement is necessary." Other products are touted to fill the "special needs of athletes."

While it is true that the need for vitamins may rise slightly under physical stress and in certain diseases, this type of advertising is fraudulent. The average American—stressed or not—is not in danger of vitamin deficiency. The increased needs to which the ads refer almost never rise above the RDAs and can be met by proper eating. Someone who is really in danger of deficiency as a result of illness would be a very ill person who needs medical care, probably in a hospital. But these promotions are aimed at average Americans who certainly don't need vitamin supplements to survive the common cold, a round of golf, or a jog around the neighborhood! Athletes get more than enough vitamins when they eat the food needed to meet their caloric requirements.

Many vitamin pushers suggest that smokers need vitamin C supplements. While it is true that smokers in North America have somewhat lower blood levels of this vitamin, these levels are still far above deficiency levels. In America, cigarette smoking is the leading cause of death preventable by self-discipline. Rather than seeking false comfort by taking vitamin C, smokers who are concerned about their health should stop smoking. Moreover, since doses of vitamin C high enough to acidify the urine speed up excretion of nicotine, they may even cause some smokers to smoke more to avoid symptoms of nicotine withdrawal. Suggestions that "stress vitamins" are helpful against emotional stress are also fraudulent.

They claim you are in danger of being "poisoned" by ordinary food additives and preservatives.

This is a scare tactic designed to undermine your confidence in food scientists and government protection agencies. Quacks want you to think they are out to protect you. They hope that if you trust them, you will buy what they recommend. The fact is that the tiny amounts of additives used in food pose no threat to human health. Some actually protect our health by preventing spoilage, rancidity, and mold growth.

Two examples illustrate how ridiculous quacks can get about food additives, especially those found naturally in food. Calcium propionate is used to preserve bread and occurs naturally in Swiss cheese. Quacks who would steer you toward (higher-priced) bread made without preservatives are careful not to tell you that a one-ounce slice of "natural" Swiss cheese contains the same amount of calcium propionate used to retard spoilage in two one-pound loaves of bread. Similarly, those who warn about monosodium glutamate (MSG) don't tell you that the wheat germ they hustle as a "health food" is a major natural source of this substance.

Also curious is their failure to warn that many plant substances sold in health food stores are potentially toxic and can cause disability or death. The April 6, 1979, *Medical Letter* listed more than thirty such products, most of them used for making herbal teas.

They claim that "natural" vitamins are better than "synthetic" ones.

This claim is a flat lie. Each vitamin is a chain of atoms strung together as a molecule. Molecules made in the "factories" of nature are identical to those made in the factories of chemical companies. Does it make sense to pay extra for vitamins extracted from foods when you can get all you need from the foods themselves?

They claim that sugar is a deadly poison.

Many vitamin pushers would have us believe that sugar is "the killer on the breakfast table" and is the underlying cause of everything from heart disease to hypoglycemia. The fact is, however, that when sugar is used in moderation as part of a normal, balanced diet, it is a perfectly safe source of calories and eating pleasure. In fact, if you ate no sugar, your liver would make it from protein and fat because your brain needs it.

They recommend that everybody take vitamins or "health foods" or both.

Food quacks belittle normal foods and ridicule the food-group systems of good nutrition. They may not tell you that they earn their living from such pronouncements—via public appearance fees, product endorsements, sale of publications, or financial interests in vitamin companies, health food stores, or organic farms.

The very term "health food" is a deceptive slogan. All food is health food in moderation; any food is junk food in excess. Did you ever stop to think that your corner grocery, fruit market, meat market, and supermarket are also health food stores? They are—and they generally charge less than stores that use the slogan.

Many vitamin pushers make misleading claims for bioflavonoids, rutin, inositol, paraaminobenzoic acid (PABA), and other such food substances. These substances are not needed in the diet, and the FDA forbids nutritional claims for them on product labels.

By the way, have you ever wondered why people who eat lots of "health foods" still feel they must load themselves up with vitamin supplements?

They suggest that hair analysis can be used to determine the body's nutritional state.

"Health food" stores and various unscientific practitioners suggest this test. For \$25 to \$50 plus a lock of your hair, you can get an elaborate computer printout of vitamins and minerals you supposedly need. Hair analysis has limited value (mainly in forensic medicine) in the diagnosis of heavy metal poisoning, but it is worthless as a screening device to detect nutritional problems. In fact, a deficiency in the body may be accompanied by an *elevated* hair level. If a hair analysis laboratory recommends supplements, you can be sure that its computers are programmed to recommend them to everyone.

Several years ago Dr. Stephen Barrett sent hair samples from two healthy teenagers under different assumed names to thirteen commercial hair analysis laboratories. The reported levels of most minerals varied considerably between identical samples sent to the same laboratory and from laboratory to laboratory. The labs also disagreed about what was "normal" or "usual" for many of the minerals. So even if hair analysis could be useful in nutritional practice, there's no assurance that commercial laboratories perform it accurately.

They suggest that a questionnaire can be used to indicate whether you need dietary supplements.

No questionnaire can do this. A few entrepreneurs have devised lengthy computer-scored questionnaires with questions about symptoms that could be present if a vitamin deficiency exists. But such symptoms occur much more frequently in conditions unrelated to nutrition. Even when a deficiency actually exists, the tests don't provide enough information to discover the cause so that suitable treatment can be recommended. That requires a physical examination and appropriate laboratory tests. Many responsible nutritionists use a computer to help evaluate their clients' diet. But this is done to make *dietary* recommendations, such as reducing fat content or increasing fiber content. Supplements are seldom useful unless the person is unable (or unwilling) to consume an adequate diet.

Be wary, too, of brief questionnaires purported to provide a basis for determining whether supplements may be

needed. Responsible questionnaires compare the individual's average daily consumption with the recommended numbers of servings from each food group. The safest and best way to get nutrients is generally from food, not pills. So even if a diet is deficient, the most prudent action is usually diet modification rather than supplementation with pills.

They tell you it is easy to lose weight.

Diet quacks would like you to believe that special pills or food combinations can cause "effortless" weight loss. But the only way to lose weight is to burn off more calories than you eat. This requires self-discipline: eating less, exercising more, or preferably doing both. There are 3,500 calories in a pound of body weight. To lose one pound a week (a safe amount), you must eat an average of 500 fewer calories per day than you burn up. The most sensible diet for losing weight is one that is nutritionally balanced in carbohydrates, fats and proteins. Most fad diets "work" by producing temporary weight loss—as a result of calorie restriction. But they are invariably too monotonous and are often too dangerous for long-term use. Unless a dieter develops and maintains better eating and exercise habits, weight lost on a diet will soon return.

They offer phony "vitamins."

With vitamins so popular, why not invent some new ones. Ernst T. Krebs, M.D., and his son Ernst T. Krebs, Jr., invented two of them. In 1949 they patented a substance that they later named pangamate and trade-named "vitamin B-15." The Krebs' also developed the quack cancer remedy, laetrile, which was marketed as "vitamin B-17."

To be properly called a vitamin, a substance must be an organic nutrient that is necessary in the diet, and deficiency of the substance must be shown to cause a specific disease. Neither pangamate nor laetrile is a vitamin. Pangamate is not even a single substance. Different sellers put different synthetic ingredients in the bottle. Laetrile contains six percent of cyanide by weight and has poisoned people.

They warn you not to trust your doctor.

Quacks, who want you to trust them, suggest that most doctors are "butchers" and "poisoners." For the same reason, quacks also claim that doctors are nutrition illiterates. This, too, is untrue.

The principles of nutrition are those of human biochemistry and physiology, courses required in every medical school. Some medical schools don't teach a separate required course labeled "nutrition" because the subject is folded into other courses, at the points where it is most relevant. For example, nutrition in growth and development is taught in pediatrics, nutrition in wound healing is taught in surgery, and nutrition in pregnancy is covered in obstetrics. In addition, many medical schools do offer separate instruction in nutrition.

A physician's training, of course, does not end on the

day of graduation from medical school or completion of specialty training. The medical profession advocates lifelong education, and some states require it for license renewal. Physicians can further their knowledge of nutrition by reading medical journals and textbooks, discussing cases with colleagues, and attending continuing education courses. Most doctors know what nutrients can and cannot do and can tell the difference between a real nutritional discovery and a piece of quack nonsense. Those who are unable to answer questions about dietetics (meal planning) can refer patients to someone who can—usually a registered dietitian.

Like all human beings, doctors sometimes make mistakes. However, quacks deliver mistreatment most of the time.

They claim they are being persecuted by orthodox medicine and that their work is being suppressed.

They may also claim that the American Medical Association is against them because their cures would cut into the incomes that doctors make by keeping people sick. Don't fall for such nonsense! Reputable physicians are plenty busy. Moreover, many doctors engaged in prepaid health plans, group practice, full-time teaching, and government service receive the same salary whether or not their patients are sick—so keeping their patients healthy reduces their workload, not their income.

Quacks claim there is a "controversy" about facts between themselves and "the bureaucrats," organized medicine, or "the establishment." They clamor for medical examination of their claims, but ignore any evidence that refutes them.

Any physician who found a vitamin or other preparation that could cure sterility, heart disease, arthritis, cancer, or

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the like, could make an enormous fortune. Patients would flock to such a doctor (as they now do to those who *falsely* claim to cure such problems), and colleagues would shower the doctor with awards—including the \$700,000+ Nobel Prize! And don't forget, doctors get sick, too. Do you believe they would conspire to suppress cures for diseases that also afflict them and their loved ones?

The Bottom Line

Food quacks benefit only themselves, collecting large fees for public appearances, publications, or "consultant" status to vitamin and health food companies which they sometimes control. Their victims are not only milked financially (for billions of dollars each year), but may also suffer serious harm from vitamin overdosage and from seduction away from proper medical care.

There is nutritional deficiency in this country, but it is found primarily among the poor, particularly among those who are elderly, are pregnant or are small children. These groups need improved diets. Their problems will not be solved by the phony panaceas of hucksters, but by better dietary practices. The best way to get vitamins and minerals is in the packages provided by nature: foods that are contained in a balanced and varied diet. If humans needed to eat pills for nutrition, pills would grow on trees.

The basic rule of good nutrition is moderation in all things. Contrary to the claim that "It may help," the advice of food quacks may harm—both your health and your pocketbook. They will continue to cheat the American public, however, until the communications industries develop sufficient concern for the public interest to attack their quackery instead of promoting it. And if the media cannot develop adequate social conscience on their own, they should be forced to do so by stronger laws and more vigorous law enforcement.

I don't mean to imply that everyone who promotes quack ideas is deliberately trying to mislead people. One reason why quackery is so difficult to spot is that most people who spread health misinformation hold sincere beliefs. For them nutrition is not a science but a religion—with quacks as their gurus. But where health is concerned, sincerity is not enough!

BRIEFS

Health-care reform. The President's Task Force on National Health Care Reform, chaired by Hillary Rodham Clinton, is interested in receiving suggestions. Comments should be sent c/o The White House, Washington, DC 20500.

FDA Commissioner retained. On February 26, 1993, David A. Kessler, M.D., J.D., accepted the Clinton Administration's request to remain as FDA Commissioner. Dr. Kessler, who is probably the most effective individual ever to hold this post, was appointed in the fall of 1990. He is highly respected for increasing FDA efficiency and implementing tough enforcement policies.

FTC strengthening urged. More than 275 consumer advocacy organizations, consumer protection officials, and professors of consumer law and consumer economics have urged President Clinton to "bring new leadership" to the Federal Trade Commission. The letter asks the President to appoint new commissioners from the ranks of state and consumer protection officials, consumer advocacy groups, and consumer affairs professionals. The effort was coordinated by the Center for Science in the Public Interest (CSPI). CSPI has accused the FTC of pursuing "numerous policies, first adopted during the Reagan Administration, that delay enforcement actions, narrow the agency's authority, and reduce the agency's effectiveness."

Breastfeeding "reassurance." Florida has passed the nation's first law stating that a woman who nurses in public can't be prosecuted under any of the state's laws against obscenity, lewdness, or nudity.

Dubious marketing maneuver. The Henkel Corporation, a major vitamin E manufacturer, has distributed a brochure containing excerpts of comments from more than forty physicians who had commented in *Medical Tribune* (a medical newspaper) on their experience with megadoses of vitamin E. Most of the comments had been sent after the editor had asked readers to share their experiences. This type of poll has no statistical significance because it is not a random sampling of opinions and is likely to draw many more responses from believers than from nonbelievers. Nevertheless, *Medical Tribune* published the comments in its "Physician Forum" with the headlines "Most respondents say vitamin E confers benefits," "MDs overwhelmingly for vitamin E at 100 IU," and "Doctor's groundswell for vitamin E at megadoses." Henkel's brochure also includes headlines and excerpts of several newspaper articles that reported favorably on vitamin E research. Many of the claims in the excerpts have little or no scientific support and would not be legal on product labels.

Chaparral dangerous. The FDA has warned consumers not to take herbal products containing chaparral because it has been associated with acute hepatitis. Chaparral has been used in teas, capsules, and tablet preparations purported to "cleanse" the bloodstream, delay aging, and treat certain skin conditions. Cases involving jaundice, abdominal pain, and liver and kidney failure have been reported.

Enzymatic Therapy enjoined. The FDA has obtained a consent decree of permanent injunction barring Enzymatic Therapy, Inc., of Green Bay, Wisconsin, from marketing products with unproven therapeutic claims. The court order also bars the company from manufacturing or marketing 56 listed items unless new promotional material for them is approved by the FDA. In recent years, the company has marketed about 300 formulas containing vitamins, minerals, herbs, amino acids, and/or glandular tissue. For many of these products, literature distributed by the company and lectures given at company-sponsored seminars have contained unproven therapeutic claims that would not be legal on the product labels. During 1990, seminar attendees were given a 158-page looseleaf manual describing how Enzymatic Therapy products could be used to treat more than 80 diseases and conditions. The manual included "protocols" for using products against AIDS, multiple sclerosis, cancer, arthritis, and other serious health problems [NF 7:41-44, 1990]. The FDA was also concerned about reports of serious injuries and one death following use of "nutritional supplements" manufactured by Enzymatic Therapy products [FDA Consumer 27(2):31-32, 1993]. In 1991, after six years of investigation and unsuccessful efforts to secure voluntary compliance, the agency initiated suit to obtain a broad injunction.

Adverse food reactions vs. true allergies. A University of Toronto research team has compared 22 adults with proven food allergies with 23 adults who had adverse reactions that were not confirmable by allergy testing. [Journal of the American Dietetic Association 93:40-44, 1993]. The researchers found that: (1) those with confirmed reactions were younger; (2) the confirmed individuals tended to have specific, immediate reactions, while the unconfirmed individuals had nonspecific delayed reactions to an average of five times as many foods; (3) the unconfirmed group were more apt to blame foods not commonly implicated in proven food allergies; and (4) the unconfirmed group had much higher usage of food supplements, but their overall diet was more in line with current nutrition recommendations. No one in the confirmed group reported an adverse reaction to white sugar, but nine in the unconfirmed group did so. The researchers thought that the unconfirmed individuals had been influenced by the popular news media and literature related to "clinical ecology." (Clinical ecology is a pseudoscience based on the idea that immune-system "overload" leads individuals to become hypersensitive to large numbers of common foods and environmental chemicals.)

Free weight-loss report. "Methods for Voluntary Weight Loss and Control," a 20-page summary of findings of a National Institutes of Health Technology Assessment Conference held last year, can be obtained by calling (301) 496-1143.

Dangerous legislation. Strenuous efforts are underway in New York, Maryland, South Dakota, Florida, and North Carolina to gain passage of laws to: (1) prevent state licensing boards from disciplining health practitioners whose methods are not generally recognized as effective by the scientific medical community; and (2) require appointment of at least one "alternative" practitioner to each board. Bills of this type have been passed in Alaska and Washington.

Notable quote. "You've seen the articles in *The New York Times* and elsewhere over the last six months or a year. Now, does this mark a new day in how the press views the vitamin supplement industry or the nutritional supplement industry? Are we going to be friends? Nope, afraid not. For many journalists the industry still has a lousy reputation, ranking just above the tobacco industry, and no group could possibly sink lower in health writers' estimation than the tobacco group."—Said in a speech by Anastasia Toufexis in July 1992 at the National Nutritional Foods Association (NNFA) annual convention and trade show in Nashville, Tennessee. Ms. Toufexis wrote *Time* magazine's April 6, 1992, cover story, "The Real Power of Vitamins," which has been widely circulated by supplement promoters. NNFA has told its members that the article is "a watershed event for the industry . . . the most positive and powerful public relations tool that the industry has been able to use in years." The group has also sent a copy to all congressional representatives and distributed multiple reprints to NNFA members.

NUTRITION

Forum

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CONFESSIONS OF A FORMER WOMEN'S MAGAZINE WRITER

Marilynn Larkin

Writing about "hot" nutrition topics still has impact. During the decade or so that I wrote for women's magazines, I received much positive feedback from readers.

In 1989, at the height of oat bran's popularity as a panacea to lower cholesterol, the president and chief operating officer of a leading cereal manufacturer estimated that sales of oat-bran cereals would grow to nearly \$600 million annually. I wrote five oat-bran stories that year for various women's magazines. A year later, when a study called oat bran's health-promoting properties into question, sales plummeted 50 percent within a week; at that point, I couldn't give away an article on oat bran.

I also covered other "hot" nutrition topics. But although they appeared on the nutrition page, these articles tended to be either "food-of-the-month" stories (the grapefruit diet, carrot power) or quasi-entertainment pieces that positioned foods as medicine: to fight cancer, strengthen the immune system, lower blood pressure, cut cholesterol, stave off heart attacks, prevent osteoporosis, reduce stress, or improve your sex life.

Earning a living this way was quick, easy, and—for a while at least—fun. I readily recycled material from publication to publication, since all were prone to hopping on the same bandwagons. And editors who saw my work in one magazine often asked me to "do a story like this for *our* audience." It never dawned on me that I might be misleading the public by promoting "food-as-magic-bullet" mythology. I labored under the illusion that by carefully executing assignments according to the editors' parameters, I was informing the public and being a good writer.

What I was really doing was helping to sell magazines by presenting a lopsided point of view: the world according to women's magazine editors. Their world (and my assignments) was shaped primarily by two considerations: providing a "nice environment" for advertisers and making sure readers were not challenged by anything more than simple tips for healthy living. (The word *healthful* does not exist in women's magazine stylesheets.)

Elizabeth Whelan, Sc.D., M.P.H., president of the American Council on Science and Health, thinks women's magazines are shirking responsibility by focusing on trivia and ignoring the devastating effects of cigarette smoking. In a recent op-ed piece in *The New York Times*, she said, "What advice do the magazines offer on how to stay healthy? Here is a sampling: Eat lots of broccoli to ward off cancer . . . take vitamins E and C and beta-carotene; eat garlic to fight colds and flu . . . and eat active-culture yogurt to live longer."

Conflicting views are seldom presented in women's magazines. After all, the "logic" goes, readers might become confused if they actually have to weigh more than one side of a story. Instead, editors usually decide in advance what readers should think, infantilizing readers in the process. This condescending philosophy was a major reason why I decided to get out of the whole business and into writing for physicians. Today, more than two years after making the transition, I savor the fact that I am writing for grown-ups.

How Articles Evolve

One reason why trivial and/or incorrect nutrition advice appear so often is the desire to please the magazines' lifeline: advertisers. Most marketing executives view women's magazines as "products" or "vehicles" that are part of a "marketing package" for their wares. That's where the "nice environment" comes in. Before agreeing to buy space, advertisers want to know what kinds of articles will appear in the magazine—and, particularly, what copy will appear near the ad. "Negative" stories—topics that may upset readers or otherwise interfere with a "feel-good" atmosphere—are routinely rejected. Unfortunately, this means that manuscripts that tell the truth (for example, that the link between specific foods and specific health effects is largely hype) seldom get published.

"Women's magazines are controlled by advertisers in ways that other magazines aren't," *Ms.* co-founder Gloria Steinem told a gathering of writers from the American Society of Journal-

ists and Authors in 1991. She described how women's magazines began as catalogs, with short stories woven in between the ads. The link between advertising and editorial has remained, she said, creating a situation wherein "85 percent of women's magazine copy is really 'unmarked advertorial.'" A few months later, co-founder Patricia Carbine talked about "Advertising and Editorial—The Uneasy Coexistence" to a group of advertising, marketing, and public relations professionals attending a forum on business ethics. "Advertisers are insisting on concessions from women's service magazines that they wouldn't insist on from *Time* or *Newsweek*," she said. According to Ms. Carbine, declining circulation has put even greater pressure on women's publications to continually cross the line between advertising and editorial. Examples include presenting a certain number of recipes that use soup as an ingredient to satisfy a soup advertiser, or refusing to run results of "taste tests" that could offend an advertiser whose product appears at the bottom of the heap.

When I wrote regular nutrition columns for women's magazines, my topics were determined in most cases by advertisements already commissioned or those the publication hoped to bring in. "[A major cereal manufacturer] is advertising in September. Why don't you do a fiber story for that issue?" one editor suggested. "We'd love to get an ad from [a leading manufacturer of lowfat dairy products]. We want you to do a story on foods that are low in fat and high in calcium," said another.

Michael Hoyt, associate editor of *Columbia Journalism Review*, has expressed concern about the blurred boundaries between advertising and editorial content. In the March/April 1990 issue, in an article called "When The Walls Come Tumbling Down," he stated:

From a reader's perspective this confluence of advertising and editorial is confusing: Where does the sales pitch end? Where does the editor take over? ... Magazines of all stripes are suddenly competing to give advertisers something extra—"value added" in ad-world lingo—in return for their business. Many of these extras are perfectly legitimate and have little or nothing to do with editorial content; others fall into a gray and foggy area; still others involve the selling of pieces of editorial integrity, from slivers to chunks to truckloads.

When it comes to nutrition information, the "confusion" Hoyt alludes to is rampant. In a recent interview (*not* for a women's magazine), Richard Rivlin, M.D., of New York Hospital told me: "The public is enormously confused. They need a better understanding of the role nutrition plays with respect to disease. We haven't been doing a very good job of putting things in perspective." Writing in the *Journal of the American Medical Association*, Dr. Rivlin stressed that it is more realistic to think that good nutrition can help delay the onset or reduce the effects of such illnesses as heart disease, stroke, cancer, and diabetes—not that nutrition can prevent or eliminate these disorders entirely. He added that proper nutrition won't do much to protect an individual who continues to smoke cigarettes, drinks excessively, or leads a sedentary lifestyle.

But that type of moderate message seldom makes its way into magazines where "food as medicine" themes are regarded as an essential editorial ingredient. During my tenure as a health and nutrition writer, I wrote everything from the "diet that can save your life" to the "fertility diet" and the "brain power diet." I also wrote about diets to calm your kids, boost their I.Q., and keep them from becoming overweight adults.

The Ingredients of a "Good" Nutrition Article

The other force that drives the editorial content of women's magazines is the desire to grab attention to boost sales. The quickest, surest way to sell article ideas to a women's magazine is to come up with a great cover line. Once I learned this secret, getting assignments was a snap. Whereas some writers labored long and hard over query letters, I would think up titles and bullet them on a page, fleshing out the "story" with one or two sentences. Examples include: "16 Great Food Finds," "20 Hunger-Fighting Foods," "6 Myths That Keep You Fat," and "What Your Snacks Say About You." At least 75% of the topics I proposed in this way ended up as assignments.

Of course, the process also worked in reverse. Editors would call me and say, "We want such-and-such story (naming a provocative headline). You figure out what to put in the article." Although all this smacks of deception, I did have scruples. Despite the jazzy-sounding titles, in most instances I merely repackaged basic nutrition advice into my articles, slipping in qualifiers ("there's no proof as yet") for spurious speculations and liberally peppering my articles with "may" and "they speculate." Does this excuse me? Not really. What astounds me in retrospect is how many "experts" were willing to go along with this charade.

Another essential ingredient in good articles is the voice of authority. As a women's magazine writer, I needed "experts" to validate my editor's point of view. Many "experts" who regularly appear in women's magazines are willing to trade scientific credibility for the opportunity to have their name in print. Some would give me quotes even when the premise of a story made little sense. For example, one women's magazine editor asked me to do a feature article called "Ten Foods to Make You Prettier." I balked, saying that unless an "expert" would corroborate that such a story could include some substance, I wouldn't do it. I was given the name of an "authority"

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at the school of public health of a major university. *She* convinced *me* it could be done and provided me with additional sources. I not only wrote the article but recycled it to other women's publications under such titles as "Eat Your Way to Perfect Skin" and "Beauty Is More Than Skin Deep."

Some "experts" I had quoted once were only too pleased to appear in subsequent articles—but not just the spin-offs. In some cases, they "trusted me" to put quotes in their mouths without even doing another interview or clearing the information with them. At one point, I had a psychiatrist, a psychologist, several nutritionists, an eating disorder specialist, and a dietitian that I could pull out of my hat (by making up quotes based on past interviews) whenever an editor wanted a particular viewpoint substantiated. In other words, I had "instant sources."

I won't speculate on the reasons why people with M.D.s and Ph.D.s (the ones most coveted as sources by women's magazines), who presumably know better, permit themselves to be used in that way. The fact is, many do. Of course, not all have been manipulated. But I'll bet that most are not challenged, either by the writer who interviews them or by others who are quoted.

"Hiring" of Writers

A little-publicized, unethical practice that is more common than writers would like to admit can directly affect what "expert" information gets into a women's magazine and what doesn't. On several occasions, people from public relations agencies representing weight-loss centers and other clients have called me with a proposition. They would "hire" me to write a nutrition story that quoted their client if I would "place" it in a women's magazine. (I was never asked to place a piece in a more "reputable" type of magazine. I guess it was assumed that only women's magazines, and their writers, could be bought.) For an unscrupulous writer, this is an opportunity to be paid twice for the same article. I have consistently refused such work, telling callers that if their client's views were appropriate for something I am writing, they would be used without charge.

In another typical women's magazine scenario, the writer is required to skip attribution altogether—the rationale being that "we want the magazine to be the authority." The result of this abuse of power is that the magazine gives itself a free hand to say whatever it wants, merely by having the writer pepper the article with convenient phrases such as "experts agree," "scientists have found," and "experts say." What experts? The writer and editor, of course.

Style over Substance

Another practice that makes it easier for writers to write for women's magazines than for many other publications—and that has the potential of leaving readers seriously misinformed—is lack of fact-checking. Although some women's magazines call sources to check quotes for accuracy and require writers to provide backup material for statistics, many (I would venture to guess most) don't. I wrote weekly nutrition columns for one women's magazine that preferred to be the authority (in other words, no experts were to be quoted). In more than a year and a half, no one on the magazine's staff ever asked where I got my information. Each column was composed of an article that provided a good headline, a Q&A that I had made up (including a name and city for the supposed writer), and a "fast fact" pertaining to nutrition (for example, that 40% of consumers eat vanilla ice cream). No one ever asked where my "fast facts" came from. [Editor's note: Fact-checking can improve accuracy, but does not guarantee it. When checkers limit their contact to people mentioned in the article, errors originating from inaccurate or misleading sources may go undetected. The only way to ensure accuracy is expert prepublication review—a process few media outlets utilize.]

In addition to a catchy headline and good sources, the article must "lay out well" on the page. Typically this means using sidebars and boxes, with cute little quizzes ("What's Your Nutrition IQ?"; "Are You An Emotional Eater?"), fascinating facts ("Did You Know..."), or 2-day "starter menus" for special diet stories. It's a plus if the article itself can be done up in an easy-to-swallow format, such as "Your A-Z Guide To Fighting Fat," "Seven Secrets Every Thin Person Knows," or "Nutrition Myths That Keep You Fat." Editors seem to assume that straightforward stories won't be read, that readers must be entertained, and that "text-heavy" pages will intimidate them.

The women's magazine writer must also understand an editor's mandate to "work with the art director." In many cases, this means the writer must include points in the text to validate the accompanying photos. For example, if the art director thinks a story on summer fruit would "look great" accompanied by a photo of bananas, grapefruit, and kiwi fruit, then the writer must make sure these fruits are mentioned in the article. Sometimes the photography is planned or even executed before the article is written.

The power of the art director was carried *ad absurdum* in one article I wrote on eating "mini-meals." I had paid a registered dietitian to plan meals that would meet all the Recommended Dietary Allowances for adult women. Imagine my shock when my editor called to demand that a meal be

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changed to include the foods that the art director thought would "look good on the page." "Luscious strawberries" and "juicy orange slices" would have to replace raisins and bananas!

The final ingredient in a "good" nutrition story is the writing style. Three tones are permitted:

1. Bouncy two-year-old: "Don't wait! Start now on our power-packed, energy-boosting diet."

2. Concerned parent: "Eclairs are tempting, so have one—very occasionally . . . If you do have one, make it your only indulgence that day"; "If you must use white sauce, remember: the thinner the sauce, the thinner *you'll* stay."

3. Pseudosophisticated "friend": "Of course you can diet and lose weight. You've done it before . . . and before that . . . but each time the pounds you shed creep back, causing you to groan with disappointment when you step on the scale. Yet we all know women whose weight rarely fluctuates more than a pound or two and former fatties who managed to lose weight and *keep it off* for good . . . Now, we bring you the *real* secrets behind their success."

Once a writer has these chatty tones down pat, she simply asks which style the editor wants, and bingo! Another successful assignment!

No Journalistic Skills Required

What probably helped me most in becoming a successful women's magazine writer was the fact that I had no journalism training whatsoever. I have never taken a writing course in my life.

In 1980, I went into business for myself as a freelance public relations person for various agencies in New York City. The skills I acquired made it easy to shift from press kits into women's magazine writing. These included: (1) the ability to write headlines and opening paragraphs that were punchy and attention-grabbing; (2) an unquestioning attitude towards "experts"; and (3) the ability to produce unfailingly upbeat, inoffensive copy.

Writing press kits for new diet pills, migraine medicines, and blood pressure drugs, for example, required me to digest complex information and spew it back in easy-to-swallow, bite-size pieces, rarely using words of more than one syllable and remaining as one-dimensional as possible (sound familiar?). Snappy headlines and subheads were more important than hard information—after all, my primary responsibility was to help ensure that our material wasn't hurled immediately into the "circular file."

I made my first women's magazine contacts when pitching editors with story ideas that would include whatever clients I happened to be handling at the time. If the editors wanted more, I would send a press kit or bulleted list of article ideas that could be built around the client. Some of the "low-end" women's magazines willingly take articles provided by public relations firms, which I promptly produced for them. Several even gave me bylines—a joy to someone starting out in the field.

These assignments, paid for by the public relations

agencies I worked for, provided me with "clips" which I then used to approach larger publications. Soon editors of women's magazines were asking me to write for them on assignment. Within a year, I had so much magazine work that I stopped doing public relations work altogether.

After a number of years playing at this kind of writing, I grew incredibly bored. Women's magazines like to pigeonhole writers (e.g., "health writer," "travel writer," "money writer"). Even though I managed somewhat to defy definition by writing in all three of these categories, editors who gave me "regular work" really wanted me to write the same stories issue after issue, year after year: How to shed five pounds in five days; Think yourself thin; De-stress yourself; Eat right over the holidays; Get in shape for summer; How to stick to your diet while eating out; Why your food diary is your best friend, etc. etc. These are women's magazine "staples"—the stories readers presumably want to read over and over.

Perhaps it's true. Maybe all those women out there really do want to read that stuff. But if that's the case, at least I have the satisfaction of knowing I no longer contribute to the propaganda that feeds such a mindset. And I can't help but believe that women's magazine readers are capable of taking in a healthy dose of hard information, meaningful speculation, and controversy—about food, nutrition, health, life—if their favorite magazines would only make the effort, and take the risk, of presenting them.

This article is based on my experiences in writing for more than a dozen women's magazines and talking with fellow journalists. There is no question that some women's magazines have more editorial "depth" than others. Those that cater to "educated" women generally offer less simplistic-sounding articles than those catering to "the secretary in Middle America." And magazines with bigger editorial budgets are apt to subject articles to more scrutiny than those with small budgets and little money for editorial content. Nevertheless, all operate under pressure from the market forces I have described.

Ms. Larkin is a freelance writer in New York City. In 1985, she received a first-place award for consumer journalism from the National Press Club. Her most recent work is *What You Can Do About Anemia* [Dell Publishing, 1993].

HELP FIGHT QUACKERY

The National Council Against Health Fraud (NCAHF) serves as a clearinghouse on quackery, health fraud, and misinformation. It has more than 1,000 members and has chapters in 13 states. Membership is open to anyone who supports the group's beliefs and purposes. Members receive a bimonthly newsletter, ready access to printed information on hundreds of topics, and discounts on antiquackery publications. The cost is \$20 for regular membership and \$30 for professional membership. NCAHF's address is P.O. Box 1276, Loma Linda, CA 92354. (Telephone: 909-824-4690)

ASSAULT ON FDA CONTINUES

Stephen Barrett, M.D.

The FDA and the supplement industry have been locked in a struggle for more than 25 years. During the mid-1960s, when the FDA attempted to ban various misleading claims, the industry organized a campaign to weaken the agency's jurisdiction over supplement products. The campaign resulted in passage in 1976 of the Proxmire Amendment to the Food, Drug, and Cosmetic Act. The amendment, which one FDA commissioner called "a charlatan's dream," prevents the FDA from regulating vitamins as drugs based on dosage alone. The FDA is still free to regulate supplement products for which therapeutic claims are made—but most manufacturers keep claims off their labels and rely on retailers and media outlets to make the claims for them. The FDA has also attempted to regulate nonvitamin "supplement" products, such as evening primrose oil, black currant oil, coenzyme Q₁₀, and germanium, on grounds that they are unapproved food additives. Courts have upheld this theory in some cases but rejected it in others.

In 1990, Congress enacted the Nutritional Labeling and Education Act, which required the FDA to adopt sweeping new regulations for food labeling. Shortly before the Act's passage, Senator Orrin Hatch (R-UT) engineered an amendment calling for special consideration of dietary supplements and "other similar substances" such as various seed oils, enzymes, amino acids, and herbal tinctures. In 1991, after the FDA convened a Dietary Supplement Task Force, the health-food industry became alarmed that the task force would recommend stopping over-the-counter sales of amino acids, herbs, and other "supplement" products that are really intended for therapeutic purposes [NF 9:9-14, 1992].

Early in 1992, the supplement industry formed the Nutritional Health Alliance to campaign against increased regulation and to oppose bills to strengthen FDA's ability to police the marketplace. In December 1992, bolstered by a vigorous letter-writing campaign, Senator Orrin Hatch (R-UT) gained passage of the Dietary Supplement Act of 1992, which prevents the FDA from issuing new regulations for supplements until the end of 1993. The act also requires the Department of Health and Human Services, the General Accounting Office, and the Office of Technology Assessment to produce certain reports that the industry hopes will support its position that "supplement products" should be minimally regulated.

In April 1993, bills titled the Dietary Supplement and Health Education Act of 1993 were introduced by Senator Hatch and Representative Bill Richardson (D-NM). Hatch's version (S. 784) defines "dietary supplements" as vitamins, minerals, herbs, amino acids, and other substances intended "to supplement the diet by increasing the total diet intake." (This definition covers everything the health-food industry would like to call a supplement.) The bill would also (1) prevent the FDA from classifying such products as drugs or food additives, regulating their dosage, or making them available only by prescription; (2) permit manufacturers to make therapeutic claims based on

flimsy evidence; and (3) stall most FDA regulatory actions by permitting manufacturers who receive a warning letter to protest to the Department of Health and Human Services or seek court review. Richardson's version (H.R. 1709) is similar but not quite as restrictive. If either bill passes, the FDA's ability to protect consumers from fraudulently marketed "nutrition" products will be severely weakened.

To support these bills, proponents are generating mail from "health food" manufacturers, retailers, and distributors, as well as from health-food store shoppers, customers of mail-order companies, multilevel distributors, "natural health" practitioners, and bodybuilding and fitness enthusiasts who use supplements. To fire up their troops, proponents are portraying the FDA as a Gestapo-like agency and are urging consumers to "write to Congress today or kiss your vitamins goodbye!" The campaign's leaders want legislators to believe that the outpouring of mail represents a grass-roots effort by consumers who wish to preserve "freedom of choice." I suspect, however, that most of the mail will come from individuals who have an economic stake in the sale of supplements.

The proposed bills would also establish a National Institutes of Health Office of Dietary Supplements, whose duties would include coordinating and promoting research on "the benefits of dietary supplements in maintaining health and preventing chronic disease and other health-related conditions" and advising the FDA on dietary supplement issues. Establishment of the NIH Office of Alternative Medicine has been trumpeted by "alternative" proponents as "government and scientific recognition" of their methods [NF 10:1-5, 1993]. An NIH Office of Dietary Supplements would undoubtedly be abused in the same way by supplement promoters.

In a speech from the Senate floor, Hatch stated that the FDA has "repeatedly attempted to impose unnecessarily stringent standards that would leave many if most supplement companies with no practical choice but to close their doors." As a result, he claimed, "consumers are left uninformed and the nation pays millions of dollars for health care that could have been saved through disease prevention."

Hatch's idea that FDA regulation leaves consumers uninformed is ludicrous. The supplement industry maintains a never-ending flow of information (most of it misleading) through talk shows, books, health-food magazines and newsletters, public relation firms, oral claims by retailers, and other channels. The idea that its strategies would lower health-care costs is even more ridiculous. Although some of its promoters recommend a diet low in fat and high in fiber, others recommend diets that are unbalanced or nutritionally inadequate. Although some people can benefit from taking supplements, virtually everyone connected with the industry recommends them unnecessarily and/or inappropriately. Even worse, its leaders typically oppose proven public health measures (fluoridation, pasteurization of milk, immunization, and food irradiation).

BRIEFS

Clinical ecology blasted again. "Clinical ecologists" allege that large numbers of people have immune system derangements that increase their sensitivity to low levels of common substances and produce multiple symptoms. They label the condition they postulate "multiple chemical sensitivity (MCS)," "environmental illness," and with several other terms not recognized by the scientific community. The American Medical Association Council on Scientific Affairs has concluded that "until . . . accurate, reproducible, and well-controlled studies are available . . . multiple chemical sensitivity should not be considered a recognized clinical syndrome. Based on reports in the peer-reviewed scientific literature . . . (1) there are no well-controlled studies establishing a clear mechanism or cause for [MCS]; and (2) there are no well-controlled studies providing confirmation of the efficacy of the diagnostic and therapeutic modalities relied on by those who practice clinical ecology" [JAMA 268:3465-3467, 1992]. Reprints can be obtained from the Council at 515 N. State St., Chicago, IL 60610.

Omnitrition sued. A class action suit has been filed against Omnitrition, a multilevel company affiliated with Durk Pearson and Sandy Shaw, authors of *Life Extension*. The suit charges that the company exaggerated the earnings potential of new distributors.

Health food store sales. *Health Foods Business* estimates that 39.2% of sales in health food stores last year were for vitamins and other supplements. Based on its annual survey, the magazine estimated that 7,500 stores grossed \$1.48 billion for these products, up 4.2% from 1991. Total sales for all products were \$3.79 billion (down 0.25%), including \$633 million for herbs and herbal teas (down 3.2 %) and \$110 million for books (up 1%). Homeopathic remedies accounted for 10.9% of the vitamins/supplements category.

Folic acid and pregnancy. The U.S. Centers for Disease Control and Prevention (CDC) has recommended that all women who are capable of becoming pregnant should consume 0.4 mg of folic acid per day to reduce the risk of having a pregnancy affected with spina bifida or other neural tube defects [JAMA 269:1233-1238, 1993]. CDC's report noted that because the effects of higher intakes are not well known, care should be taken to keep total consumption under 1 mg per day because too much folic acid can interfere with early diagnosis of pernicious anemia in people unable to absorb vitamin B₁₂. The estimated average consumption of folic acid is about 0.2 mg per day, but women who select foods consistent with the U.S. Dietary Guidelines and the U.S. Dietary Pyramid are likely to consume 0.4 mg or more per day. Dr. Victor Herbert, who for many years has been recommending folate supplementation during pregnancy, thinks that the prudent level during pregnancy is probably 0.5 mg/day, with some derived from a supplement of less than 0.4 mg per day [Nutrition Today 27(6):30-33, 1992].

Home cholesterol test questioned. Marketing will soon begin for the Accumeter Cholesterol Self-Test, a test recently approved by the FDA for measuring one's total blood cholesterol level. An American Heart Association official has expressed concern that people who find an elevated value may engage in inappropriate self-treatment. The proper response is further testing and interpretation by a physician.

Diet promotions clipped. The attorneys general of Minnesota and Wisconsin settled charges that *Mega Thin 100*, which was sold over-the-counter in pharmacies, had not been proven safe and effective for weight loss. According to the attorneys general, the company falsely claimed in newspaper ads that the pills would inhibit sugar absorption and would reduce weight without dieting or giving up favorite foods. A \$3,000 penalty was split between the two states. The Minnesota attorney general also settled a case requiring Mid-America Weight Loss Centres, doing business as Jenny Craig Weight Loss Centres, to make permanent changes in its advertising and sales presentation. The case involved charges that Jenny Craig personnel had made unsubstantiated claims that 93% of their customers had achieved permanent weight loss. The settlement prohibits the company from misrepresenting its success rates or using the word "permanent" in the name of its maintenance program. The company also paid \$30,000 into the state's consumer education fund.

Vitamin E update. Two large studies have found that supplementation with 100 IU or more vitamin E is associated with fewer deaths from heart disease [New England Journal of Medicine 328:1444-1449, 1450-1456, 1993]. One study involved 87,245 female nurses followed for up to eight years; the other involved 39,910 men followed for four years. A similar association was not found with vitamin C or beta-carotene. Reprints can be obtained from Meir J. Stampfer, M.D., Channing Laboratory, 180 Longwood Ave., Boston, MA 02115 (for study of women) and Eric B. Rimm, Sc.D., Dept. of Nutrition, Harvard School of Public Health, 665 Huntington Ave., Boston, MA 02115 (for study of men). An accompanying editorial by Daniel Steinberg, M.D., Ph.D., cautioned that large, long-term double-blind clinical trials are needed to prove that vitamin E supplementation is actually beneficial [NEJM 328:1487-1489, 1993]. Dr. Steinberg also warned that such supplementation has not been proved risk-free and that "before we lend our imprimatur to the widespread use of a still unproved treatment, one that requires the patient only to pop a few pills, we should ask how many patients will slack off on adherence to better-established, but somewhat onerous, preventive measures such as a cholesterol-lowering diet, regular exercise, and smoking cessation." It has been postulated that vitamin E can help prevent atherosclerosis by interfering with the oxidation of low-density lipoproteins (LDL). Dr. Steinberg expressed hope that, within a few years, questions about vitamin E supplementation will be settled by studies now under way.

Diet survey. The June 1993 issue of *Consumer Reports* summarizes a survey of 95,000 of its readers who have tried to lose weight, including about 19,000 who had used a commercial diet program. The survey found that many people lost weight, but most gained it back within two years. The average respondent who used a commercial program followed it for about six months, lost 10 to 20 percent of starting weight, gained almost half of that weight within six months and more than two thirds after two years. The survey also found that many people who used commercial programs were not overweight. Weight Watchers received the highest reader-satisfaction score.

Health food store investigation. Armed with a hidden camera, "Inside Edition" reporters asked retailers at four stores in New York City what they would recommend for (1) fatigue and headaches, (2) blurred vision, (3) arthritis, (4) strengthening the immune system, (5) improving memory, (6) "cleansing the blood," and/or (7) shortness of breath of a "grandmother who just had bypass surgery." Products were recommended in response to every question. When asked for something that could help people with AIDS, one GNC store manager recommended *NAC*, an amino acid product that he said was one of the store's top sellers. He also said that *NAC* was "supposed to help block the chemical inhibiting the growth of the virus" and did not have the toxic side effects of *AZT*. When confronted later, however, he denied recommending the product for AIDS. It is illegal for retailers to prescribe or to make unproven therapeutic claims for their products. During the "Inside Edition" program, Dr. Stephen Barrett suggested that without illegal prescribing the "health food" industry might not survive.

FTC hits bee pollen. The CC Pollen Company, of Phoenix, Arizona, and its owners (Bruce R. Brown, Carol M. Brown, and Royden Brown) have agreed to pay \$200,000 to settle charges that they falsely represented that bee pollen products could produce weight loss, permanently alleviate allergies, reverse the aging process, and cure, prevent, or alleviate impotence or sexual dysfunction. The company and its owners were also charged with falsely stating that bee pollen products are an effective antibiotic for humans and cannot result in an allergic reaction. Under the agreement, the company and its owners would be prohibited from making all of these claims and would be required to have scientific evidence to support any other health-related claims about any other product for human consumption. Some of the false claims were made in "infomercials" that were misrepresented as news or documentary programs, even though they were paid ads. During one infomercial, entitled "TV Insiders," host Vince Inneo falsely implied that the program was part of a series of independent investigations. The program featured an interview "by satellite" with Gary Null, a New York-based author and talk-show host, who was introduced as "Dr. Gary Null... the authority on health and nutrition" even though he did not have an accredited doctoral degree at that time. The program also cited an article in *Parade* magazine in which President Reagan had attributed his youthfulness to bee pollen. The products offered during the infomercial were *Bee-Young, Pollenergy* (to "restore missing energy"), *Royal Jelly* ("to keep sexually active at any age"), *President's Lunch*, and *First Lady's Lunch Bar*. Although the consent agreement does not constitute an admission of wrongdoing, violating it can trigger a civil penalty of up to \$10,000 per day.

SHARK CARTILAGE IN THE NEWS

Shark cartilage has been called to public attention by a "60 Minutes" program focused on the theories of biochemist William I. Lane, Ph.D., author of *Sharks Don't Get Cancer*. Narrator Mike Wallace began by calling attention to the book and stating that Lane says that sharks don't get cancer. The program focused on a Cuban study of twenty-nine "terminal" cancer patients who were given shark-cartilage preparations. Although the program contained many disclaimers, it was clearly promotional.

Wallace visited the site of the experiment, filmed several of the patients doing exercise, and said that most of the patients felt better several weeks after the treatment had begun. (The fact that "feeling better" does not indicate whether a cancer treatment is effective was not mentioned.) Two American cancer specialists then said that the results were intriguing. One, who aligned with the health-food industry, said that three of the patients appeared to have improved. The other, who appeared to be solidly scientific, noted that evaluation was difficult because many of the x-ray films were of poor quality, but he thought that a few tumors had gotten smaller. (The reasons why this might not be significant were not mentioned.) After

noting that shark cartilage was sold in health-food stores, Wallace remarked on the inadvisability of "going to the nearest health-food store" and was seconded by the radiation therapist who said it would be foolish to do so unless all else had failed.

About two weeks before the program aired, a leading manufacturer of shark-cartilage capsules informed health-food stores about the program and advised stocking up on their product. Following the program, other manufacturers began marketing shark cartilage products and referring to the program in their advertising. The leading distributor of books to health-food stores has advertised *Sharks Don't Get Cancer* with the headline: "As featured on 60 Minutes. Finally, What The World Has Been Waiting For . . . A Major Cancer Breakthrough."

Like all animals, sharks *do* get cancer. Lane's book actually says so, although it claims that the number is "insignificant." The preface notes that "while *ALMOST No Sharks Get Cancer* might have been a bit more accurate, it would have been a rotten title." The Smithsonian Institution's *Registry of Tumors in Lower Animals* indicates that sharks even get cancers of their cartilage (chondromas).

BOOK REVIEWS

Stephen Barrett, M.D.

Title: Family Guide to Natural Medicine (1993)

Editor: Alma E. Guinness

Publisher: Reader's Digest Association, Pleasantville, NY 10570

Price: \$30.00 (hardcover) plus \$4.00 postage/handling.

This beautifully crafted 416-page book was prepared by an editorial staff of about thirty people, with help from 26 consultants and contributors whom the editors regarded as experts in their respective fields. It contains more than 300 beautiful color photographs and many interesting accounts of the history of "natural" methods.

The introduction was written by Andrew Weil, M.D., the book's chief consultant, who acknowledges that many of the methods "remain unproved, controversial, even suspect in the eyes of conventional doctors." He predicts "ever-widening interest in natural and preventive medicine," and states that in his clinical practice, he is 40 or 50 times as likely to prescribe a herbal remedy rather than a prescription drug.

The book's first chapter ("The Realm of Natural Medicine") presents the unscientific theories of Chinese medicine, Ayurvedic medicine, homeopathy, "whole-body healing," chiropractic, naturopathy, vision therapy, and iridology as though they are facts. While noting here and there that "orthodox physicians" do not accept these theories, the book uses weasel words and double-talk to weaken critical comments. Regarding iridology, for example, it states that "by and large, orthodox physicians reject the theory that the iris provides extensive information on illness or disease." Iridologists claim that markings in the colored portion of the eye can be used to diagnose problems throughout the body. The correct view is that every scientific physician familiar with iridology regards it as utter nonsense, and that when iridologists are tested under scientific conditions, they invariably flunk the test.

Chapters 2 to 4, which cover "The Mind and Health," "Bodywork," (massage therapies), and "Movement," provide a hodge-podge of useful, possibly useful, and unlikely-to-be-useful methods. While there is little doubt that a massage can be relaxing, for example, there is no reason to believe that acupressure can "free energy blocks." Chapter 5 ("Eating Well") includes two pages on the ying and yang of macrobiotics, fifteen pages of mostly useless information about vitamins and minerals, and all of two paragraphs on low-fat eating. Chapter 6 ("Herbs") includes tid-bits about herbs plus several pages of drivel about aromatherapy and Bach Flower Remedies. (The latter are scented products claimed to cure disease by dissipating "negative feelings" that block the healing process.) The final chapter summarizes the editor's views of "orthodox," "commonsense," and "natural medicine" options for the treatment of about 50 common ailments. This section intertwines practical advice with nonsense.

The stated aim is to examine "alternative" therapies "under the lens of objective inquiry." The book does nothing of the sort. Practices that are fraudulent or quack—and there are

plenty—are not identified as such. Nonsensical theories are presented with little or no criticism, implying that they are plausible. Brief discussions of "innovation versus quack cures" and "how to avoid quacks and frauds" give mere lip service to these topics. The best thing I can say is that the book provides historical information that might be useful to professionals with a scholarly interest in quackery. Under expert guidance, it might also be useful as a sourcebook for teaching how to dissect fact from fiction in deceptive writings. It is unfortunate that a basically reliable publisher will henceforth be associated with misleading advice.

Title: Therapeutic Claims in Multiple Sclerosis (1992)

Authors: William A. Sibley, M.D., and the Therapeutic Claims Committee of the International Federation of Multiple Sclerosis Societies

Publisher: Demos Publications, Inc., 386 Park Avenue South, New York, NY 10016

Price: \$13.95 (softcover), \$19.95 (hardcover), plus \$4.00 postage/handling

This 212-page classic is divided into six sections. The first section discusses the nature of multiple sclerosis, how the diagnosis should be made, and the natural history of the disease. The second details the difficulties in evaluating methods for treating a disease whose course varies so much from one individual to another. The third discusses promising new treatments for the acute stages, while the fourth covers methods used to prevent worsening of the patient's condition. The fifth covers symptomatic treatment and general management. The final section, "Miscellaneous Empirical Treatments," analyzes 56 unproven products and/or regimens. Each analysis includes a description of the method, the proponents' rationale, a scientific evaluation, estimate of risks and/or costs, and conclusions.

Nutritional approaches are covered in the sections on general management and empirical treatments. Supplementation with polyunsaturated fatty acids and fish oils is regarded as "investigational" because the evidence for which is considered conflicting. Low-fat diets are regarded as unproven because there is no generally accepted rationale for their use and they have not been tested by properly controlled studies. Similar conclusions were reached for allergen-free diets, the Kousmine Diet, the gluten-free, raw food (Evers) diet, the McDougall Diet, the pectin- and fructose-restricted diet, liquid VLC diets, and the sucrose- and tobacco-free diet. Megavitamin and megamineral therapies are regarded as unproven and potentially hazardous. Supplementation with cerebrosides, aloe vera, or enzymes is also regarded as unproven.

This book can be of great value to multiple sclerosis patients (and families) who are uncertain about therapeutic avenues to pursue. It will also be useful to health professionals who must advise people about treatment alternatives, both proven and unproven.

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NEW FOOD LABELING REGULATIONS ISSUED

Stephen Barrett, M.D.

On January 6, the FDA and the U.S. Department of Agriculture (USDA) published final regulations that provide for consistent, scientifically based labeling for almost all processed foods [Federal Register 58(3):631-691, 2065-2964, 1993]. The rules, intended to provide more meaningful information about the nutritional value of foods, constitute the most extensive food labeling reform in the country's history.

To arrive at the new rules, the FDA held three public meetings, reviewed public comments, and produced final rules in more than 20 separate proceedings. In addition to oral comments, the agency received more than 40,000 others in writing, the largest number ever received in response to an FDA proposed regulation. About 30,000 were form letters from organized campaigns. The USDA received 1,109 comments, many of which asked that the FDA and USDA label requirements be harmonized.

Modern nutrition labeling began in 1974 when the two agencies established voluntary rules and began requiring nutrition information on labels of products that contain added nutrients or that carry nutrition claims. Other than requiring sodium and permitting potassium to be added to the voluntarily listed components, the rules have remained essentially unchanged.

The new rules provide a basic format for the nutrition panel, which will be titled "Nutrition Facts." This panel must not only include the nutrient contents of the product, but must indicate how the amounts of certain ingredients are related to typical daily caloric intakes of 2,000 or 2,500 calories. The new labels must also disclose the amount per serving of saturated fat, cholesterol, dietary fiber, and other nutrients of health concern to today's consumers. Other provisions include consistency of serving sizes; definitions for core descriptive terms, such as "light," "low fat," and "high fiber"; and provisions for health claims for prepared foods containing certain nutrients. To devise serving sizes, foods were grouped into 139 categories and an amount customarily eaten per occasion was established for each category and translated into label serving sizes.

The FDA estimates that about 90% of processed food will carry nutrition information. In addition, uniform point-of-purchase nutrition information will accompany many fresh

foods, such as fruits, vegetables, raw fish, meat, and poultry. Although this is voluntary, it will be mandated if voluntary compliance is found to be insufficient.

Changing the labels of hundreds of thousands of products is expected to cost the food industry (and ultimately consumers) between \$1.4 and \$2.3 billion over the next 20 years. However, the benefits to public health—measured in monetary terms alone—are estimated to greatly exceed the costs. These expected benefits include decreased rates of coronary heart disease, cancer, osteoporosis, obesity, high blood pressure, and allergic reactions to food.

The proposed rules were spurred primarily by the Nutrition Labeling and Education Act (NLEA) of 1990, which requires nutrition labeling for most foods and authorizes FDA-approved health claims on food labels. Although meat and poultry products, which are regulated by the USDA, were not covered by NLEA, USDA has issued regulations that are similar to those of the FDA. Manufacturers have until May 1994 to comply with most of the new requirements, but changes on some product labels will appear sooner. Both agencies will conduct an extensive educational campaign to help consumers get maximum benefit from the new food labels.

"Daily Values"

As part of its effort to make nutrition information more practical and easier to understand, the FDA has devised a new system called Daily Values (DVs). These values combine the information from two proposed sets of reference values for nutrients: Daily Reference Values (DRVs) and Reference Daily Intakes (RDIs)—neither of which will appear on the labels themselves.

DRVs are for nutrients, such as fat and cholesterol, for which no set of standards previously existed. RDIs are intended to replace the U.S. RDAs (Recommended Daily Allowances), which were introduced in 1973 as reference values for vitamins, minerals, and protein in the labeling of foods and drugs.

The U.S. RDAs (and proposed RDIs) are based on the

DEFINITIONS OF FOOD LABEL TERMS

Term	Definition Proposed in Federal Register, January 6, 1993
Free or without	An amount that is nutritionally trivial and unlikely to have a physiological consequence.
Calorie free	Fewer than 5 calories per serving.
Sugar free	Less than 0.5 grams per serving of monosaccharides and/or disaccharides.
Sodium free or salt free	Less than 5 mg per serving. A claim made for a food normally free of or low in a nutrient must indicate that the situation exists for all similar foods. For example: "spinach: a low-sodium food." Labels of foods containing insignificant amounts of ingredients (such as baking soda or sodium ascorbate) commonly understood to contain sodium must use an asterisk to refer to a note below the ingredient list that the amount of added sodium is trivial.
Low or little	Low enough to allow frequent consumption without exceeding the dietary guidelines. Generally less than 2% of the Daily Value for the nutrient. A claim of "very low" can be made only about sodium.
Low sodium	Less than 140 mg per serving and per 100 grams of food (a little less than half a cup).
Very low sodium	Less than 35 mg per serving and per 100 grams of food.
Low calorie	Less than 40 mg per serving and per 100 grams of food. May be used for meal-type products with 120 calories per 100 grams of food.
Light (or lite)	Contains 1/3 fewer calories than the referenced food. Products deriving more than half their calories from fat must have their fat content reduced by 50% or more with a minimum reduction of more than 3 grams per serving. The percentage of reduction of calories and/or fat must be specified immediately proximal to the claim. May not be used for foods or nutrients meeting the requirements for a "low" claim. The term "light" can be used for a salt substitute if it contains at least 50% less sodium than ordinary table salt. Other use of "light" must specify if it refers to look, taste or odor, unless the meaning of the term is obvious and fundamental to the product's identity. (Thus, light brown sugar would require no explanation).
Light in sodium	Contains at least 50% less sodium than an appropriate comparison food.
Less (or fewer), lower, or reduced	Contains at least 25% less of a nutrient (or calories) than the referenced food. May not be used for foods or nutrients meeting the requirements for a "low" claim.
More	Contains at least 10% more of a desirable nutrient than does a comparable food. The terms "fortified," "enriched," or "added" may be used instead under appropriate circumstances.
High, rich in, or excellent source	Contains 20% or more of the RDA or DRV.
Good source	Contains 10-19% of the RDA or DRV. Can also be described as "contains" or "provides."
Fat free	Less than 0.5 grams of fat per reference amount and serving size, and no added ingredient that is a fat or oil. The term "fat free" may not be used for a food that is inherently free of fat unless there is an accompanying statement that all foods of this type are inherently fat free. Labels of foods containing insignificant amounts of ingredients (such as nuts) commonly understood to contain fats are permitted to use an asterisk to refer to a note below the ingredient list that the amount of added fat is trivial.
Low fat	Contain 3 grams or less of fat per reference amount, per serving size and per 100 grams of product. May not be used for foods inherently low in fat unless accompanied by a disclaimer that all foods of this type are inherently low in fat. May be applied to meal-type products if the meals also derive 30% or fewer of their calories from fat.
(Percent) fat free	Only for foods that meet the FDA definition of low fat.
Reduced or less fat	Reduced fat content by 25% or more, with at least 3 grams less per reference amount and per serving size.
Saturated fat free	May be used for all products that are fat free. Labels of products that are not fat free but contain less than 0.5 grams of saturated fat per reference amount must disclose the amount of total fat.
Low in saturated fat	1 gram or less per serving, with not more than 15% of calories from saturated fat and 1% or less of total fat as trans fatty acids. Labels of foods containing insignificant amounts of ingredients commonly understood to contain saturated fats must state that the amount of saturated fat is trivial. Meal-type products must also derive less than 10% of their calories from saturated fat.
Reduced or less saturated fat	At least 25% less saturated fat per serving than the reference food. When these terms are used the label must indicate the % reduction and the amount of saturated fat in the reference food. The reduction must be at least 1 gram.
Cholesterol free	Less than 2 mg of cholesterol and 2 grams or less of saturated fat per serving. Labels of foods containing insignificant amounts of ingredients commonly understood to contain cholesterol must state that the amount of cholesterol is trivial.
Low in cholesterol	20 mg or less per serving and per 100 grams of food, and 2 grams or less of saturated fat per serving.
Reduced or less cholesterol	At least 25% less cholesterol per serving than its comparison food. The label of a food containing more than 13 grams of total fat per serving or per 100 grams of the food must disclose that fact.
Fresh	Can only be linked to raw food, food that has not been frozen, heated, processed, or preserved. (Low-level irradiation is permissible.)
Freshly	Can be used with a verb such as "prepared," "baked" or "roasted" if the food is recently made and has not heat-processed or preserved. "Freshly frozen" may be used for foods that are quickly frozen while fresh.
Lean	Meat or poultry product with less than 10 grams of fat, less than 4 grams of saturated fat, and less than 95 mg cholesterol per 100 grams.
Extra lean	Meat or poultry product with less than 5 grams of fat, less than 2 grams of saturated fat and less than 95 mg cholesterol per 100 grams.

1968 Recommended Dietary Allowances (RDAs) set by the National Academy of Sciences. The main reason for the change in terminology is to avoid confusion due to the similarity of the terms "RDA" and "U.S. RDA." A second reason is that the FDA believes that most of the U.S. RDAs are higher than necessary.

Despite the new name, the actual values (except for protein) will remain the same for the near future. New values proposed in 1991 could not be incorporated into the final rules because of the Dietary Supplement Act of 1992, passed last October at the behest of Senator Orrin Hatch (R-UT) and the dietary supplement industry.

DRVs for the energy-producing nutrients (fat, carbohydrate, protein, and fiber) are based on the number of calories consumed per day. For labeling purposes, 2,000 calories has been established as the reference for calculating percent Daily Values. This level was chosen, in part, because it approximates the maintenance calorie requirements of the group most often targeted for weight reduction: postmenopausal women. Where space permits, the label will include information in which selected daily values for both a 2,000- and a 2,500-calorie diet are listed; and manufacturers are permitted to list daily values for other calorie levels.

Regardless of calorie level, the DRVs are based on a diet containing 60% carbohydrate, 10% protein, 30% fat (including 10% saturated fat), and 11.5 grams of fiber per 1,000 calories. The DRVs for cholesterol, sodium, and potassium remain the same regardless of calorie level.

Permissible Health Claims

A "health claim" is defined as any type of communication in labeling that is intended to suggest "a direct beneficial relationship between the presence or level of any substance in the food and a health or disease-related condition." Health claims will be permitted only if (1) a food substance is associated with a disease or health-related condition for which the general U.S. population or an identified subgroup is at risk, (2) the claim is made in the context of the product's relationship to overall diet, (3) the claim is supported by publicly available scientific evidence (including experiments that are well designed and properly conducted), and (4) there is significant agreement among qualified experts that the claims are supported by such evidence. In addition, the claims must be "complete, truthful, and not misleading." The FDA rejected the idea that "preliminary evidence" could be used as a basis for asserting a health claim.

The new rules will permit accurate claims about the relationships between calcium and osteoporosis; sodium and high blood pressure; dietary fat and cancer; dietary saturated fat and cholesterol and the risk of coronary heart disease; fiber-containing foods and cancer; fiber-containing foods and heart disease; and foods such as fruits, vegetables, and whole grains that are high in antioxidant vitamins (including vitamin C) and cancer. Government officials believe that this will provide food companies with an incentive to improve the nutritional quality of many types of products.

For each of the seven approved relationships, the FDA has documented the supporting evidence and has proposed model claims that contain the elements required to comply with the new regulations. Manufacturers who wish to use different wording are permitted to petition the FDA for approval. Although FDA approval is not required before alternative wording is used in the marketplace, claims that are not preapproved can trigger regulatory action if the FDA determines that they are false or misleading. The model claims approved in the new rules are:

FRUITS AND VEGETABLES AND CANCER

- "Low-fat diets rich in fruits and vegetables (foods that are low in fat and may contain dietary fiber, vitamin A, and vitamin C) may reduce the risk of some types of cancer, a disease associated with many factors. Broccoli is high in vitamins A and C, and is a good source of dietary fiber."
- "Development of cancer depends upon many factors. Eating a diet low in fat and high in fruits and vegetables, foods that are low in fat and may contain vitamin A, vitamin C, and dietary fiber, may reduce your risk of some cancers. Oranges, a food low in fat, are a good source of fiber and vitamin C."

FIBER-CONTAINING GRAIN PRODUCTS, FRUITS, AND VEGETABLES AND CANCER

- "Low-fat diets rich in fiber-containing grain products, fruits, and vegetables may reduce the risk of some types of cancer, a disease associated with many factors."
- "Development of cancer depends on many factors. Eating a diet low in fat and high in grain products, fruits, and vegetables that contain dietary fiber may reduce your risk of some cancers."

CALCIUM AND OSTEOPOROSIS

- "Regular exercise and a healthy diet with enough calcium helps teen and young adult white and Asian women maintain good bone health and may reduce their risk of osteoporosis later in life."
- [Appropriate for foods exceptionally high in calcium and most calcium supplements]: "Regular exercise and a healthy diet with enough calcium helps teen and young adult women and Asian women maintain good bone health and may reduce their risk of osteoporosis later in life. Adequate calcium intake is important, but daily intakes above about 2,000 mg are not likely to provide additional benefit."

SODIUM AND HYPERTENSION

- "Diets low in sodium may reduce the risk of high blood pressure, a disease associated with many factors."
- "Development of hypertension or high blood pressure depends on many factors. [This product] can be part of a low-sodium, low-salt diet that might reduce the risk of hypertension or high blood pressure."

IMPORTANT ASPECTS OF THE NEW LABEL

The new "Nutrition Facts" panel will be built around a new set of dietary components. The mandatory (underlined> and voluntary components must be placed in the following order: total calories; calories from fat; calories from saturated fat; total fat; saturated fat; stearic acid (on meat and poultry products); polyunsaturated fat; monounsaturated fat; cholesterol; sodium; potassium; total carbohydrate; dietary fiber; soluble fiber; insoluble fiber; sugars; sugar alcohol (e.g., the sugar substitutes xylitol, mannitol, and sorbitol); other carbohydrate; protein; vitamin A; percent of vitamin A present as beta-

carotene; vitamin C; calcium; iron; and other essential vitamins and minerals. If a food is fortified with any of the optional components, or if a claim is made about any of them, the pertinent nutrition information then becomes mandatory. No other types of nutrition components are permitted to appear on the label. (This prevents manufacturers from calling attention to food components that lack nutritional significance or require no special attention from consumers.) Simplified formats are permitted for foods that contain insignificant amounts of seven or more of the mandatory components.

More consistent serving sizes, in both household and metric measures, replace those that used to be set by the manufacturer. The new values are intended to reflect the amounts that people actually eat.

The nutrients required on the nutrition panel are those considered most important to the health of today's consumers, most of whom need to worry about getting too much of certain items (such as fat) rather than too few (as was the case years ago with certain vitamins and minerals).

Conversion guide can help consumers learn caloric value of the nutrients that produce energy (calories).

Nutrition Facts

Serving Size 1/2 cup (114g)
Servings Per Container 4

Amount Per Serving

Calories 260 **Calories from Fat** 120

% Daily Value*

Total Fat 13g **20%**

Saturated Fat 5g **25%**

Cholesterol 30mg **10%**

Sodium 660mg **28%**

Total Carbohydrate 31g **11%**

Dietary Fiber 0g **0%**

Sugars 5g

Protein 5g

Vitamin A 4% • Vitamin C 2%

Calcium 15% • Iron 4%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4



New mandatory components are intended to help consumers wishing to lower the fat content of their diet. However, foods for children under 2 (except infant formula) will not carry information about fat-related components because it is not appropriate to restrict the fat or cholesterol intake of infants or toddlers.

% Daily Value shows how a food fits into the overall daily diet. Some daily values are maximums, as with fat, while others are minimums, as with carbohydrates.

The Daily Values are based on daily diets of 2,000 and 2,500 calories. Individuals should adjust these values to fit their own calorie intake. (Moderately active people consume about 15 calories per day for each pound of body weight.)

DIETARY FAT AND CANCER

- “Development of cancer depends on many factors. A diet low in total fat may reduce the risk of some cancers.”
- “Eating a healthful diet low in fat may help reduce the risk of some types of cancers. Development of cancer is associated with many factors, including a family history of the disease, cigarette smoking and what you eat.”

FRUITS, VEGETABLES, AND GRAIN PRODUCTS THAT CONTAIN FIBER, PARTICULARLY SOLUBLE FIBER, AND RISK OF CORONARY HEART DISEASE

- “Diets low in saturated fat and cholesterol and rich in fruits, vegetables, and grain products that contain some types of dietary fiber, particularly soluble fiber, may reduce the risk of heart disease, a disease associated with many factors.”
- “Development of heart disease depends on many factors. Eating a diet low in saturated fat and cholesterol and high in fruits, vegetables, and grain products that contain fiber may lower blood cholesterol levels and reduce your risk of heart disease.”

DIETARY SATURATED FAT AND CHOLESTEROL AND RISK OF CORONARY HEART DISEASE

- “While many factors affect heart disease, diets low in saturated fat and cholesterol may reduce the risk of this disease.”
- “Development of heart disease depends upon many factors, but its risk may be reduced by diets low in saturated fat and cholesterol and healthy lifestyles.”
- “Development of heart disease depends upon many factors, including a family history of the disease, high blood LDL-cholesterol, diabetes, high blood pressure, being overweight, cigarette smoking and lack of exercise, and the type of dietary pattern. A healthful diet low in saturated fat, total fat and cholesterol, as part of a healthy lifestyle, may lower blood cholesterol levels and may reduce the risk of heart disease.”
- “Many factors, such as a family history of the disease, increased blood and LDL cholesterol levels, high blood pressure, cigarette smoking, diabetes, and being overweight, contribute to developing heart disease. A diet low in saturated fat, cholesterol, and total fat may help reduce the risk of heart disease.”
- “Diets low in saturated fat, cholesterol, and total fat may reduce the risk of heart disease. Heart disease is dependent upon many factors, including diet, a family history of the disease, elevated blood LDL cholesterol levels and physical inactivity.”

The FDA has also acknowledged a benefit for folic acid for women of childbearing age, but has announced that food labeling to that effect must await further study on how to avoid potentially hazardous overuse. Purported relationships that were considered but rejected include omega-3 fatty acids and coronary heart disease; dietary fiber and cardiovascular disease; antioxidant vitamins and cancer; dietary fiber and cancer; and zinc and immune function in the elderly.

The FDA also considered whether to attempt to establish definitions for the terms “natural” and “organic” in food labeling. It concluded that while a definition of “natural” might be useful to consumers, the issue is complicated enough to require a separate rulemaking procedure—which presently is beyond the agency’s resources and priorities. The FDA also decided to defer possible consideration of the term “organic” until the Agriculture Department has set standards as called for by the Organic Foods Production Act of 1990.

The new rules include an interesting provision about disclaimers. The FDA does not believe that health claims for food products should be permitted to include statements about seeking medical advice. The agency is concerned that the appearance of such a claim could mislead consumers to believe that the product possesses therapeutic value and that some consumers might be encouraged to use it for self-treatment rather than seeking appropriate medical attention. The FDA has also cautioned that whether terms like “healthy,” “nutritious” and “wholesome” are health claims will depend upon how they are used.

The FDA continued its policy that any claim that a *single food* (as opposed to overall dietary composition) or *food component* (such as a vitamin, mineral, or other entity said to be a dietary supplement) can be used in the prevention, cure, mitigation, or treatment of a disease or symptom would render the product subject to regulation as a *drug* and would not be appropriate for labeling of a food. However, the regulations published on January 6, 1993, do not cover the labeling of dietary supplements. Senator Hatch’s Dietary Supplement Act of 1992 forced the FDA to delay supplements regulations for several more months.

Dietary Supplements

On June 18, the FDA published final regulations for health claims for dietary supplements [Federal Register 58(116):33690–33751, 1993]. The basic policy will be to subject dietary supplements to the same standards that applies to food in final form. Noting that “a claim linking a nutrient to a specific disease is typically intended to increase intake of the nutrient,” the FDA expressed its desire to ensure that such increased intake would not have adverse health consequences that would negate the claimed benefit.

The proposal defines dietary supplement as “a food, not in conventional food form, that supplies a component to supplement the diet by increasing total dietary intake of that component.” Herbs and nonessential nutrients would be considered foods when marketed primarily for their taste, aroma, or nutritive value, but would be *drugs* if intended to be consumed for a medicinal effect. “Nutritive value means “a value in sustaining human existence by such processes as promoting growth, replacing essential nutrients, or providing energy.” Except for calcium (for osteoporosis), the FDA considers that no other substance currently satisfies the requirements for making a valid health claim on the label of a dietary supplement.

As with foods, dietary supplements are to carry a label headed "Nutrition Facts." Under the proposed rules, "serving size" will be the number of tablets (or capsules, packets, teaspoonfuls, etc.) per serving recommended by the manufacturer, and the term "U.S. RDA," which now appears on supplement labels, will be replaced with "% Daily Value." The actual values (which will be called RDIs instead of U.S. RDAs) will remain the same. However, the FDA has indicated that it will work with the National Academy of Sciences to review the appropriateness of these numbers.

Amino Acids Get Special Attention

Along with its proposed regulations, the FDA released its Dietary Supplements Task Force report, which contains twenty recommendations related to safety and honest labeling. These include: (1) the FDA should use a rulemaking procedure to determine safe levels of daily intake for each vitamin and mineral; (2) capsules and tablets of individual amino acids should be regulated as drugs; (3) other types of "supplements" should be regulated as food additives, which would mean that if a substance has no known nutritive value, the label must say so; (4) the FDA should act against misleading "name claims," including brand names that imply therapeutic benefit; and (5) the FDA should continue to bring actions against "supplements" that are illegally marketed as drugs (intended for unproven therapeutic uses). The task force also urged the agency to establish and implement an educational campaign to provide the public with scientifically objective information about the safety, proper use, benefits, and risks of products.

The FDA's proposed regulations echoed the task force's concern about amino acids: "It is clear that many amino acids are being marketed in violation . . . because they are unapproved food additives, and adequate scientific evidence to ensure their safe use does not exist, or because they are being marketed for therapeutic uses." The proposal asked interested parties to submit data documenting that they are safe and that a legitimate nutritional reason exists for them to continue being marketed as "foods."

Attack on FDA Continues

Although the supplement industry pretends otherwise, a large percentage of its products have no legitimate usage as nutrients and are promoted as therapeutic agents. Since unproven therapeutic claims are not legal on product labels, most claims are promoted through advice in health food stores, other person-to-person contacts, and claims made in books, lectures, articles in magazines and newsletters, and talk-show appearances. Claims that are not directly involved in the sales process are protected by the doctrines of freedom of speech and freedom of the press and are not subject to FDA regulation. In some cases, however, the FDA can protect consumers from wasting money on dubious products by making it illegal to market their ingredients.

The supplement industry has been worried that the FDA would ban individual amino acids and various other types of products that have no legitimate dietary value to consumers. For about two years, the industry has been promoting legislation intended to block the FDA's ability to remove these products from the marketplace [NF 9:9-14, 30, 37, 1992]. Current proposals, introduced by Senator Hatch and Representative Bill Richardson (D-NM), would not only enable worthless products to be marketed but would permit health claims to be based on flimsy evidence and would cripple FDA enforcement efforts [NF 10:21, 1993].

Although the real issue is how to protect consumers from being deceived, the supplement industry and its allies are posing it as a controversy over "freedom." To stir up public support, they have been falsely claiming that the FDA wants to take away their vitamins. One element of their campaign is a videotaped 60-second public service announcement intended to dramatize government interference with people's freedom to take vitamins. The video shows footage from a television program showing a SWAT team, guns drawn, raiding a private home to arrest the owner (played by Mel Gibson), who is located in the kitchen holding a bottle of vitamin C. "It's only vitamins," Gibson protests as he is handcuffed, "vitamin C, you know . . . like in oranges." During the "arrest," viewers are told: "The federal government is actually considering classifying most vitamins and other supplements as drugs. The FDA has already conducted raids on doctors' offices and health food stores. Could raids on individuals be next? Protect your right to vitamins. Call Congress now."

The scenario, of course, is no more realistic than the claims that the "health food" industry makes for most of its products. But if enough people respond to the misrepresentations, Congress may give the industry what it wants.

Dr. Barrett, a psychiatrist, medical editor, and consumer advocate, is a board member of the National Council Against Health Fraud. In 1984, he received the FDA Commissioner's Special Citation Award for Public Service in fighting nutrition quackery. A free copy of the May 1993 *FDA Consumer*, which is focused on labeling, can be obtained from FDA, HFE-88, 5600 Fishers Lane, Rockville, MD 20857 [order #FDA 93-2262]. A 35-page summary of the labeling regulations can be obtained by writing to the same address. The *Task Force on Dietary Supplements Final Report* [order #PB-931-92888] can be obtained by sending \$30 plus two self-addressed labels to the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161. The complete food and dietary supplement labeling regulations, which occupy 1,262 pages provide a detailed explanation for each conclusion the FDA has reached, can be reviewed at libraries that subscribe to the *Federal Register*.

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BRIEFS

New seafood hotline. The FDA has launched a 24-hour toll-free hotline to answer consumer questions about seafood labeling, buying, handling, and storage for home consumption. FDA seafood specialists will answer questions directly between 10:00 A.M. and 2:00 P.M. Eastern Time, Monday through Friday. At other times callers using a touch-tone phone can listen to recorded messages and order publications. The hotline number, 800-332-4010, can be used in all 50 states and Puerto Rico. The number for the Washington, D.C., area is 202-205-4314.

Chiropractors and supplements. Paul A. Brown, M.D., a Minnesota physician, telephoned 100 chiropractic offices and was informed that 78 of them sold vitamin supplements. Chiropractors who sell supplements typically prescribe them inappropriately and charge two to three times their cost.

New FDA reporting system. The FDA has urged health professionals to increase their reporting of serious adverse events that might be associated with medications and devices. The new initiative, called MEDWatch, is also intended to encompass problems with vitamins, minerals, herbal products, infant formulas, medical food products, and weight-loss products. In a plea to physicians, FDA Commissioner David A. Kessler, M.D., J.D., stated that only a fraction of the serious adverse events encountered are reported [JAMA 269:2765-2768, 1993].

Immune-boosting products attacked. The New York City Department of Consumer Affairs has charged four supplement companies with deceptively promoting products characterized as "immune boosters." The action was taken under a city consumer protection law, passed in 1990, which regulates advertising of products and services claimed or implied to "boost, enhance, stimulate, assist, cure, strengthen or improve the body's immune system." Under this law, no such effect can be claimed without an accurate statement about whether or not the product or service is effective in preventing HIV infection or improving the health of an infected individual. The cited products were *Immune Protectors* (Twin Laboratories, Inc.), *Immunizer Pak Program* and *Immune Nectar* (Nature's Plus), *Pro-Immune Anti-Oxidant* (Nutritional Life Support Systems), and *Ecomer* (a shark liver oil capsule marketed by Scandinavian Natural Health & Beauty Products, Inc.). In announcing the actions, Acting Consumer Affairs Commissioner Mark Schrader called the products "little more than overpriced vitamins, minerals, and herbs."

RDAs to change? The Food and Nutrition Board is considering redefining the basis of the Recommended Dietary Allowances (RDAs). Since their inception, these values have been based on the amounts needed to prevent deficiency (plus moderate extra amounts for storage). Although most nutrition scientists doubt that sufficient data exist, some FNB members and staff think that the RDAs should be raised or be based on "optimal" levels that would help prevent chronic ailments.

Biosphere "experiment" nears end. On September 26, 1993, the crew members of Biosphere 2 will re-enter the earth's atmosphere after spending two years inside the glass-and-steel structure that occupied 3.15 acres in the Arizona desert. About 80% of the food was produced by the crew during the test period, and the rest was produced and stored before the facility was sealed. The diet, which contained little meat, produced significant reductions in weight and cholesterol levels. A 105-page book that describes the crew's food-production experiences and many of the recipes they developed is available for \$15.95 from The Biosphere Press, P.O. Box 689, Oracle, AZ 85623.

Calcium and osteoporosis update. A study has found that supplementation with 1,000 mg per day of calcium significantly reduced bone loss in postmenopausal women [New England Journal of Medicine 328:460-464, 1993]. An accompanying editorial concluded that despite some conflicting studies, "it seems prudent to increase the intake of calcium and vitamin D in most postmenopausal women—calcium to at least 1000 mg and preferably to 1500 per day, and vitamin D to 400 to 800 IU daily—without waiting for more information" [NEJM 328:503-505, 1993].

Caffeine information source. The National Coffee Association has launched an information service that offers original research documents, consumer literature, interviews with experts, and a periodic newsletter called *Coffee Update*. The first two issues of the newsletter provide well-documented responses to several common concerns about caffeine. However, its discussions of caffeine addiction are misleading. Although the newsletter correctly mentions that stopping regular consumption of coffee can produce withdrawal symptoms, it attempts to soft-pedal this by stressing how this problem is minor when compared to addiction to hard drugs. (Nor does it identify the symptoms, which can be severe.) Interested persons can contact Coffee Science Source, 79 Madison Avenue, New York, NY 10016 (Telephone: 212-213-7153).

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CHOLESTEROL GUIDELINES REVISED

The National Cholesterol Education Program (NCEP) has released new guidelines that include screening to detect low HDL (high-density lipoprotein) levels as well as high total cholesterol levels [JAMA 269:3015-3023, 1993]. The revised guidelines emphasize increased physical activity and weight loss as well as dietary therapy as the initial approach to treating high cholesterol levels.

The recommendation for HDL screening is a response to growing evidence that a low HDL level imparts increased risk for coronary heart disease (CHD). Under the new guidelines HDL levels below 35 mg/dL are considered a major risk factor. The other major risk factors are: being male (≥ 45 years old) or female (≥ 55 or prematurely menopausal without estrogen replacement therapy), family history of premature CHD, cigarette smoking, high blood pressure, and diabetes. HDL levels of 60 or more, which appear to protect against CHD, are now considered a "negative risk factor."

The new guidelines call for measuring total cholesterol and HDL levels in all adults 20 years of age or older at least once every five years. In individuals free of CHD, total cholesterol levels less than 200 are still classified as "desirable," levels from 200 to 239 as "borderline high," and levels of 240 or more as "high." For those with desirable total levels, however, a low level of HDL indicates that additional follow-up procedures are advisable.

If screening tests reveal that total cholesterol is too high or HDL too low, a lipoprotein analysis that includes LDL (low-density lipoproteins) is recommended. As in the previous

guidelines, LDL levels under 130 are considered "desirable," levels from 130 to 159 are considered "borderline-high risk," and levels of 160 or more are "high-risk." Treatment and follow-up recommendations depend upon the level of LDL, the number of risk factors, and the presence or absence of CHD. The new guidelines call for more aggressive treatment of LDL levels in individuals known to have CHD or other atherosclerotic disease. The target level for these individuals, formerly 130 mg/dL, has been lowered to 100.

Data from the National Health and Nutrition Surveys (NHANES), conducted by the U.S. Centers for Disease Control and Prevention (CDC), indicate that average blood cholesterol levels for adults between the ages of 20 and 74 have consistently declined between 1976 and 1991 [JAMA 269:3002-3008, 1992]. Based on current NCEP guidelines, the proportion of Americans with high blood cholesterol levels fell from 26% in 1976-1980 to 20% in 1988-1991, while the proportion of those with desirable levels rose from 44% to 49%. Based on 1990 population data, it is estimated that 29% (52 million) would be candidates for dietary therapy to lower the blood cholesterol levels and about 7% might ultimately be candidates for drug therapy [JAMA 269:3009-3014, 1993].

A detailed summary of the new NCEP guidelines as well as reprints of the two prevalence studies can be obtained from James I. Cleeman, M.D., National Cholesterol Education Program, National Heart, Lung, and Blood Institute, National Institutes of Health, Bldg. 31, Room 4A-05, Bethesda, MD 20892.

RECENT BOOKS ON NUTRITION AND FITNESS

Mystical Diets: Paranormal, Spiritual, and Occult Nutrition Practices. *Nutrition Forum* senior associate editor Jack Raso, M.S., R.D., reports on his personal investigations of macrobiotics, Edgar Cayce, Anthroposophic medicine, multi-level marketing (Km and Nature's Sunshine Products), mail-order nutrition, chiropractic, naturopathy, "complementary" and "alternative" medicine, Gerson diet, Natural Hygiene, Ayurvedic medicine, and schools offering dubious credentials. Hardcover, 1993, 300 pages. Available for \$26.00 postpaid from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

Genetic Nutrition. Artemis Simopolis, M.D., Victor Herbert, M.D., J.D., and Beverly Jacobson tell how to integrate information about heredity with basic nutrition principles to arrive at an optimal individual dietary program. Suggests what to eat or avoid if one has a family history of obesity, heart disease, diabetes, cancer, high blood pressure, alcoholism, food allergies, or various uncommon genetic disorders. Hardcover, 1993, 335 pages. Available for \$22.00 plus \$1.50 postage from Special Sales Dept., Macmillan Publishing Company, 866 Third Avenue, New York, NY 10022; or call 1-800-323-7445.

Walking: A Complete Guide to the Complete Exercise. Casey Meyers, a prominent fitness writer and walking enthusiast, has produced an excellent guide for all levels of participation from beginner to race-walker. Softcover, 1992, 332 pages. Copies can be ordered for \$12.00 plus \$2 postage plus state sales tax from Random House, 400 Hahn Road Westminster, MD 21157 or by calling 1-800-726-0600.

ACSM's Fitness Book. Human Kinetics Publishers, Inc., and four experts from The Pennsylvania State University have produced an excellent step-by-step guide to cardiovascular fitness, muscular strength, endurance, and flexibility. Developed by the American College of Sports Medicine, it includes a self-assessment test, and tells why to exercise, how to achieve various fitness levels, and how to choose equipment and facilities. Softcover, 1992, 128 pages, \$11.95 (\$14.95 in Canada). Human Kinetics has also published *ACSM's Health/Fitness Facility Standards and Guidelines*, which advises how to design a commercial health/fitness facility. Hardcover, 256 pages, 1992, \$36.00 (\$45.00 in Canada). Copies can be ordered by calling 1-800-747-4457 (or 1-800-465-7301 in Canada).

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CHELATION THERAPY: UNPROVEN CLAIMS AND UNSOUND THEORIES

Saul Green, Ph.D.

Chelation therapy is a series of intravenous infusions containing a synthetic amino acid (EDTA) and various other substances. Proponents claim it is effective against atherosclerosis and many other serious health problems. Its use is widespread because patients have been led to believe that it is a valid alternative to established medical interventions such as coronary bypass surgery. However, there is no scientific evidence that this is so.

The proponents' viewpoints have been summarized in four books: *The Chelation Answer: How to Prevent Hardening of the Arteries and Rejuvenate Your Cardiovascular System* (1982), by Morton Walker, D.P.M., and Garry Gordon, M.D.; *Chelation Therapy: The Key to Unclogging Your Arteries* (1985), by John Parks Trowbridge, M.D., and Morton Walker D.P.M.; *A Textbook on EDTA Chelation Therapy* (1989), by Elmer M. Cranton, M.D.; and *Bypassing Bypass: The New Technique of Chelation Therapy* (2nd edition, 1990), by Elmer Cranton, M.D., and Arline Brecher. The scientific jargon in these books may create the false impression that chelation therapy for atherosclerosis, and a host of other conditions, is scientifically sound. The authors allege that between 300,000 and 500,000 patients have safely benefited. However, their evidence consists of anecdotes, testimonials, and poorly designed experiments.

This article identifies the major claims made for chelation and examines each in light of established scientific fact. The sources used for this review included position papers of professional societies, technical textbooks, research and review articles, newspaper articles, patient testimonials, medical records, legal depositions, transcripts of court testimony, privately published books, clinic brochures, and personal correspondence.

Early History

The term chelate, from the Greek *chele* for claw, refers to the "claw-like" structure of the organic chemical ethylenediaminetetraacetic acid (EDTA), first synthesized in Germany in the 1930s. With this claw, EDTA binds di- and

trivalent metallic ions to form a stable ring structure. EDTA is water-soluble and chelates only metallic ions that are dissolved in water. At pH 7.4 (the normal pH of blood) the strength with which EDTA binds dissolved metals, in decreasing order, is: iron⁺⁺⁺ (ferric ion), mercury⁺⁺, copper⁺⁺, aluminum⁺⁺⁺, nickel⁺⁺, lead⁺⁺, cobalt⁺⁺, zinc⁺⁺, iron⁺⁺ (ferrous ion), cadmium⁺⁺, manganese⁺⁺, magnesium⁺⁺, and calcium⁺⁺.

Mercury, lead, and cadmium cannot be metabolized by the body and, if accumulated, can cause toxic effects by interfering with various physiological functions. These substances are called "heavy metals," a term applied to metallic elements whose specific gravity is about 5.0 or greater, especially those that are poisonous. Except for aluminum, the other elements in the above list are essential nutrients that are needed for normal metabolic activity.

After EDTA was found effective in chelating and removing toxic metals from the blood, some scientists postulated that hardened arteries could be softened if the calcium in their walls was removed. The first indication that EDTA treatment might benefit patients with atherosclerosis came from Clarke, Clarke, and Mosher, who, in 1956, reported that patients with occlusive peripheral vascular disease said they felt better after treatment with EDTA [*American Journal of Medical Science* 230:654-666, 1956].

In 1960, Meltzer et al., who had studied ten patients with angina pectoris, reported that there was no objective evidence of improvement in any of them that could be ascribed to the course of EDTA chelation treatment. However, during the next two months, most of the patients began reporting unusual improvement in their symptoms. Prompted by these results, Kitchell et al. studied the effects of chelation on 28 additional patients and reappraised the course of the ten patients used in the original trial [*American Journal of Cardiology* 11:501-506, 1963]. They found that although 25 of the 38 patients had exhibited improved anginal patterns and half had shown improvement in electrocardiographic patterns several months after the treatment had begun, these effects were not lasting. At the time of the report, 12 of the 38 had died and only

15 reported feeling better. (This "improvement" was not significant, however, because it was no better than would be expected with proven methods and because there was no control group for comparison.) Kitchell et al. concluded that EDTA chelation, as used in this study, was "not a useful clinical tool in the treatment of coronary disease."

The "Approved" Protocol

The primary organization promoting chelation therapy is the American College of Advancement in Medicine (ACAM), which was founded in 1973 as the American Academy for Medical Preventives. Since its inception, ACAM's focus has been the promotion of chelation therapy. The group conducts courses, sponsors the *American Journal of Advancement of Medicine*, and administers a "certification" program that is not recognized by the scientific community. The 1992-93 edition of *Encyclopedia of Medical Organizations and Agencies* states that ACAM has 450 members.

ACAM's protocol for "the safe and effective administration of EDTA chelation therapy" is included in Cranton's "textbook," a 420-page special issue of the journal that contains 28 articles and a foreword by Linus Pauling. The protocol calls for intravenous infusion of 500 to 1,000 ml of a solution containing 50 mg EDTA per kilogram of body weight, plus heparin, magnesium chloride, a local anesthetic (to prevent pain at the infusion site), several B-vitamins, and 4 to 20 grams of vitamin C. This solution is infused slowly over 3.5 to 4 hours, one to three times a week. The initial recommendation is about 30 such treatments, with the possibility of additional ones later. Additional vitamins, minerals, and other substances—prescribed orally—"vary according to preferences of both patients and physicians." Lifestyle modification, which includes stress reduction, caffeine avoidance, alcohol limitation, smoking cessation, exercise, and nutritional counseling, is encouraged as part of the complete therapeutic program. The number of treatments to achieve "optimal therapeutic benefit" for patients with symptomatic disease is said to range from 20 ("minimum"), 30 (usually needed), or 40 ("not uncommon" before benefit is reported") to as many as 100 or more over a period of several years. "Full benefit does not normally occur for up to 3 months after a series is completed," the protocol states;—and "follow-up treatments may be given once or twice monthly for long-term maintenance, to sustain improvement and to prevent recurrence of symptoms." The cost, typically \$75 to \$100 per treatment, is not covered by most insurance companies. Some chelationists, in an attempt to secure coverage for their patients, misstate on their insurance claims that they are treating heavy-metal poisoning.

Unproven Claims

Proponents claim that chelation therapy is effective against atherosclerosis, coronary heart disease, and peripheral vascular disease. Its supposed benefits include increased collateral blood circulation; decreased blood viscosity; improved cell

membrane function; improved intracellular organelle function; decreased arterial vasospasm; decreased free radical formation; inhibition of the aging process; reversal of atherosclerosis; decrease in angina; reversal of gangrene; improvement of skin color, healing of diabetic ulcers. Proponents also claim that chelation is effective against arthritis; multiple sclerosis; Parkinson's disease; psoriasis; Alzheimer's disease; and problems with vision, hearing, smell, muscle coordination, and sexual potency. None of these claimed benefits has been demonstrated by well-designed clinical trials.

In a retrospective study of 2,870 patients treated with NaMgEDTA, Olszewer and Carter (1989) concluded that EDTA chelation therapy benefited patients with cardiac disease, peripheral vascular disease and cerebrovascular disease. These conclusions were not justified because the people who received the treatment were not compared to people who did not.

In 1990, these authors carried out a "double-blind study" in which EDTA chelation was used to treat ten patients with peripheral vascular disease. The authors claimed that this was the first such study. The patients' progress was evaluated by measuring changes in their blood pressure and their performance in exercise stress tests before, during, and after the course of treatment. The authors claimed that EDTA had a significant impact on the patients' clinical status because the removal of calcium, copper and zinc from the vascular compartment corrected cholesterol and lipoprotein metabolism; triggered a parathyroid response that pulled calcium from the bones; decreased platelet aggregation; lessened iron-generated free radical formation; reduced membrane lipid peroxidation; decreased plaque formation; and prevented intracellular calcium accumulation.

Between 1963 and 1985, independent physicians published at least fifteen separate reports documenting the case histories of more than seventy patients who had received chelation treatments. They found no evidence of change in the atherosclerotic disease process, no decrease in the size of atherosclerotic plaques, and no evidence that narrowed arteries opened wider.

More recently, the results of two randomized, controlled, double-blind clinical trials of chelation therapy were published in peer-reviewed German medical journals. The first was conducted by Curt Diehm, M.D., at the University of Heidelberg Medical Clinic [Zeit. Deutsch Herzstiftung. Vol 10, July 1986]. Diehm studied 45 patients who had intermittent claudication, a condition in which impaired circulation causes

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the individual to develop pain in the legs upon walking. About half of the patients were treated with EDTA and the rest received Bencyclan, a bloodthinning agent. In addition to determining the effect of each agent on the ability to perform pain-free walking exercises, Diehm measured the progress of the disease process in each patient during the four-week treatment period and three months after treatment was stopped. Statistical evaluation of the results after the blinding code was broken showed that patients in both groups had equally increased ability to perform pain-free walking exercises and that treatment with EDTA did not result in any change in the patients' blood flow, red cell viscosity, red-cell aggregation, or triglyceride and cholesterol levels. Diehm also concluded that the improvements in walking measurements in both groups were directly related to his success in convincing them of his strong interest in their well being and his ability to motivate them to make an effort to perform greater activity.

In the second trial, R. Hopf, a cardiologist at the University of Frankfurt, tested chelation in patients with coronary heart disease [Zeit. f. Kardiologie, 76, #2, 1987]. In this trial, 16 patients with angiographic evidence of coronary heart disease were randomized and divided into an EDTA-treated and an untreated group. Before treatment, the treated group averaged 2.1 significantly narrowed coronary arteries, while the untreated group averaged 2.6. Patients were infused with 500 ml of either the EDTA solution or dilute salt water (a placebo) at three-day intervals for a total of 20 infusions. On completion of the trial, patients in both groups said they felt better and performed weightlifting tests equally well. However, comparison of both groups before and after treatment, using angiography and other tests, indicated no improvement in blood flow through the patients' coronary arteries and a slight progression of their atherosclerosis. Hopf concluded that chelation had no effect on diseased coronary arteries.

Dubious Safety

Proponents also claim that chelation has been demonstrated to be safe. In *Bypassing Bypass*, Cranton declares that six million chelation treatments have been given safely over the last forty years. In his textbook, however, he warns of the seriousness of the possible side effects and advises that prospective patients be given a complete physical examination and be tested to rule out hypocalcemia, kidney impairment, allergic conditions (sensitivity to components of the EDTA infusion fluids), hypoglycemia, blood-clotting problems, congestive heart failure, liver impairment, and tuberculosis.

Other observers have reported cases of hypocalcemia

leading to cardiac arrhythmias and tetany; kidney damage; decreased blood clotting ability with abnormal bleeding; thrombophlebitis and embolism; hypoglycemia and insulin shock; severe vasculitis and autoimmune related hemolytic anemia, dermatitis with pruritus and generalized eczema; and extensive clumping of platelets in the blood of some patients with atherosclerosis and other chronic diseases.

An important theoretical consideration should also be considered. The trace metal most dramatically lost as a result of EDTA chelation is zinc. French researchers have found that 24 hours after an infusion of EDTA, the urine of human subjects contained 15 times the normal amount of zinc [British Journal of Clinical Pharmacology 31:347-349, 1991]. Without replacement, the loss of this much zinc over the months during which 30 to 40 treatments are delivered will increase the potential for severe impairment of immune function, precancerous cellular mutations, loss in selective permeability of cell membranes and altered solubility of pancreatic insulin. Although proponent literature advises that supplemental zinc be administered to guard against zinc depletion, studies showing that this supplementation actually prevents depletion have not been published in the peer-reviewed scientific literature.

Unsound Theories

Over the past 40 years, proponents have invoked various biochemical mechanisms to justify their use of EDTA chelation. Each time critics proved that the mechanism in vogue was scientifically untenable, a new one was postulated together with new dogma.

- *Proposed mechanism #1: The "roto-rooter" hypothesis (1960s-1970s).* Throughout the 1960s chelation proponents claimed that the structure of arterial plaque depended on the calcium it contained. They suggested that this calcium was like the rivets in a steel structure and that removing it would cause the plaque to disintegrate, widening the affected arteries and increasing blood flow. This mechanism was compared to "roto-rooter" cleaning of a clogged household water pipe.

Rebuttal: Plaque is an integral part of the artery wall and not a deposit on its surface. Calcium enters arterial plaque in the late stages of its enlargement. Since EDTA cannot pass through the artery cell membranes it cannot chelate the calcium there. Chelation proponents have never presented evidence that chelation therapy causes softening of hardened arteries, removes calcium from arterial plaque or causes the plaque structure to disintegrate.

Even if a chelating substance could impact on arterial disease, there is good reason to doubt that EDTA would be an

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effective agent. Of all the synthetic chelating agents that have been used to bind metals in the body, EDTA is probably the least effective. Because it is water-soluble, it cannot penetrate the lipid-rich cell membranes. Because it is nonspecific, it binds the other divalent and trivalent metal ions in a mixture before it binds calcium. It is rapidly eliminated from the body, carries all bound trace metals with it, and can deplete nutritionally important trace metals.

• *Proposed mechanism #2: Parathyroid hormone (PTH) and plaque decalcification* (1970s–1980s). By the mid-70s the roto-rooster hypothesis had been repudiated. However, because proponents still believed that the structural integrity of arterial plaque depended on its calcium content, a new rationale was needed. In *The Chelation Answer*, Walker proposed that when ionic calcium was removed from serum by EDTA chelation, it was replaced by calcium from bone. This stimulated the parathyroid gland to secrete PTH, which promoted remineralization of bone. Walker alleged that the calcium for this bone remineralization was supplied through serum by “gradual transfer” of calcium from hardened arterial tissue and plaque. This, he said, softened the arteries and caused plaque to disintegrate.

Rebuttal: Every metabolic process in our tissues depends somewhat on calcium for its activity. To ensure human survival, the neuromuscular system must be protected by preventing a loss of calcium from the soft tissues. The calcium in blood plasma is strictly maintained between 9.0 and 11.0 mg per 100 ml in order to replenish any calcium that might be lost from soft tissues. In adult humans, the principal calcium storage depots are the bones, which contain over 99% (1,300 grams) of the calcium in the body. The rest is contained in the soft tissues (0.6%, 7 grams), plasma (0.03%, 350 mg), and extravascular fluids (0.07%, 700 mg). The homeostatic mechanism by which the plasma calcium level is maintained involves the action of PTH, and 1,25 dihydroxyvitamin D₃. These hormones regulate absorption of calcium from the gut, reabsorption in the kidney tubules, and mobilization from the bone.

The remineralization of bone uses calcium drawn from the plasma. A fall in plasma calcium triggers secretion of extra PTH, increases calcium reabsorption in the kidney tubules and synthesis by kidney tissue of 1,25 dihydroxyvitamin D₃, which causes increased calcium absorption from the gut. These PTH actions on the kidney and the gut maintain plasma calcium levels while bone remineralization takes place.

Calcium in the soft tissues is kept from reaching toxic concentrations (too high or too low) by an exchange reaction with divalent ions in the extracellular fluid. There is no normal physiological mechanism by which the soft tissues supply calcium for bone remineralization, and there is no homeostatic process that can selectively direct decalcification of hardened arteries while leaving normal tissues untouched.

• *Proposed mechanism #3: EDTA chelation blocks production of free radicals involved in a chain of reactions that result in atherosclerosis.* (1980s to present). By the early 1980s, the extensive knowledge amassed by scientists about what “free radicals” were, how they were generated, and what damage they might do in the body allowed Cranton to posit the

“current dogma” in the 1990 edition of *Bypassing Bypass*.

According to Cranton, free radicals are produced in the body by toxic metals and by abnormally placed iron and copper that are released into the local blood stream when blood clots in occluded arteries. These metals generate free radicals, which oxidize fatty acids to lipid peroxides, which then generate new free radicals themselves. This chain of oxidation reactions causes arterial cell-membrane damage and plaque formation. When EDTA binds iron, it becomes chemically unreactive and stops catalyzing the production of the free radicals. Thus, EDTA chelation curbs the pathological processes that cause atheromas (plaque) by greatly reducing the amount of free radicals generated in the atherosclerotic blood vessels.

Rebuttal: Ionic iron has two electrons in its outermost or N shell and 14 electrons in its M shell. This configuration gives ionic iron the distinct characteristic of being able to accept three pairs of electrons from other ions. As long as one pair of these electrons is left unbound, ionic iron remains highly reactive.

When iron is dissolved in water at a pH of 7.0 or more, its three pairs of electrons will be bound to three OH groups of the water. The resulting ferric hydroxide is insoluble and precipitates. In contrast, when ionic iron is chelated with EDTA, only two of the three pairs of available electrons are bound. The binding of just two of the three pairs of electrons allows the iron to exist in physiological solutions (at pH 7) in a soluble yet stable form. More importantly, since the EDTA only forms bonds with two of the three pairs of electrons, it allows the remaining pair to be fully involved in oxidation reactions that generate free radicals. Therefore, if EDTA chelates ionic iron, it does not stop it from generating free radicals. Rather, EDTA chelation keeps iron dissolved in the blood stream for extended periods and magnifies the extent to which it catalyzes production of tissue-damaging free radicals.

Under normal circumstances most of the iron in the body is bound to proteins and is not able to generate free radicals. As a result, the few free radicals that are generated by ionic iron are fully dealt with by existing antioxidant enzyme systems. However, when something causes the release of iron from these protein complexes, the amount of ionic iron is markedly increased and the potential for free-radical production is exacerbated. High doses of vitamin C increase the amount of ionic iron in the circulation by promoting its release from transferrin (the iron-transport protein) and from ferritin (the iron-storage protein), and by increasing the absorption of dietary iron from the gut. Since EDTA infusion solutions include megadoses of vitamin C, the possibility exists that chelation therapy will increase the formation of free radicals that cause tissue damage!

• *Proposed mechanism #4: Chelation therapy prevents mutations of cells that become an atheroma.* Atheromas are benign tumors that arise from mutated artery cells. Artery cells mutate when their DNA is damaged by free radicals. When these cells grow, they become a benign tumor called an atheroma (plaque).

Rebuttal: Arterial atheromas are not derived from

mutant cells but from events that cause damage and processes that attempt repair. Low-density lipoproteins (LDL) in the plasma cross the endothelial cell layer of the artery at a point where an injury has occurred and are deposited in the subendothelial layer. Monocytes are attracted to the injured area and migrate between the endothelial cells to the subendothelial layers. These monocytes are converted to macrophages which engulf the LDL and become the foam cells or "the fatty streak." The fibrous plaque—the accumulation of foam cells ruptures the endothelial cell layer causing platelets to aggregate at the site. Platelet growth factor is released, stimulating smooth muscle cell proliferation and the deposition of more LDL. Smooth muscle cells produce collagen and form a fibrous, collagen-rich cap over the site (plaque). At this stage the plaque contains cholesterol, lipid particles, and the debris from dead cells. If this cap is dislodged, there is a rapid repetition of the above steps and the plaque enlarges. The atheroma—smooth muscle cell proliferation results in an infiltration into the intima of the arterial wall. As the atheroma enlarges, the small blood vessels surrounding it rupture and bleed, causing calcification inside the atheroma. As the atheroma continues to enlarge, it causes narrowing of the artery.

The Phantom Study

In October 1989, chelation therapy was listed as one of "The Top Ten Health Frauds" in an article in *FDA Consumer*. The article reported that both the FDA and the American Heart Association have said that there is no scientific evidence that chelation therapy is effective against cardiovascular disease. Three issues later, a letter from a proponent complained that the listing was inappropriate because the FDA had approved the protocol of a clinical trial that was underway. The letter was followed by "an apology for the error," which stated that the editor had not been aware that chelation therapy had been approved for a study. The editor's note also quoted an FDA official who said that the study should "unequivocally answer at least several questions related to the utility of chelation therapy in . . . intermittent claudication."

The FDA should not have backed down because mere approval for a clinical trial is not proof that method works. Nevertheless, for several years, proponents continued to trumpet the *existence* of the study as evidence that their claims were justified. The study, however, has not been completed. According to proponents, a drug company that was involved in funding the study changed its mind, leaving them without the resources to complete it. Even if the study had been completed and had demonstrated benefit in patients with intermittent claudication, it would not have proven that chelation is safe or effective for anything else.

In 1992, a group of cardiovascular surgeons in Denmark published results of a double-blinded, randomized, placebo-controlled study of EDTA treatment for severe intermittent claudication [*Journal of Internal Medicine* 231:261–267, 1992]. A total of 153 patients in two groups received 20 infusions

of EDTA or a placebo for 5 to 9 weeks, in a clinical protocol duplicating the conditions used by Olszewer and Carter in 1990. The changes seen in pain-free and maximal walking distances were similar for the EDTA-treated and the placebo group, and there were no long-term therapeutic effects noted in 3-month and 6-month follow-ups. These investigators concluded that chelation was not effective against intermittent claudication.

Summary and Conclusions

Chelation therapists state they have administered millions of EDTA treatments to hundreds of thousands of patients over the past 40 years. Protagonist publications contain their claims of numerous clinical successes and speculations couched in modern scientific terms, seeking to explain how chelation therapy could work. Since there is no evidence showing the treatment has modified the disease process, it is clear that the "benefits" being described are the result of the compassionate attention paid to the problems of the patient and to the encouragement given them to cope with their symptoms, and/or to changes in patients' lifestyle, the same ones recommended by scientific practitioners.

If chelation therapists practiced in a scientific manner, their publications would show an interest in obtaining objective proof that chelation could alter the progress of the atherosclerosis, that occluded blood vessels could be cleared, that plaque deposits could be reduced, and that hardened arteries could be "softened." Their data would include carefully documented case reports with long-term follow-up, comparisons of angiograms or ultrasound tests before and after chelation, and data from autopsies of former patients. But chelationists have published no such data. The few well-designed studies that have addressed the efficacy of chelation for atherosclerotic diseases have been carried out by "establishment" medical scientists. Without exception, these found no evidence that chelation worked.

Based on numerous reviews of the world's medical literature, these same conclusions have been reached by the FDA, National Institutes of Health, National Research Council, California Medical Society, American Medical Association, Centers for Disease Control and Prevention, American Heart Association, American College of Physicians, American Academy of Family Practice, American Society for Clinical Pharmacology Therapeutics, American College of Cardiology, and American Osteopathic Association.

Notwithstanding claims to the contrary, the chelation "establishment" is not being victimized by a prejudiced and arrogant medical orthodoxy, but by its own unwillingness to mount a rigorous, placebo-controlled, double-blind clinical trial and stand by the results.

Dr. Green is a biochemist who did cancer research at Memorial Sloan-Kettering Cancer Center for 23 years. He consults on scientific methodology and has a special interest in unproven methods.

BRIEFS

Trouble for diet guru. On August 10, New York State licensing authorities suspended the medical license of Robert C. Atkins, M.D., after investigation into a case in which a 77-year-old breast cancer patient used a hand-held pump to inject herself with ozone gas. According to press reports, the suspension was triggered by a complaint from an emergency room physician who treated the woman for left-sided weakness caused by a brain embolism (blood vessel obstruction). In his newsletter (*Health Revelations*), Atkins stated that the patient had merely "suffered a minor reaction that left her weak-kneed" and that she had returned to him for further therapy. On August 17th, a New York State Supreme Court judge ruled that Atkins can resume seeing patients as long as he does not treat them with ozone. Atkins, who also writes books and hosts a radio talk show, uses "nutritional" methods to treat the gamut of disease, prescribes and markets his own line of "targeted nutrition" products. A notice posted at the cashier's cage in the lobby of his office building states: "As of May 18, 1993, the receipts/superbills that you will be receiving will no longer state 'Prescribed Medicine.' Instead, they will state 'Vitamin/Mineral/Herbal supplements.' This is due to the fact that the insurance companies are asking us to be more specific than we have been in the past. . . . We recommend that you do not submit the vitamins to your insurance carrier for reimbursement. It may affect your ability to collect on the rest of your claim."

Calcium supplementation among adolescent girls. A double-blind, placebo-controlled study of 12-year-old girls found that daily supplementation with 500 mg of calcium citrate maleate for 18 months resulted in increases in bone density that the researchers felt might lower their risk of osteoporotic fractures in later life [JAMA 270:841-844, 1993]. Reprints can be obtained from Tom Lloyd, Ph.D., Milton S. Hershey Medical Center, Hershey, PA 17033.

Suit over book's advice settled. The suit by Maurice Fishman against Robert E. Kowalski and Harper & Row Publishers has been settled with payment of an undisclosed sum. The suit charges that Fishman had become very ill as a result of following advice given in an early edition of Kowalski's book, *The 8-Week Cholesterol Cure*. The book had advised taking niacin in high doses but did not indicate the potential risks or the importance of medical supervision.

New cholesterol report. The *Harvard Health Letter* has issued an excellent 36-page special booklet about the role of blood cholesterol in cardiovascular disease. The report, which is easy to read but covers the subject matter in depth, includes basic biochemistry, diagnostic and treatment guidelines, dietary modification, drug treatment, and research pertaining to antioxidants. Copies are available for \$16 from Harvard Medical School, Health Publications Group, Dept. CHO-Rep, P.O. Box 380, Boston, MA 02117. Multiple-copy discount rates are available.

Irradiation ban extended. A law has been passed in New York State extending the ban on selling or distributing irradiated food until the end of 1995.

Sharper Image tarnished. The Sharper Image Corporation and its president, Richard Thalheimer, have signed an FTC consent agreement not to make unsubstantiated claims that any U.S. Government agency has recognized *Essential Factors with Oxy-Energizer* as effective for relieving fatigue or producing energy. Ads for the product had stated: "Oxy-Energizer is the first nutritional supplement ever to be granted a US patent. Supported by over 300 independent clinical trials, this anti-fatigue formula consistently demonstrated increases in stamina, endurance, recovery time, and cardiovascular function—results that simply can't be duplicated by any other nutritional supplement. . . . Oxy-Energizer contains a trade secret blend of potassium, magnesium and aspartic acid. Double-blind swimming, running, and aerobics studies consistently show improvements in stamina and endurance for subjects who regularly take these active ingredients. It can help you accomplish more at the office because you're not fighting tiredness. After work, you have more energy to enjoy sports or a late evening out." The ad also stated that "fitness authority" Kathy Smith "gets extra energy" from the product and had used it daily for five years to help maintain her busy pace. A two-month supply cost about \$1.25 per day. During 1990, the company's mail-order catalog claimed a readership of over 20 million.

FBI interested in health frauds. Spurred in part by the Clinton Administration's wish to control health-care costs, the Federal Bureau of Investigation has expressed interest in hearing from individuals with knowledge of health-related frauds under federal jurisdiction. These include fraudulent insurance billing and schemes involving use of the mail or telephone.

ANTIQUACKERY BLOCKBUSTER PUBLISHED

Prometheus Books has published *The Health Robbers: A Close Look at Quackery in America*, edited by Stephen Barrett, M.D., and William T. Jarvis, Ph.D. The 544-page book, which lists for \$25.95, has more than 20 contributors and a foreword by Ann Landers. Its 36 chapters cover chiropractic, homeopathy, naturopathy, acupuncture, faith healing, vitamin pushers, mail-order quackery, "fad" diagnoses, overselling of herbs, cancer and arthritis quackery, unproven "allergies," dubious dental care, multilevel marketing, immunoquackery, "organic" foods, weight-control facts and fads, occult practices, holistic hodgepodge, prominent promoters, why quackery persists, what can be done about it, and many other topics. Nutrition Forum readers can obtain a discount by ordering from LVCAHF, P.O. Box 1747, Allentown, PA 18105. The price is \$25 postpaid for American orders and US\$27 postpaid for Canadian orders.

“Homeless” claim may be a ploy. Press reports indicate that many if not all of the people displaying “Homeless. Work for food” signs near busy intersections are not seeking work but are begging for money from sympathetic drivers. Many such individuals collect hundreds of dollars a day and are not homeless.

“Nutritional” therapies for cancer. The American Cancer Society has published a position paper recommending against use of pau d’arco tea, Hoxsey herbal treatment, macrobiotic diets, the Gerson diet, Kelley metabolic therapy, Manner metabolic therapy, and megadoses of vitamin C for the treatment of cancer [CA 43:309–319, 1993]. The report concludes: “None of these approaches is supported by adequate clinical data. Some involve a diet that is nutritionally inadequate. Some involve potentially toxic doses of vitamins and/or other substances. Some are quite expensive. All pose the risk that patients who use them will abandon effective treatment.”

Amalgam fillings judged safe. A U.S. Public Health Service has issued a 200-page report concluding that mercury in dental amalgam does not appear to cause adverse health effects in the vast majority of people who receive them. Although noting that there was “insufficient scientific evidence to completely rule out the possibility” of long-term health risks, the report concluded that there is no reason to have amalgam fillings removed. A small percentage of dentists advocate removal of mercury-amalgam fillings based on unsubstantiated claims that they cause a large number of diseases. Consumers Union has concluded that dentists who engage in this practice should have their license revoked. The advice for removal often includes dietary supplementation to minimize “toxicity” allegedly associated with the removal process. Single copies of the report can be obtained by writing to PHS Subcommittee on Risk Management, CCEHRP, HFZ-1, 5600 Fishers Lane, Rockville, MD 20857.

Food safety report. The American Council on Science and Health has published a 36-page booklet, *Eating Safely: Avoiding Foodborne Illness*, which discusses what consumers, government agencies, and the food industry should do to prevent food poisoning. The report is available for \$3.85 from the American Council on Science and Health, 1995 Broadway, 2nd Floor, New York, NY 10023.

Pharmacists flunk student’s “vitamin test.” Donna J. Mitchell, a Kent State University graduate student, recently visited ten drugstores in three small communities within a 20-mile radius of Youngstown, Ohio, stating: “I’ve been really tired lately. Is there any vitamin supplement that could help?” Although the correct answer is no, six of the pharmacists recommended a multivitamin and two recommended a B-vitamin. None of these eight asked whether a doctor had been consulted. The pharmacists who said that a vitamin would not help suggested getting more sleep. One also recommended seeing a doctor (correct advice), while the other suggested doing exercise. The study was supervised by William M. London, Ed.D., associate professor of health education at Kent State.

Labs settle charges for billing errors. Three of the nation’s largest medical laboratories, while admitting no wrongdoing, have agreed to pay large penalties to settle federal charges that they had falsely billed for blood tests. MetPath and MetWest agreed to pay \$39.8 million after being charged with misleading doctors into ordering unnecessary tests for iron storage, cholesterol and glucose as part of a series of screening tests. (The labs charged Medicare separately for tests that the doctors thought were included in a screening package.) Last year, National Health Laboratories agreed to refund \$111 million to settle charges that it had submitted similar false claims to Medicare, Medicaid and CHAMPUS. After the settlement was announced, CBS-TV’s “60 Minutes” demonstrated how five of its investigators gave blood samples to National Health Laboratories and found that unnecessary tests were still performed and billed.

Drifting smoke jeopardizes restaurant workers. A literature review has found that the levels of environmental tobacco smoke (ETS) in restaurants is 1.6 to 2.0 times higher than in the offices of other businesses and 1.5 times higher than in residences with at least one smoker. The study also found that the levels in bars were 3.9 to 6.1 times higher than in offices and 4.4 to 4.5 times higher than in residences. Noting that epidemiological evidence suggests there may be a 50% increase in lung-cancer risk among food-service workers that is partly attributable to ETS exposure in the workplace, the study’s author concluded: (1) ETS is a significant occupational hazard for food-service workers, and (2) smoking should be prohibited in restaurants and bars [JAMA 270:490–493, 1993]. Reprints are available from Michael Siegel, M.D., Office on Smoking and Health, Centers for Disease Control and Prevention, MS K50, 4770 Buford Highway, N.E., Atlanta, GA 30341. According to a press release, Los Angeles-based California Pizza Kitchen, which has 34 outlets nationwide, was the first national restaurant company to ban smoking in all of its outlets (in July 1991).

Royal jelly defrocked. A federal court has ordered destruction of quantities of several Regina Royal Jelly products seized in January 1992 from Bee-Alive Inc., of Valley Cottage, N.Y. The FDA initiated the seizure because labeling (including promotional literature) had falsely represented that the products were safe and effective for the treatment of disease. In 1989, the agency had warned the company that promotional material distributed with *Regina Royal Concorde* had made illegal statements that the product was useful in treating or preventing chronic Epstein-Barr virus syndrome, gastrointestinal ulcers, colitis, low blood pressure, arteriosclerosis, nervous breakdowns, infertility, impotence, depression, rheumatoid arthritis, Alzheimer’s disease, anemia, asthma, hemorrhoids, migraine headaches, and other problems. Although Bee-Alive, Inc., promised to stop distributing literature making these claims, it continued to advertise that Regina Royal Jelly could help children resist childhood ailments, “offers daytime vitality and nighttime tranquility,” increases mental and physical stamina, and “seems to improve the immune system.”

FDA DOCUMENTS WIDESPREAD CRIMINAL ACTIVITY

An FDA report has described how the "dietary supplement" industry is engaging in widespread criminal activity in the marketing of their products. The report was released on July 29 when FDA Commissioner David A. Kessler, M.D., J.D., testified before the Subcommittee on Health and the Environment of the U.S. House of Representatives Committee on Energy and Commerce, chaired by Rep. Henry A. Waxman (D-CA). The hearing was held to gather information related to dietary supplement regulation.

Bills introduced by Senator Orrin Hatch (R-UT) and Representative Bill Richardson (D-NM) are intended to weaken FDA regulation by exempting certain products and making the enforcement process more cumbersome [NF 10:21, 1993]. The bills are being supported by a massive "grass-roots" campaign by supplement marketers and by consumers who are being told that unless they act, they will lose the right to purchase vitamins without a prescription. At the hearing, Dr. Kessler stated:

"Contrary to what Members of Congress may be hearing, FDA has no intention of forcing consumers to get a doctor's prescription to obtain vitamins or minerals. Nor is the agency intent on forcing health food stores out of business. . . .

"The current debate is about the safety and proper labeling of these products. . . . While today's debate is being shaped by some recent regulatory and Congressional concerns, the fundamental issue has been with us for decades. . . . the conflict between what marketers want to claim about unproven remedies and the government's responsibility to ensure that those claims have a scientific basis.

"The challenge to all participants in the dietary supplement debate . . . is to strike the right balance between ensuring the safety and proper labeling of all of these products while at the same time preserving consumers' freedom of choice. Freedom of choice means little unless consumers have accurate information on safety and effectiveness in deciding whether to purchase these products."

With his testimony, Commissioner Kessler released a 110-page report called *Unsubstantiated Claims and Documented Health Hazards in the Dietary Supplement Marketplace*. The report has four sections:

- A list of more than 500 "dietary supplements" and the unsubstantiated claims made for them in company catalogs and other product literature.

- Examples of FDA enforcement actions (seizures and warning letters) taken against 188 dietary supplements from November 1990 through June 1993. The report notes: "As the other sections of this report make clear, this investment of resources has failed to stem the tide of unsubstantiated claims."

- A list of oral representations made for specific products for high blood pressure, immune system problems, and cancer, by employees of stores selling dietary supplements. The list was compiled by FDA personnel in each of the FDA's 21 district offices throughout the United States who visited local health-food stores, posing as prospective customers. The inves-

tigators asked "What do you sell to help high blood pressure?" "Do you have anything to help fight infection or help my immune system?" and "Do you have anything that works on cancer?" Of 129 requests for information summarized in this section of the FDA report, 120 resulted in recommendations of specific dietary supplements. On six occasions, employees merely provided references from reading materials on dietary supplements. Store employees declined to make recommendations in only three. In 21 cases, employees made direct use of *Prescription for Nutritional Healing*, a 384-page book whose publisher (Avery Publishing Group, Garden City, N.Y.) promises will increase their sales.

- A report of serious adverse reactions associated with selected ingredients marketed as dietary supplements. The report focused on nine herbals (chaparral, comfrey, yohimbe, lobelia, germander, willow bark, jin bu huan, ma huang, and a Chinese herbal preparation containing *Stephania* and *Magnolia* species); two amino acids (L-tryptophan and phenylalanine); vitamin A, vitamin B₆, niacin, selenium, and germanium.

The report concludes: "The history of health quackery in this century demonstrates that enforcement actions may cause manufacturers to remove claims from the label—but the products stay on the market. Even without claims on the label, sales literature and salespeople continue to make unsubstantiated claims. Moreover, products continue to be bought and used because of the original unsubstantiated claims. . . .

"The bottom line is this: The marketplace has changed little over the years despite FDA's efforts. If anything, unsubstantiated claims are becoming more exaggerated, more products of unknown effect are available, and their use is escalating.

"When it comes to dietary supplements, the position of the Food and Drug Administration is straightforward: Dietary supplements should be safe, and any health claim on their labels or in promotional literature should be scientifically valid."

Section 201(g)(1) of the federal Food, Drug, and Cosmetic Act defines "drug" as any article (except devices) "intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease" and "articles (other than food) intended to affect the structure or function of the body." FDA Regulation 201.126 requires labeling to contain adequate directions for all intended uses. Labeling includes any written, printed or graphic material that accompanies a product. Intended use is determined by the facts at hand. Drugs not generally recognized as safe and effective by experts are "new" drugs. Marketing an unapproved (by FDA) new drug in interstate commerce is a federal crime. Under state laws, health-food store retailers are not permitted to "diagnose" or to "prescribe" products to customers. Unless they are licensed as a health professional—which few are—these activities constitute practicing medicine without a license, which is a crime.

Copies of Commissioner Kessler's testimony (\$5) and the FDA report (\$18) are available from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

NUTRITION

Forum

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"THE REXALL TRADITION"

Joan Benson, M.Ed.

Rexall Showcase International (RSI), launched in 1990, is a direct marketing ("multilevel") company that sells weight-control products, dietary supplements, homeopathic remedies, and water filters. It is a subsidiary of Rexall Sundown, Inc., of Ft. Lauderdale, Florida, whose stock was recently listed on the National Association of Securities Dealers Automated Quotation (NASDAQ) National Market System.

RSI is described to prospects as the newest addition to the Rexall Family of Companies, "one of the best known, most successful corporate families in America." RSI hopes to capitalize on the Rexall name, "the trust that goes with the name, and the warm fuzzy childhood memories associated with Rexall Drugstores." According to an RSI brochure, a survey of more than 30,000 households found that 75% recognized the Rexall name and that trust in the name was "exceptionally high."

This article is based on an investigation I conducted during 1992 as a project for a health education class at Kent State University. The more recent material has been added by Dr. Stephen Barrett.

Rexall's Roots

In the video *Why Rexall Expands to Network Marketing* (1990), Rexall Division's Chief Executive Officer Armend Szmulewitz provides a brief history of Rexall's development:

In 1903, a gentleman named Louis Liggett decided to do something with the independent pharmacist. Those pharmacists were providing medical care to the individual people. Not the medical care we're used to today; it was done on an individualized basis. Lou said, "If I can pool that strength . . . I can come up with a method of taking individual pharmacists and individual markets and bringing them together into a national organization." It began what came to be known as "the Rexall concept." In the beginning it was called United Drug.

According to Szmulewitz, Liggett developed products that pharmacists "could proudly prescribe on an over-the-counter basis to their patients. That's really the beginning of

what we call today OTC, but in those days they were called patent medicines. . . . In 1903 . . . the pharmacist was the doctor in the town. . . . He worked in concert with the [medical] doctor." Liggett called his line Rexall Products [short for 'Rx to all.']. As the Rexall name gained recognition, Szmulewitz continued, "the items became stronger than the store" and the stores became Rexall stores. In the mid-1980s, the Rexall name and distribution rights were purchased by RSI's parent company.

"With that name came a great tradition," Szmulewitz asserted. "We asked, 'How do we get back to what Rexall was, bringing it back to the person, to the independent pharmacist?' We can't do that. But the person-to-person concept will work—bringing the Rexall store to somebody's house." Noting that people typically take only a second to decide whether to buy a product on the shelf, Szmulewitz said that RSI's story needs to be told in a different format: "Very similar to how the independent pharmacist told it many times. The consumer came in, 'Doc I got something wrong, what do you think? They [pharmacists] spend the time. 'Tell me what's wrong.' This is what you need. This is what I think will help.'" Szmulewitz continued: "If we can explain it to someone, if we can train them on how to sell it, train them how to use it, train on what the benefits are, and have those people explain it to other people, we've now brought back what always worked in the Rexall concept: One person talking to another."

An article in the March 1, 1982 issue of *Business Week* magazine provides a somewhat less glowing perspective. It states that the Rexall name had once appeared on about 300 company-owned stores and 12,000 franchised outlets (about 20% of the country's drugstores). During the 1970s, however, Rexall was unable to withstand competition from rivals that built modern outlets in high-density shopping areas. In 1977, the chain was sold for \$16 million to a group of private investors, which divested itself of the stores, pared its manufacturing capacity, and became primarily a distributor of vitamins, health foods, and plastic products such as toothbrushes. Former franchisees were permitted to keep using the Rexall name, but a former company official said this might not promote Rexall products because some of the stores were "eyesores" that conveyed a negative public image.

Today, although many pharmacies carry Rexall products, few still use the Rexall name. Inspection of twenty recent Yellow Page directories selected randomly at a public library found only three "Rexall" pharmacies out of about 1,000 listed. Moreover, the law limits what pharmacists can do when people ask them to recommend products.

The Sundown Connection

In 1985, operating control of the Rexall name and distribution rights were acquired by Sundown Vitamins, Inc., a company founded in 1976 by Carl DeSantis. DeSantis, who had worked in advertising and management for Super X Drug Stores and Walgreen Drug Stores, has been board chairman, chief executive officer, president, and principal stockholder ever since. In April 1993, Sundown Vitamins changed its name to Rexall Sundown, Inc., shortly before raising \$32.9 million by selling 2.5 million shares of its stock to the public. The offering's stated purpose was to raise funds to acquire its own vitamin manufacturing facility.

According to its June 18, 1993 prospectus, Rexall Sundown, Inc., markets approximately 740 products through retailers, mail-order ads and catalogs, and independent distributors. Sundown® nutritional products are sold through mass merchandisers, drugstore chains, and supermarkets. Rexall® nutritional products are sold through independent drugstores. Thompson™ products are sold in health-food stores. (Thompson Nutritional Products was founded in 1935 and acquired by Sundown in 1990.) The mail-order sales are made through the company's SDV Vitamins division. Person-to-person sales are made through RSI. Rexall Sundown also sells OTC drug products such as cold remedies and analgesics under the Rexall trademark. Total sales grew from \$24.1 million in fiscal 1988 to \$93.1 million in fiscal 1993 (which ended August 31, 1993).

Under federal laws, products marketed for preventing or treating disease are "drugs" that would be illegal to sell unless proven safe and effective for their intended purposes. Although no health claims are made for most products in the Thompson and SDV catalogs, a few are questionable. Thompson's *PMS Formula for Women* ("beneficial in reducing the severity of PMS symptoms"), contains 200 mg of vitamin B₆, a dose that can produce nerve toxicity if taken for several months. Its *CoQ-10* "may revitalize the immune system, protect and strengthen the heart and cardiovascular system, normalize high blood pressure and assist in controlling periodontal disease." Its *Free Form Lysine 500 MG* is claimed to "reduce the severity and recurrence of Herpes Simplex viral infections and aid in the production of antibodies, hormones, and enzymes." SDV's catalog includes *Memo-Vite*, *eyetamins*; *Hair, Skin, and Nails* ("The nutrients your body needs for healthy, lustrous hair, glowing skin, and strong nails"); *Ginkgo Biloba* ("might be the answer" for depression, poor circulation, lack of energy, swollen and achy legs, dizziness, ringing in the ears, or occasionally forgetting one's address or phone number); *Green Tea Extract* ("support for weight loss diets"); and *Aloe Vera Softgels* ("may possibly help reduce the symptoms of arthritis").

RSI's Products

RSI's offerings include the following:

- **Weight-control products.** RSI's original product, *Bios Life Diet*, was a powdered mixture of guar gum and oat fiber fortified with a few vitamins and minerals. According to a two-page flyer (#CF7157) titled "The Facts . . . Why We Chose the Bios Life Diet — What Needs to be Known!!" the product "can help you lose weight without feeling hungry even if you do not follow a formal diet. In addition it can slash your cholesterol levels at the same time!! . . . You simply eat less food at each meal because of the full feeling you receive from taking the Bios snack prior to meals. . . . Top medical experts say the benefits derived from weight loss and lowering cholesterol can greatly reduce the risk of deadly heart disease." (The fact sheet also states that it is "for informational purposes only, cannot be reprinted or referenced.") *Bios Fruit Bars* (\$1.65) are said to provide a high-fiber, low-fat snack that, combined with a glass of water, make you "feel full so that you can resist the foods you should avoid." Recently *Bios Life Diet* was replaced by *Bios Life 2*, which has a greater variety of fibers and contains a patented chromium product said to "help control appetite and, in particular, to help to control sugar cravings."

- **Showcase Nutritionals.** These include twelve supplements described in a 1991 brochure as "scientifically correct, break-through products" whose "every ingredient has been thoroughly researched and documented in peer-reviewed literature as having merit in augmenting or otherwise stimulating the functions of certain organs, tissues and systems in the human body." The May/June 1991 issue of *Rexall Showcase International News* claims nutritional needs can be customized: "Building from a general nutritional base—with a product such as *Plenamins*, *Daily Essentials* or *Teen Essentials*"—you can add products such as *Essential Bodyguard*, *Essential B-Concentrate* or *Essential-C 6+6* [a vitamin C supplement] "to find a combination that suits your diet or lifestyle." Such a program would cost from 18¢ to 96¢ per day, depending on the products chosen.

- **Homeopathic products.** *In•Vigor•Ol* is said to be a "natural, effective, invigorating tonic" for people troubled by "everyday fatigue, general tired feeling, and exhaustion." *Protect•Ol* is "indicated as the initial phase in cleansing the body from many environmental pollutants." and that it "enhances the effectiveness and assimilation when beginning any nutritive and homeopathic program." *Calmplex•2000* "is a solution to everyday stress, simple nervous tension and insomnia." *Reliev•Ol* lozenges are for "the relief of cough, cold, and allergy symptoms." *Metaba-TROL*, part of the Bios Life 2 Weight Management Program, is "to affect your mental, emotional and metabolic inclinations to eat at inappropriate times . . . a godsend for people who eat because of stress, anxiety or fear, for binge eaters and nervous nibblers." Homeopathy is based on the notion that symptoms can be cured by administering extremely small doses of substances that produce similar symptoms in healthy people ("like cures like"). Although federal law recognizes homeopathic products as drugs, the FDA has not required proof that they are safe or effective.

SHOWCASE NUTRITIONALS

Product Name	Description*	Analysis by Stephen Barrett, M.D.
Ultimate Plenamins \$16.95/130 days	A "total-nutrition" family vitamin/mineral formula with 42 nutrients. Ingredients include ginseng, bee pollen, PABA and inositol.	No better than many other multivitamin/mineral products, but almost twice the price of Centrum and triple that of some generic Centrum equivalents.
Daily Essentials \$8.95/30-120 days	General purpose nutritional supplement to meet people's needs at different times in their lives.	Contains RDA amounts of most ingredients but extra vitamin C, vitamin E, and beta-carotene. Vitamin needs vary little during a person's lifetime.
Energy Essentials \$9.50/15-60 days	Provides the nutrients your body needs to help maximize its natural energy-generating abilities.	Falsely implies that a supplement is needed to provide or increase energy.
Teen Essentials \$8.95/30 days	For the special needs of growing, busy young people. Contains the vitamins and minerals vital to healthy tissue growth, along with a complex of B vitamins to enhance energy. Also contains PABA, recognized for its effective role in skin protection.	Teens do not have special needs for supplements. PABA is used in some skin products that protect against the sun's rays. It does not benefit the skin when taken orally.
Workout Essentials \$7.95/60 days	Just as your skin needs a moisturizer after being exposed to the sun, you need Showcase Workout Essentials—a unique combination of vitamins, minerals and amino acids formulated to aid in your own natural muscle recovery process. Provides the nutrients that strenuous exercise depletes.	There is no scientific evidence that supplements are needed or can help recovery from exercise. Strenuous exercise is unlikely to deplete the body of nutrients. Athletes get more than enough vitamins, minerals and amino acids when eating enough to meet their caloric requirements.
Diet Essentials \$7.95/30-120 days	Enhanced to keep your energy level high, even when your calorie intake is low.	A severe calorie deficit can contribute to fatigue, but vitamins and minerals do not supply energy.
Senior Essentials \$7.95/30 days	To help seniors to avoid some of the nutrition problems that can slow them down when they really want to keep moving. Contains B-complex vitamins to aid in the conversion of fats, proteins and carbohydrates into energy.	People who eat well do not develop nutrition problems that can slow them down. Implies that the product may make users feel energetic.
Essential Bodyguard \$15.95/24-120 days	Because today's stressful lifestyles can deplete the nutrients your body needs to maintain a healthy immune system, you may want to enlist the help of Essential Bodyguard. Contains beta carotene and vitamins C and E, whose antioxidant properties help eliminate dangerous toxins in your system..	This is doubletalk. It is not true that stressful lifestyles deplete the nutrients needed to maintain a healthy immune system. Nor is it proven that antioxidants "help eliminate dangerous toxins" from your system or that supplementation enhances such a process.
Essential B Concentrate \$5.50/100 days	Research shows that nearly all people can benefit by supplementing their intake of these essential nutrients. Each tablet supplies a complex of 100% of the Recommended Daily Allowance of all essential B vitamins. Because B vitamins are water-soluble, your body needs daily replenishment.	Research does not show that nearly everyone can benefit from supplementation. Even if it did, it would not make sense to take this product, either alone or in addition to a more complete multivitamin/mineral product. B-vitamins do not need to be replenished daily because the body normally stores at least several weeks' supply.
Essential Fish Oil Concentrate \$6.95/30 days	Provides omega-3 fatty acids from fish liver oils, which have been shown to have a positive effect on cholesterol levels.	Fish oils will raise cholesterol levels in some people and can have other adverse side effects. They are not suitable for self-medication and would not be part of most medically supervised cholesterol-control regimens. Experts recommend that fish oils be obtained from fish, not supplements.
Essential Enzymes \$9.75/90 tablets	May be helpful if there is a deficiency of natural enzymes or when additional enzymes may be required. Improper digestive enzymes may be the cause of bloating, cramps, or other manifestations of intestinal gas.	Cramps and bloating can have many causes, including a high-fiber diet. Some require medical attention. Enzyme deficiency is not a likely cause. If such a deficiency exists, it should be medically diagnosed. Laypersons are not qualified to do this.

*Sources: Showcase Nutritionals brochure, 4/3/91, *Showcase International News*, May/June 1991, and *News from Showcase International*, Jan/Feb 1992.

- ClearSource water filters. These include countertop (\$169), undercounter (\$199), whole house (\$895), shower (\$129), and portable (\$79) units.

The prices mentioned above are "retail." Distributors pay about 30% less. RSI's total sales to distributors were \$7.8 million for the six months ending February 28, 1993.

RSI's Sales Tools

Multilevel marketing (also called direct or network marketing) is a form of direct sales in which independent distributors sell products, typically in their customers' home or by telephone. Distributors may profit from their own sales and also from those of people they recruit.

RSI recruits through individual contacts and group meetings, using testimonials and high-tech materials as recruiting tools. My distributor's kit, which cost \$43, contained a manual; a copy of the company's magazine *News from Rexall Showcase International*; a video called "Good Wealth to All"; two audiotapes — "Quick Start" and "The Right Choice"; credit and insurance applications; order forms; and brochures on the company's products and compensation plan.

- *News from Showcase International* reports on conferences, successful distributors, and new products and sales aids. It answers questions about products and contains testimonials, some of which were presented at an RSI conference.

- "Good Wealth to All" features cheerful, attractive people using RSI's products. It gives the history of Rexall, concentrating on the name-recognition factor. The testimonials include one by former astronaut Edward Mitchell, the sixth man to land on the moon and now an RSI distributor. The video includes shots of an Apollo rocket lifting off and shots of laboratories that convey a scientific image.

- "Quick Start" was made in 1991 by RSI's director of training. It is his personal testimonial to success in the business. It provides an overview of network marketing, the reasons people should get involved, and how to succeed if you have the requisite qualities.

- "The Right Choice" tells why various distributors decided to get involved with network marketing and RSI. It also includes a sales pitch for RSI's products.

I also acquired numerous photocopied handouts, two more videotapes, and eight more audiotapes.

- The audiotapes "You and the Bios Life Diet Plan" and "Electronic Journal, Volume 3" are conversations between Dr. Allan Bruckheim and Edward Nessel, RSI vice president for communications. They discuss Bruckheim's career and the advantages of the *Bios Life Diet* over other diet programs. Bruckheim said he joined Rexall so he could make "more house calls" through tapes such as this and through the distributor network. He said he wants to help more people achieve their health goals by communicating how to prevent disease.

- "The Westchester Study and the Bios-Life Diet Story" and "The Bios-Life Weight Management Program" videos are "fireside chats" with Bruckheim, who assures that he is "a real doctor" who takes care of "real people." The Westchester

Study was described as an 8-week double-blind study done with people recruited through newspaper ads and flyers at shopping malls. They had to be at least 20 pounds overweight. Those on the Bios-Life program had better results than those on another fiber product. Despite this optimistic message, RSI's fact sheet #CF7157 states: "It is prohibited and fully against Rexall Showcase International company policy for any independent Distributor to make any representation and give any warranty that Bios Life Diet will produce the benefits in the study."

- The "Bios Life Weight Management Program" video describes both the products and the need to combine them with exercise, a healthier diet, and certain supplements.

- The photocopied handouts—19 in all—included articles from health-food industry publications, newspaper and magazine articles, scientific reports, and promotional materials from supplement manufacturers.

For those who are serious about making a success of the business, RSI's New Distributor Assignment Packet recommended an initial purchase of \$1,138.20 worth of products, \$91.75 worth of sales aids, and three distributor kits for \$105.00.

Inspirational Meetings

RSI's mission is "to move products of honesty that will enhance health and wellness." Its success formula is to share products that are "emotional, consumable, reasonably priced, and work" in order to share the opportunity to become a

EDITOR'S NOTE:

RSI's medical advisor, Allan Bruckheim, M.D., is associate professor of family medicine at New York Medical College. He writes syndicated newspaper columns and has hosted radio programs through which he has spoken out against quackery on many occasions. He has directed a family practice residency program and headed a committee on drugs and therapeutics of the American Academy of Family Physicians. In 1990, when an article about his Westchester Diet Study appeared in the *National Enquirer*, I asked why the results had not been submitted to a medical journal. He replied that the data belonged to the company that had sponsored the study (*not* RSI).

More recently, I asked how he could be medical advisor to a company marketing homeopathic remedies. He replied that they are not medical products and that RSI gets its advice about them from another doctor whom they consider an expert on the subject. He added that many people believe homeopathic products have helped them and that "alternative" methods may well provide benefits medical science can't explain.

Rexall Sundown's communications director Edward Nessel responded to a preview of this article with the following statement: "In a perfect world in which everyone ate healthy, balanced and nutritious foods every day, kept their weight under control and exercised properly, there probably would not be as great a need or demand for many of our products. Unfortunately, this is not the case. And Rexall International's natural vitamin and other nutritional supplements can indeed play a helpful role in maintaining proper nutrition."

— Stephen Barrett, M.D.

distributor and teach others to do the same. It offers prospective distributors a chance to fulfill the American dream of being their own boss with unlimited earning potential. Most of RSI's recruiting is done at "Business Opportunity" meetings that are hosted by local distributors. RSI prefers the attendees to be "warm market": family and friends who are there by personal invitation. In July 1992, I attended two meetings at a local motel. At the first meeting, the host (Paul) discussed the company's history, products, and philosophy in glowing terms.

The first products described were RSI's *ClearSource* water filters. After predicting that 97% of all medium- and above-income families will use some type of filtration device by the year 2000, Paul stated that RSI's unit will yield water whose quality is the same as that of bottled water—for only 2¢ a gallon. He then described his experiences with RSI's homeopathic products. Paul said he uses *In•Vigor•Ol* "instead of coffee in the morning because "it helps relieve what stress creates, and that's fatigue." After asking whether anyone smoked cigarettes or was exposed to drifting smoke, he touted *Protect•Ol* for "the initial phase in cleansing the body from many environmental pollutants." He then suggested *Calmplex•2000* as "an effective solution to everyday stress, simple nervous tension, and insomnia." Next he touted *Energy Essentials* ("for people who are always on the go, depleting their bodies of certain nutrients") and *Workout Essentials* (supported by a testimonial from a bodybuilder). Then Paul described how the guar gum in the *Bios Life Diet*, when mixed with water, skim milk, or juice, "gently expands in your stomach creating a full feeling. So when you . . . eat the meals you're used to . . . you just eat less."

"Because this is a product regulated by the FDA, we can't make medical claims," he added. "But we can share experiences. A lot of people who have used the *Bios Life Diet* have been very successful in lowering their blood serum cholesterol. . . . [Guar gum] cleanses the system of all those good, fatty foods we all eat. . . . the LDL cholesterol, which is the bad cholesterol, the yellow, gooey, sticky stuff that constricts in arteries and veins and causes strokes and heart attacks. . . . And when this fiber expands . . . the cholesterol sticks to it and flushes it through your system."

Finally, Paul outlined the various steps through which distributors can increase their income by selling products and recruiting other distributors.

The second meeting, held a week later, featured a speaker (Roger) who described his business background and the advantages he saw in affiliating with RSI. "We're looking for a few exceptional people—people who are self-starters, people who are willing to take hold of something and run with it, and make a commitment and follow through to it. This is not a business for wishers. This is for people who want to get involved and do," Roger said. Paul added that those who worked 20 or more hours a week could expect to earn between \$30 and \$60 per hour. He reviewed several RSI products but spent most of the time stressing financial opportunity. This time, when discussing RSI's water-treatment system, Paul cited a *Boston Globe* article which said that there are 20,000 new cases of cancer every year related to chlorine in the water.

On September 12, 1992, I attended a day-long RSI Regional District Conference and Quick Start Training Session for distributors, held at a hotel in Cuyahoga Falls, Ohio. About forty well-dressed people attended, mostly men in their mid-thirties to mid-forties. The principal speaker was Lou Prescott, RSI's president and chief executive officer. The points he made included:

- Document what happens when using the *Bios Life Diet*, so the company can accumulate "solid anecdotal data."

- Americans eat so much junk food we have about 75% . . . deficient in one way or another with essential nutrients. Of course, different people, different lifestyles, demand different nutritional needs. Rexall, which has "the largest deposit of research of information on nutritional supplements and its impact on the human body of any company in the world," did research and came up with optimum formulations for different lifestyles. "The American public has been ahead of the medical community in believing they needed nutritional supplements. Now, a good portion of the medical community is coming on board."

- *Protect•Ol* "goes into the cells and cleanses the cells of toxins." When cells are attacked by toxins, they "cannot operate at optimum levels. So whatever you put into the body can not be converted with optimum efficiency. . . . This product cleanses the body." It is "designed to take for the rest of your life because we live in a toxic environment."

Prescott's remarks were followed by those of a dozen distributors who talked about their success in making money and/or using RSI products. Rexall Sundown's prospectus indicates that Prescott is no longer with the company but will receive severance pay of \$372,970.

In 1992, a class-action suit was filed against RSI, Prescott, and DeSantis by Patrick J. Hines, a former distributor, who charged that RSI was an illegal pyramid scheme and that the profit potential of becoming a distributor has been exaggerated. The suit papers state: "Of the hundreds of individuals who Hines knew as participating in RSI, almost all are inactive and have sustained the loss of most or all of their investment and have sustained additional economic loss." The prospectus states that the suit is "without merit."

The Rexall Tradition?

RSI's brochures and meetings contain many references to scientific breakthroughs, space-age technology, and research facts and figures. Its sales pitches warn about nutritional deficiency, pollution, and the effects of stress. Its products are promised to provide weight loss without hunger; to meet special nutritional needs; to relieve insomnia, fatigue, and everyday stress; and to make you rich and your own boss in the process. Do you believe that RSI's products are effective for these purposes? Do you think its distributors are qualified to determine who may benefit from them?

BRIEFS

Another B₆ warning. Katharina Dalton, a British physician who operates a clinic for treating premenstrual syndrome, believes that nerve toxicity from B₆ (pyridoxine) supplements is much more common than it is reported. In a recent letter, she stated that she lectures frequently and has "yet to meet an audience that does not have a few members who are suffering neurological symptoms with B₆... Too often the early signs are neglected, and it should be noted that they take at least six months... to appear." In 1987, Dr. Dalton reported on more than 100 women who had developed such symptoms as twitching, bone pains, abnormal skin sensations, muscle weakness, and the feeling of electric shocks down the spine [Acta Neurologica Scandinavica 76:8-11, 1987]. A few years later, Dutch experts who conducted a literature search identified twelve controlled trials and concluded: (1) most of these were poorly designed, and (2) there was no evidence that B₆ is effective against PMS [British Journal of Obstetrics and Gynecology 97:847-852, 1990].

Letter scam stopped. Thousands of restaurateurs have received fraudulent letters claiming that the writer's silk blazer had been soiled by a waiter who spilled a drink while the writer was dining at the restaurant. The letters, accompanied by a phony receipt, requested reimbursement for dry-cleaning expense of \$9.20. Six days after the letters were mailed, postal officials began blocking delivery of responses to the letters sent by recipients to an address in Florida. More than 1,000 letters enclosing payment were detained and returned to their senders. The scheme's perpetrator was identified as a British citizen named John Walker, who said he had answered a newspaper ad and had been given a plane ticket and several hundred dollars to set up an office in Florida for the Health Advice Bureau, an organization that may not exist. Florida officials said they would not prosecute Walker because they had their hands full with cases that were more serious and because no victim had lost money. However, authorities in Suffolk County, New York, charged him with scheming to defraud in the first degree, which is a felony.

Libel actions settled. A total of \$34,000 has been paid out-of-court to settle a lawsuit by Dr. Victor Herbert and demands by Drs. Stephen Barrett, William T. Jarvis, and John H. Renner against Loren Israelson, a Utah attorney affiliated with the health-food industry. The problem arose during a speech at the April 1992 Natural Products Expo West in which Israelson said that the four were "vicious and pathological and would stop at nothing" and that *Vegetarian Times* magazine had published a well-written article criticizing them. The speech was tape-recorded and offered for sale, along with tapes of other talks at the meeting, through an ad in *Natural Foods Merchandiser*. The *Vegetarian Times* article, to which the four had strenuously objected [NF 9:15, 1992], led to out-of-court settlements in which they received a total of \$21,000. The magazine also published a lengthy rebuttal letter by Dr. Barrett.

FDA approves BST. The FDA has approved the sale and use of bovine somatotropin (BST), a genetically engineered hormone that increases milk production in cows. Use cannot begin immediately, however, because Congress enacted a 90-day moratorium to give the White House Office of Management and Budget time to study the possible reaction by consumers and BST's economic impact on the dairy industry. Genetically engineered BST, which supplements the cow's natural BST, does not alter the milk or enter the milk supply. Since there is no detectable difference in milk from treated and untreated cows, the FDA has refused to order that products from treated cows be labeled. BST opponents argue that the drug will drive small dairy farmers out of business by increasing an already overabundant supply of milk. Proponents counter that increased production from fewer cows will make the farming industry more efficient. The drug will be marketed under the name Posilac.

Iron warnings urged. The attorneys general of 32 states have asked the FDA to require iron supplemented to be labeled: "Warning—Keep away from children. Contains iron which can be harmful or fatal if swallowed." They have also asked the FDA to require that supplements containing 30 mg or more of iron be packaged in child-resistant blister packs and that the manufacture of iron supplements that look like candy and have a sweet coating be discontinued. Since 1986, according to New York Attorney General Robert Abrams, more than 40 children ages 9 months to 3 years have died in the United States after swallowing iron supplements.

Notable quote: "Although some people can benefit from taking supplements, virtually everyone connected with the health-food industry recommends them unnecessarily and/or inappropriately. In fact, having observed the industry for many years, I consider it a form of organized crime... I have collected advertisements and product literature containing false, misleading, and unsubstantiated claims for thousands of products sold through health-food stores, multilevel (person-to-person) companies, and the offices of unscientific practitioners. Every one of these documents is evidence of violation of federal and state criminal laws." —Stephen Barrett, M.D., testimony at a Congressional subcommittee hearing on dietary supplement regulation, October 18, 1993.

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Extraordinary orange juice. Just Pik'd® is a fresh-squeezed, fresh-frozen orange juice that tastes similar to freshly squeezed juice. It differs from other frozen or packaged juice because it is neither pasteurized nor made from concentrate. (Pasteurization prolongs shelf life but deteriorates flavor.) *Editor's note: Although Just Pik'd® costs about twice as much as juice made from concentrate, it is well worth the extra cost. Availability can be determined by contacting The Fresh Juice Company at 350 Northern Blvd., Great Neck, NY 11021 (516-482-5190).*

Diet-pill companies charged. The New York City Department of Consumer Affairs has charged seven over-the-counter diet-aid makers with deceptive advertising. Six of the seven ads appeared in national women's magazines, and one was in a supplement to the *Daily News*. The companies were Hanover Labs, of Livingston, N.J. (for *Lipotrim*); Martrim, of Lawrence, Ks.; Prolab Nutrition, of Berlin, Conn. (for *Tight and Firm* capsules); Universal, of New Brunswick, N.J. (*Tone 'N'Tighten*), Body by Jay Fitness Enterprises, of Santee, Calif. (*Fat Burning System*); America's Best Nutritionals, of Destin, Fla. (*Trim Now*); and World Wide Marketing, of Hollywood, Calif. (*Nutra Trim*). The products were variously claimed to block absorption of calories, help the body burn fat, and/or guarantee effortless weight loss even while continuing to consume a diet rich in fat and calories.

NRC report boosts fluoridation. A 197-page National Research Council report has concluded that currently allowed fluoride levels in drinking water do not pose a risk of health problems. Based on a review of available data, the NRC subcommittee that wrote the report concluded that the Environmental Protection Agency's ceiling of 4 ppm (parts per million) is appropriate unless new data show otherwise. Levels of 4 ppm or above occur only in a few regions of the country where the natural concentration of fluoride is high. The level in artificially fluoridated water is about 1 ppm. The report debunks allegations that fluoridation causes bone fractures, adverse effects on reproduction, genetic defects, cancer, and several other diseases. It also pinpoints areas in which further research would be desirable. Copies can be obtained for \$35 plus \$4 shipping by calling 800-624-6262.

Government advertising fraud. The Florida Department of Citrus has published a booklet that contains several pages of misleading information about vitamin C. Among other things, the booklet suggests that vitamin C "may offer remarkable protection against heart disease" and "can help prevent tuberculosis." (The latter claim is attributed to "Dr. Irwin Stone," but does not indicate that Stone's "Ph.D. degree was from Donsbach University, an unaccredited correspondence school.) The booklet also claims (falsely) that vitamin C must be ingested daily because it cannot be stored in the body. The Department, which is funded by a tax on citrus fruits, has engaged in misleading advertising for many years. In 1987, for example, its ads suggested the potassium content of grapefruits could help control high blood pressure [NF 4:56].

School lunches unbalanced. According to an Associated Press report, school lunches tend to exceed the percentages of fat and saturated fat recommended by U.S. government guidelines. The report cited a 1992 survey of 545 schools by Mathematica Policy Research of Princeton, N.J., which found that the lunches derived an average of 38% of their calories from fat, with 15% from saturated fat. Agriculture Department officials have expressed concern about this situation. Senator Patrick Leahy (R-VT) has introduced legislation to require school lunches to meet the U.S. Dietary Guidelines.

Food composition book revised. The J.B. Lippincott Company has published the 16th edition of *Bowes and Church's Food Values of Portions Commonly Used*, updated by Jean Pennington, Ph.D., R.D. This 510-page compendium covers 8,500 generic and brand-name foods, based on data from industry, trade associations and the U.S. Department of Agriculture. Each entry includes the amounts per portion of 10 vitamins, 9 minerals, fat (by type), cholesterol, carbohydrate, protein and calories. Supplementary tables indicate the amounts of amino acids, caffeine, gluten, purines, and various other components in many foods. The first edition was published more than fifty years ago. Copies can be ordered for \$29.95 plus \$3.50 shipping from J.B. Lippincott Company, 227 East Washington Square, Philadelphia, PA 19106.

"Slimming" herbs cause kidney failure. Belgian researchers have reported 48 cases of kidney failure among women who had followed an herbal weight-loss regimen at a Belgian medical clinic [Lancet 341:387-391, 1993]. Although the toxic agent was not precisely identified, it appeared related to the presence of *Stephania tetrandra* in Chinese herbal capsules dispensed at the clinic. The authors believe that the cases "add support to the arguments against uncontrolled therapy with herbal preparations."

Lipoprotein(a) update. A prospective 5-year study of 14,916 male physicians aged 40 to 84 years has found no association between Lp(a) levels and the risk of heart attacks [JAMA 270:2195-2199, 1993]. This result conflicts with many previous studies—most of them retrospective—which suggested that high Lp(a) increased the odds of having a heart attack and therefore should be considered a risk factor, particularly in younger individuals and in others with no predisposing risk factors. An editorial accompanying this report concludes that screening a population for high Lp(a) levels is unlikely to be worthwhile because the cost is high, the association with heart-attack risk is unproven, and lowering Lp(a) levels has not been proven to prevent heart attacks [JAMA 270:2224-2225, 1993]. The editorial notes that Lp(a) or its various subtypes may still turn out to be clinically significant, so further research is needed. Lp(a) is a type of low-density lipoprotein (LDL) that has a strong hereditary component and is influenced little or not at all by diet or by most cholesterol-lowering drugs. Reprints of the study can be obtained from Paul M. Ridker, M.D., Brigham and Women's Hospital, 900 Commonwealth Ave., Boston, MA 02215.

UPDATE: HEALTH CLAIMS FOR SUPPLEMENTS

The FDA has proposed to allow claims related to folic acid and birth defects but to ban claims related to five other nutrient-disease relationships [Federal Register 58:53254-53317, 1993]. The standard used to evaluate health claims related to supplements is whether or not there is "significant scientific agreement" that a claim is valid.

The folic acid proposals were issued in response to a Public Health Service recommendation that women of child-bearing age should consume at least 0.4 mg of folic acid daily. One proposal requires folic acid fortification of enriched breads and flours and other cereal grain products. Another would amend food additive regulations to specify foods to which folic acid could be added. The third would permit the labels of products that are good sources of folic acid to state that daily consumption of the vitamin by women of childbearing age may reduce the risk of neural tube defects in their offspring. The most common defects are anencephaly (absence of most of the brain and spinal cord) and spina bifida (imperfect closure of the spinal column, which commonly results in neurological defects). In making these proposals, the FDA noted that doses higher than 1 mg are potentially dangerous because they can mask the anemia of pernicious anemia (vitamin B₁₂ deficiency), enabling neurological damage to progress untreated. These proposals attempt to minimize the risk of folic acid deficiency without significantly increasing the hazard of masking the early signs of pernicious anemia.

The claims that the FDA proposes to ban are:

- *Dietary fiber and cancer:* Although many studies have shown correlations between diets high in fiber-containing foods (whole grains, fruits, and vegetables) and colon cancer, the diets differ in levels of many nutrients and types of dietary fiber, thus making it difficult to ascribe the observed effect to a single nutrient. Because a supplement would contain only fiber and there is no evidence that any specific fiber itself caused the effects seen in studies involving fiber-rich diets, an appropriate basis for authorizing a claim for dietary fiber and cancer does not exist.

- *Dietary fiber and cardiovascular disease:* Although studies have shown relationships between consumption of soluble dietary fibers and blood cholesterol levels, the studies have generally been small, short-term, and unable to distinguish the effects of fiber from those of concomitant weight loss and changes in other dietary components. In addition, description and measurement of types of dietary fiber have not been standardized.

- *Omega-3 fatty acids and coronary heart disease (CHD):* Although ingestion of omega-3 fatty acids may favorably influence blood cholesterol and triglyceride levels and clotting characteristics related to platelets, these factors and CHD are not yet closely related to the risk of CHD. In addition, there is insufficient evidence that consumption of fish oils *alone* will produce the apparently beneficial effects found in studies relating fish consumption to the incidence of CHD.

- *Zinc and immune function in the elderly:* Although adequate dietary zinc is known to be essential for normal immune function, a specific protective role of zinc supplementation among elderly people has not been demonstrated. In fact, there is some evidence from recent studies that high levels of zinc intake will suppress immune function.

- *Antioxidant vitamins and cancer:* While populations with diets rich in fruits and vegetables experience many health advantages, including lower rates of some types of cancers, it is not possible to specifically determine that the two antioxidant vitamins (beta-carotene and vitamin C) contained in fruits and vegetables are responsible for this effect or to rule out the possibility of significant positive effects from nonmeasured components in these foods. Nor is there significant scientific agreement on whether the apparent positive effects of fruits and vegetables result from a single or combined effect of beta-carotene and vitamin C and other nutrients with antioxidant function (such as selenium), from other nutritive compounds in such foods, from nonmeasured components of such diets, or from displacement of other known risk factors within the total diet.

On November 1-3, a symposium on antioxidants, cancer, and heart disease was held at the National Academy of Sciences. The meeting, initiated by the FDA, was cosponsored by the NIH Office of Disease Prevention; National Cancer Institute; National Heart, Lung, and Blood Institute; and U.S. Centers for Disease Control and Prevention. The meeting's purpose was to discuss the available evidence, unmet research needs, and ways to facilitate research to meet these needs. The FDA will consider the results of this symposium along with other evidence before making its final decision about the proposed labeling rule.

Although bills to weaken FDA regulation of dietary supplements [see NF 10:21, 1993] have acquired many co-sponsors, Congress adjourned its 1993 session without voting on the bills introduced by Senator Hatch and Representative Richardson. However, action is expected early in 1994.

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F O R U M

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“Out on a Limb” “Alternative Nutrition” against AIDS

Jack Raso, M.S., R.D.

Are reputable organizations and champions of alternative healthcare combining to shepherd registered dietitians aboard the “holistic” bandwagon?

On November 4, 1993, I attended a conference titled “Alternative Nutrition Strategies for HIV/AIDS,” held in the auditorium of the American Red Cross in Greater New York (near Lincoln Center). Besides Red Cross, sponsors included: Nutritionists in AIDS Care (NIAC), a special-interest group of the Greater New York Dietetic Association; Gay Men’s Health Crisis (GMHC); and Ciatelli Associates Inc., in Manhattan, part of the New York/Virgin Islands AIDS Education and Training Center. A mailing from Ciatelli Associates stated that the goals of the conference were: (1) to inform health professionals about the availability and efficacy of “alternative nutrition therapies” for HIV-infected persons, and (2) to encourage collaboration among “main-stream nutritionists,” practitioners of “alternative nutrition,” researchers, and other healthcare providers. A company representative told me that over 330 people had registered for the conference. She stated that the registrants included physicians and nurses but that most were registered dietitians. The American Dietetic Association had approved the program for continuing education credit. Other attendees apparently included nondietitian nutritionists, “health educators,” and PWAs (persons with AIDS).

According to a flyer, the Training Center for Health Professionals (TCHP) of Ciatelli Associates is a nonprofit organization that gives managerial, instructional, and technical assistance to health and human service providers serving the disadvantaged. The flyer states that Ciatelli Associates has trained more than thirty thousand service providers since 1977 and has had training contracts with many agencies, including the Department of Health and Human Services, the New York State Department of Health, the New Jersey State Department of Health, and the Centers for Disease Control (CDC). It further states: “More than merely

dictating the content of our training programs, TCHP develops industry groups to perform needs assessments. Our training curriculum is developed only after learning from providers and other experts which issues need to be addressed.”

“A Very Unusual Situation”

Co-moderator Dena Rakower, M.S., R.D., made the welcoming remarks. She stated:

We’re not endorsing any particular speakers or any particular supplement or alternative strategy. What we are here to discuss, though, is this controversial subject of alternative strategies for HIV care....What we hope to do is discuss the variety of viewpoints. It’s a very unusual situation, I feel, where we have pulled together people that [are] often feeling very polarized....I think it’s a very exciting thing that we’re starting here, and I hope that, more and more, we can learn from each other and start using these ideas as we think are appropriate.

Rakower apprised us that Joseph J. Jacobs, M.D., M.B.A., director of the Office of Alternative Medicine of the National Institutes of Health (NIH), had withdrawn from the conference “at the last minute.” Michael Jacobson, Ph.D., cofounder and director of the Center for Science in the Public Interest (CSPI), in Washington, D.C., took Jacobs’ place as the first lecturer. CSPI publishes *Nutrition Action Healthletter*. Jacobson’s subject was the “history of nutrition.” He began with what he called a disclaimer: “I know a little bit about nutrition. I know less about supplements—vitamins and minerals. I know virtually nothing about herbs. And I know even less about AIDS.” He added that he was not a historian. Nevertheless, he divided his “somewhat personal history of

nutrition" into five "distinct" ages, ranging from the age of "blissful ignorance," which he said had lasted from prehistoric times until about 1900 C.E. and during which "many people did pretty well," to the supposedly incipient "age of other stuff," an "era" characterized by nutritional supplements and non-nutrient food constituents.

"Nutrient Pharmaco-Therapy"

The next lecturer was Raxit J. Jariwalla, Ph.D., a senior research scientist at the Linus Pauling Institute of Science and Medicine, in Palo Alto, California. Jariwalla advocated "nutrient pharmaco-therapy," which a slide defined as the use of specific micronutrients in amounts at which they exhibit pharmacologic properties. A slide titled "Why Vitamin C in AIDS?" offered a threefold rationale for such use of ascorbic acid: (1) favorable anecdotes and "preliminary observations," (2) demonstration of antiviral effects on both RNA and DNA viruses (in vitro), and (3) inhibition of a retrovirus (avian sarcoma virus) in chicken cells. Jariwalla's talk mainly concerned the effects of ascorbic acid in large amounts on HIV-infected laboratory cultures. Yet he concluded:

Ascorbate concentrations capable of suppressing HIV in vitro are obtainable in blood and body fluids by oral supplementation, and much higher doses by intravenous infusion. Ascorbate in combination with thiols [sulfur-containing organic compounds such as N-acetylcysteine] offers astonishing possibilities for nutrient intervention in HIV infection.... Controlled, large-scale clinical trials of ascorbate and thiol efficacy in HIV-infected persons are urgently warranted.

"Won Over"

The next featured speaker was Carol-Jane Rand, R.D., the GMHC staff nutritionist who had designed the conference. The title of her talk was: "How Much Ascorbic Acid Can Humans Absorb?/The Safety of Megadoses." Rand stated:

When I first started working at GMHC, it wasn't very surprising [that] the clients really wanted to know whether they should be taking lots of multi-vitamins, and basically I was ignorant.... I knew almost nothing about the use of vitamin-mineral supplements—an area which...had never particularly interested me.... I was something of a doubting Thomas with respect to ascorbate when I first started at GMHC and rather mentally pooh-poohed the whole thing.... [But I] was rather won over by reading Dr. Jariwalla's research and talking to some clients.

Rand cited a particular doctor's treatment of AIDS with as much as 200 grams of ascorbate daily—reportedly with minimal diarrhea. However, she explained:

Since urinary excretion with respect to ascorbate is kind of a rough...indicator of how much has actually gotten into...the bloodstream, urinary excretion of ascorbate is used as a flag to see whether ascorbate has been absorbed. What we are looking at here, unfortunately, is a study on one young man. In fact, another proviso...is [that] almost all the studies having to do with megadoses, even the best-controlled ones, were done with an appallingly small sample of people; and so, while the results that I'm going to show tend to sort of confirm each other, we're...talking about extremely small samples and an extremely small number of researchers, too. It's...essentially a group of about six or seven people that I will be quoting over and over again—which is not because...I didn't want to use more references, but because...it seems like most of the research was done by this small group, mostly in the late '70s and '80s.

The work Rand cited included experiments with rodents and an unpublished study conducted at the Linus Pauling Institute. Her handout listed as references seventeen published works: two books and fifteen articles. Three of the articles pertain to experiments with rodents. In the handout's introduction, Rand stated that, "as an HIV/AIDS nutritionist," she had been "exposed to" a body of research "suggesting" that vitamin C in very large amounts "might...mitigate" the oxidation products of chronic infection and "directly inhibit" HIV replication. Despite such iffiness, she concluded in her handout: "Ascorbate plasma levels which might significantly inhibit HIV appear attainable with doses of approximately 3–6 grams ascorbate per day." Moreover, at the close of her talk, she recommended responding to diarrhea merely by reducing the dose of vitamin C, and to nausea by switching to a buffered form.

During the panel discussion that followed, "AIDS nutrition consultant" Amanda Bell, M.S., R.D., opined that the message of the conference was that nutritionists should be political activists for supplementation studies.

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"More than a Little Disdain" for Science

After a break, AIDS activist Fred Bingham affirmatively addressed the question: "Are Antioxidants Useful Co-Therapies for HIV/AIDS?" Bingham is the founder and executive director of DAAIR—Direct AIDS Alternative Information Resources—which he described as a "buyers' club" based in his apartment that sells preparations such as vitamin E, beta-carotene, and N-acetyl-L-cysteine. DAAIR's automated telephone message system provides information on two-hour "Introduction to DAAIR" classes, specifies the business hours of its "members-only store," and offers its free 150-page membership packet. (The sidebar on pages 4 and 5 describes the store and its offerings.)

Bingham mostly read his lecture from his handout. He stated:

As someone who was diagnosed with AIDS in mid-1989, who has since normalized his immune parameters and stayed healthy while maintaining a negative viral titer utilizing the basic theories and clinical practices I am about to discuss, and as someone who has lost all of his closest friends, I find myself understandably frustrated by the slow pace and commercial biases of Western empiricism.

Bingham said he had been a gardener and described his response to the AIDS diagnosis: "I treated myself like I was this garden gone haywire." Later, during a panel discussion, he called his AIDS diagnosis "debatable." He further stated:

There's a massive, gaping black hole in the research out there....I emphasize that this is not because these [antioxidant] compounds are not useful or that they do not possess strong clinical potentials for either slowing or stopping the progression of HIV infection—and I'm a very good example of that. It simply means that no one has yet....[figured] out a way to make...large sums of money from them, or, worse yet, how to make money without economically threatening existing methods that attempt to control this complex constellation of syndromes we call AIDS. I witnessed in agonizing detail the wasting away of each of my friends as if they were under massive free-radical assault, much like that seen under extensive, end-stage chemotherapy....

I come...before you today as a PWA who begrudgingly uses phrases and words such as "possibly

may," "potentially might," "may be," and "might be" with more than a little disdain for the allegedly impartial and cautious scientific methodology.

Bingham said he uses substances such as glutathione (a sulfur-containing tripeptide coenzyme) and St. John's wort (an aromatic herb) intravenously every day. After he finished his "read-along," a moderator remarked: "That was a handful."

Plunging into Murky Water

Clinical nutritionist Amanda Bell shared Bingham's topic. She stated:

On one hand, I want to do anything and everything I can for...the patient, and I'm willing to just step out on a limb. I feel like I need to do whatever it takes to improve quality of life and wellness in this person. And, on the other hand, I want to structure my recommendations around well researched therapies which I can trust as safe and beneficial clinically....I obviously don't want to do any harm....So this is a great conflict as a nutrition and healthcare provider out in the field.

Bell introduced her overview of nine "major categories of natural antioxidants" with the statement: "Antioxidants may [have] a vital role in the challenging and complex treatment regimen for persons with HIV infection." She said: "If I sound iffy on this, I'm not a researcher." Her handout centered on glutathione, N-acetylcysteine (NAC), and coenzyme Q₁₀, but it also referred to catalases, peroxidases, superoxide dismutase, vitamin E, flavonoids, and phenolic acids. According to the handout, a month's supply of just two preparations, "OTC" NAC and coenzyme Q₁₀, could cost up to \$72.

Bell concluded:

To supplement or not to supplement—this is the question....You must take into consideration the cost/benefit of utilizing some of these compounds....

These therapies are available over the counter and are commonly self-prescribed. As a result, [as] persons giving healthcare information, we lose our ability to prevent megadosing and to be able to express unknown side effects. And, in fact...we're not always aware when there are therapeutic successes of these compounds. But, from my perspective, things are changing. Efforts to integrate these alternative

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therapies with more traditional treatments and bring them into our clinical settings are paying off. Our knowledge about antioxidants and their clinical effect is growing rapidly. More persons with HIV infection are presenting to us with extensive antioxidant use, and they are more and more candid about their benefits and their harm. I have personally had great success with a number of [HIV-infected] clients in decreasing subjective sense of fatigue...over an extended period of time using a mixture of well known antioxidants.

In conclusion, there is controversy regarding the theory of oxidative stress and oxidative imbalance and if it exists at all. There is also uncertainty regarding its role in the...progression of HIV infection. Since the water remains murky, we need to continue our efforts to increase the database, expand research studies, and promote the patient/healthcare provider alliance. In essence, what is our primary goal? It is to...[help] persons with HIV infection. For them, and for us, we must take a pro-active position, because researchers will possibly be split in the oxidative-stress controversy for a very, very long time. And this is time that people with HIV infection do not have.

“Herbs Are Your Friends”

After lunch, acupuncturist Letha Hadadi, M.S., gave a lecture titled “Chinese Herbal Medicine and HIV.” In 1991 and 1992, Hadadi was a columnist for *Free Spirit* (“New York City’s Magazine of Personal Transformation”) a bimonthly that reportedly has about 200,000 readers. Therein, she promoted not just acupuncture and herbalism but homeopathy and Bach flower therapy. Hadadi has also conducted walking tours of herb markets in New York City’s Chinatown through the New York Open Center, a nonprofit “holistic learning center” in Manhattan.

Hadadi stated:

I’d like to give you a very different experience this afternoon from what we had this morning. I want to get you experientially involved and remind you that herbs are your friends, friends that you had ever since you were a kid....As you become more comfortable with...herbs...you won’t worry about [milligrams], about dosage, because you’ll remember that herbs are foods, and foods are for us, to keep us strong—and it’s the strong people who stay around.

Then she asked us to join her in “something unusual”—“a little bit of a meditation, a visualization, to bring home this information to you on another level, not the intellec-

Inside DAAIR

DAAIR—Direct AIDS Alternative Information Resources—describes itself in a flyer as a volunteer-operated, nonprofit organization “formed to promote self-empowered healing from HIV disease through the use of natural therapies (particularly nutrients) and minimally toxic drugs.” One of its stated purposes is “to strengthen the entire physical and mental body...particularly by using therapeutic substances with low toxicities, including nutrients and herbs, which are traditionally known to support overall body functions and the ability to fight disease in a *biologically sustainable* manner.” DAAIR’s “basic” supplementation regimens, termed “personal HIV protocols,” range in price from about \$48 a month to more than \$200 a month.

The “DAAIR Buyers’ Club Catalog,” part of its membership packet, lists: 23 “main products,” including chlorella-and-alfalfa tablets; 8 “reduced-price protocol” products; and 54 “adjunct products,” including “enteric-coated” adenosine triphosphate (ATP), “gradual release” vitamin C tablets, shark-cartilage capsules and powder, superoxide dismutase (SOD) tablets, and *Silv-Immune*, a colloid of silver. The membership packet also includes a special form for ordering imported oral and injectable preparations of glycyrrhizin, the sweet extract of licorice root (*Glycyrrhiza*).

Another section, titled “Dietary Guidelines for People Living with HIV,” recommends buying “organic food as much as possible” because “average supermarket

food” is “damaged in a great many ways,” and including “live food” (“food that still contains enzymes”) in the diet because most such foods contain enzymes that “help you to digest them.”

On December 1, 1993, *NF*’s co-publisher Zhixin (David) Xu, M.S., visited DAAIR’s store, which is located in the living room of a second-story walkup on Manhattan’s East 30th Street. Political flyers covered the upper half of the apartment door, which was unlocked. Mr. Xu passed a kitchenette before entering the company of seven individuals, one of whom handed him a membership packet. The following conversation took place between them.

Xu: This is an apartment, right?

DAAIR: Well, temporarily, until there’s enough money to have a store....

Xu (referring to scores of bottles on a large shelving unit): So these are all the herbs or nutrients?

DAAIR: Right....

Xu: So you have different nutrients for different symptoms?

DAAIR: Well, yes. It’s, it’s— That’s one way—yes, yes.

Xu: How about if people don’t have any symptoms?

DAAIR (referring to membership packet): Well, you really should read that....Most viral and bacterial infections, over a long period, take out of the body certain nutrients, which the diet

tual level...but something...deeper and more fundamental.” After requesting that we close our eyes and uncross our legs, she stated:

There are a couple of concepts in Asian medicine that are different from Western herbology and Western medicine, that are extremely important. One of them is heating and cooling. Heating you might call inflammatory; cooling you might call anti-inflammatory....

So now, with your eyes closed, think of something heating. The most heating thing I can think of is fire. We're going to put it below the navel, right around your navel. And that's a big flame. And I'm going to close my eyes and join you, too.

And into that flame we might put breathing that's very gentle, and as we inhale, the flame gets bigger. And what else are we going to put into that? Ginger, pepper—warming herbs that are digestible....Just feel that fire.

And now you're in a kitchen. We might move that fire up towards the liver area and find other warming herbs, like garlic. That stimulates liver. We might move higher, up to the lungs. Don't even take notes now; just visualize this. Echinacea—very heating, very drying, very dangerous for people who have fever....It's very strongly anti-toxin.

As we go, all of this clears our phlegm and puri-

fies our senses. But we also need to cool down. We can't stay hot all the time. Imagine above your head the moon—silver, radiant, purifying. Take it within you. Put your head down and put the cooling essence, then some cooling herbs. Imagine in your lungs honeysuckle. Honeysuckle kills pneumonia germs, anti-inflammatory. In your liver put *Isatis*, wild *Isatis*....[It] kills hepatitis germs.

Other cooling remedies: While we're in the urinary area, put sarsaparilla...anti-inflammatory, antiseptic. Bring that cooling energy all the way down to the bottom of your feet. Now we surround your energy with cooling energy from the moon and from cooling herbs. You're breathing deeply.

You can use this kind of meditation anytime, because even in our workdays, we need this kind of energy all the time...warming, powerful energy the Chinese might call *chi*. We just call it energy, here in the West.

After the meditation session, Hadadi said: “I wonder how many more thousands of years will be necessary of so-called controlled testing before...herbs will be trusted.” She had provided two handouts. One had six packets of herb samples stapled to it. She categorized two of these herbs—false ginseng and *Astragalus*—as “energy (Qi) building.” Hadadi claimed that the latter “raises your energy up and sends your arm out to the surface, out to the periphery.” According to her

doesn't replace; and so the idea is not to cure by taking nutrients, but to replace all those things that the body is really kind of eliminating very quickly in the disease process.

Xu: When you don't have any symptoms really, probably it's not for you?

DAAIR: No. What you should be doing...I would think, is taking a multivitamin and vitamin C, because...those processes are invisible. So, look [at] your idea of what a multivitamin is. You might look on the bottle and—I mean, usually people take one pill a day or two pills a day, but you really want to take much more....

Xu (referring to a multivitamin on sale): So this is not really for people with full-blown AIDS?

DAAIR:I think everybody should be taking supplements if they have any level of infection whatsoever....Everything [here] has been chosen specially for HIV-related diseases....

Xu: What are [Chinese herbs] supposed to do?

DAAIR:They're all kind of antiviral....

Xu: Do you have anything...for losing your hair and losing appetite and losing weight?...You don't have anything specific?

DAAIR:It's very dangerous these days for nonprofessionals... for people who are not doctors, to say anything....One can have a consultation with Fred [Bingham], and he's really studied. He is an expert, and he'll tell you what he thinks....

Now there's a law that anybody who works in a health food store can be arrested if they tell you...“Take this 'cause your

hair's falling out.” So it's very difficult. See, I don't want to take the responsibility....Anyway, I think a lot of these things don't work like Western medicine: you have this disease, so you take this antibiotic. It doesn't work that way. It's much more basic. The whole system has to be healthy, and so therefore you take a lot of things.

But some things are specific....All the information that would be available here [in the membership packet] is for that....You should...ask your questions when Fred speaks at one of the meetings....at the Gay [and Lesbian Community] Center....

Xu: It's very confusing.

DAAIR: I know. That's why I say read this [membership packet] three times, and you'll begin to get it....The concept is to stop the oxidation and take the antioxidants, which help that, like [vitamins] C and E.

Xu: [Do antioxidants] slow down the process?

DAAIR: Well, yes. [They] slow down the disease process by keeping the body strong:...enzymes and vitamins and...amino acids...and herbs....

Xu: How could I decide what is right for me?

DAAIR: It's all in there [the membership packet]....A basic vitamin and antioxidants, and...if you have indigestion...then you would take acidophilus....

Xu: Sometimes, when you take all these different things, it might do something bad. Don't you think so?

DAAIR: Well, probably not.

other handout: dryness and redness of the tongue manifest an excessively rapid metabolism; paleness and puffiness of the tongue manifest underactivity of the endocrine system; and colds and flu can “penetrate” the surface of the body when “defensive qi” is weak.

Hadadi distinguished between Western medicine and Chinese herbalism:

When you open a Western herb book, it'll say an herb is used traditionally to treat something. But that doesn't address...either you the reader or...your client. It doesn't say that this client of yours needs this herb now....

Asian doctors have some ways of looking at the body and the person that seem very primitive. But, with an illness like AIDS, you don't need the fine-tuning diagnosis all the time....The tongue is the internal organ of the body we can look at directly....And if that's hot, if that's dry, if it's red and cracked, the internal organs are dehydrated, too. So we need moistening, cooling herbs....

You can't use a Chinese herb like a Western drug. Sorry....They're intended as food supplements to help metabolism, to help nutrition.

She said that the cost of a month's supply of herbal pills was about \$56. Hadadi told us to contact the Institute for Traditional Medicine, in Portland, Oregon, for detailed literature on Chinese herbalism, and she provided its toll-free number. The requested mailing I received from the institute a few days later consisted of nine flyers. One, titled “Food Therapy—Chinese Style,” states: “Diabetes is classified as a yin deficiency syndrome; spices disperse fluids and can damage the yin, so they are avoided.” It claims that sour (“puckery”) foods tend to restrain diarrhea, leukorrhea, perspiration, productive coughs, sinus drainage, and frequent urination; that “sweet” foods, including most meats, aid digestion; that “naturally salty” foods help to reduce “swellings,” including lymphatic swelling, obesity, thyroid and breast lumps, and “local accumulations”; that bitter foods are useful against infections, skin diseases, tumors, and spontaneous bleeding; that spicy foods are helpful in treating “abdominal pains associated with bloating”; and that “oily, soft, and slippery” foods are helpful to individuals whose hair, intestines, lungs, and skin are dry. Another flyer claims: “At its best, Chinese medicine can cure or help to cure conditions that have been called incurable.”

“Nutrition Specialist”

The next lecturer was Jon D. Kaiser, M.D., a private practitioner in San Francisco who described acupuncture, amino acid supplementation, guided imagery, and homeopathy in his handout as “potentially successful treatment in-

terventions.” The conference circular billed him as a “nutrition specialist.” Kaiser's “comprehensive treatment program for HIV” consists of three categories: (1) “natural therapies” such as acupuncture; (2) “psychological/emotional support,” including “spiritual growth”; and (3) conventional medicine. His “supplement schedule” included daily intake of up to four multivitamin/mineral tablets, plus up to four grams of vitamin C. In part, Kaiser proposed an intake of four to eight grams of vitamin C for chronic sinusitis, an intake of 25 to 75 milligrams of B-complex vitamins in “time released” form for fatigue, and acupuncture for peripheral neuropathy.

An Evidence-Based Approach

The last lecturer was William Kassler, M.D., M.P.H., M.S., a medical epidemiologist in the Division of STD/HIV Prevention at the Centers for Disease Control. Unfortunately, many attendees left the conference shortly after Jon Kaiser's talk. Kassler upheld an evidence-based approach as crucial to clinical decision-making. He stated that a “tremendous paradigm shift” is taking place, a change from opinion-based to evidence-based clinical practice. He expounded:

An evidence-based approach...de-emphasizes intuition, prediction, and unsystematic observations from clinical experience as sufficient rationale for guiding our decisions. [It] emphasizes basing clinical decisions on evidence of safety and of efficacy....exercising reticence about recommending therapeutic modalities that lack this evidence, and...adopting rigorous methodologic criteria for evaluating safety and efficacy. The gold standard has become the double-blind, randomized control trial, but other rigorous methodologies do exist.

The hallmark of a rigorous methodology is that [it is] unbiased [and] reproducible [and] includes appropriate comparison groups and appropriate clinical outcome measures.

When the evidence does not exist, an evidence-based approach would have us exercise caution in interpreting the information gained from unsystematic observations and from studies lacking rigorous methodology. That includes the anecdotal and testimonial claims frequently cited as evidence for alternative treatments....

An evidence-based approach would have us recognize the limitations of authority, intuition, experience, opinion, theory, and passionately held conviction.

In a conference replete with ambiguous or equivocal messages, garbled facts, and mysticism, Kassler came through with refreshing clarity.

Politics of Inclusion?

Later that month, I phoned Victor Herbert, M.D., J.D. (professor of medicine at Mt. Sinai School of Medicine in New York City), The American Dietetic Association (ADA), NIAC, CDC, and NIH.

Dr. Herbert stated that intake of megadoses of vitamin C can kill AIDS patients by superimposing vitamin-C hyperosmotic diarrhea on AIDS secretory diarrhea, thus causing hypovolemic shock. He further stated that excessive intake of vitamin C increases generation of free radicals and impairs immune function. Herbert said he had witnessed only one such case of hypovolemic shock but added that he does not see patients in the emergency room. CDC spokesperson Chuck Fallis informed me that CDC is not aware of any source of information on the incidence of vitamin C-induced hypovolemic shock in AIDS patients. He suggested that I call NIH.

I did not receive a definitive response to my question regarding hypovolemic shock when I phoned NIH in November. I called again on December 3, 1993, and spoke with Karen Lee, public affairs specialist at NIH's National Institute of Allergy and Infectious Diseases, which Lee described as the leading institute at NIH for AIDS research. Lee told me that she personally was not aware of any source of information on the incidence of vitamin C-induced diarrhetic complications. On December 15, she left a message on my answering device: "I've been searching around for information and our AIDS Division suggested that you might call the Linus Pauling Institute. They are developing this concept.... The researcher is Dr. Jariwalla."

Despite the lack of data, exacerbation of diarrhea due to ingestion of vitamin C seems a legitimate issue. As a reasonably healthy but misguided nutrition major in the 1980s, I ordinarily ingested more than 7,500 mg of vitamin C daily in various forms, at least 500 mg at a time and usually with food. Not infrequently, abdominal pangs and explosive diarrhea ensued. "Buffered" forms were not perceptibly gentler.

I described the "alternative nutrition" conference to Nathan Dutko, ADA's Coordinator of Credentialing, as largely a combination of irrelevant opinions and advocacy of unscientific empiricism and medical mysticism. Dutko called ADA's review of continuing education (C.E.) programs "a paper review only." He said that the conference had met ADA's criteria and that C.E. credit approval does not constitute endorsement of a program. I stated that approval of a program for C.E. credit implies approval of the program itself. "That is a common misconception," Dutko responded. After I conveyed a few of the conference's highlights and some background information, he said he didn't know whether ADA would have approved the program for credit if such information had been available during review. I proposed that ADA expand its criteria for approval.

On December 2, 1993, I phoned Varro E. Tyler, Ph.D., Sc.D., professor of pharmacognosy at Purdue University, and told him about Fred Bingham's purported usage of St. John's wort. Dr. Tyler responded: "If he's injecting a crude extract of St. John's wort, he's doing himself more harm than good." Tyler also stated that two pigments in the herb—hypericin and pseudohypericin—are anti-retroviral and that mild photosensitivity is a possible side effect of injecting them.

On the same day, NIAC's chairperson responded to my two tape-recorded requests for information. On my answering device, she stated that she hadn't been "really in charge of the conference" and would ask two people to contact me. The next day, I left a message for her on NIAC's answering device, stating that I would rather hear her assessment of the conference than that of its designer, Carol-Jane Rand. I have not received a response to this request.

Later that day, Rand called on behalf of NIAC. I asked her what she thought the conference had accomplished. Rand opined that it had "accomplished an enormous amount" and that it had had "an equal number of proponents and critics." She stated that the "two major objectives" of the conference had been "to get a dialog started" and to present "new ideas" to "university-trained nutritionists." Referring to the conclusions in her handout, I said it was inappropriate for her to have drawn any conclusions from insufficient information. She responded, in part: "You may be correct."

The Bottom Line

Will clinical dietitians—mostly unsung team players—become crowdpleasing empirics and mystics? I doubt it. However, I also doubt that dietitians or their clients will benefit from consorting with such types. Far be it from me to derogate educating dietitians and other health professionals about alternative medicine. But, while alternative practitioners and purveyors of dubious products may clue us into their philosophies, they do so only promotionally. Laxity on the part of proscientific organizations, however well-intentioned, will invite further inroads by nondietitian pseudonutritionists.

But the real bottom line lies beyond the watering-down of the dietetic profession, the diffusion of responsibility, and the doublespeak of semi-approval: It is one thing for practitioners to discuss questionable methods; it is another to encourage, albeit tacitly, desperate people to use them.

Jack Raso is co-editor/publisher of *Nutrition Forum* and author of *Mystical Diets: Paranormal, Spiritual, and Occult Nutrition Practices* (Prometheus Books, 1993) and *"Alternative" Healthcare: A Comprehensive Guide* (scheduled for publication in mid-1994).

BRIEFS

“Organic” law strengthened. Under a new law, producers, processors, distributors, and retailers in Texas may not label, advertise, or represent as “organic” any food or fiber without being certified by the State or by a designated organic certifying agent. The law defines organic food as “food produced through organic farming and processed, packaged, transported, and stored to maintain maximum nutritional value without the use of artificial preservatives, coloring or other additives, ionizing radiation, or synthetic pesticides.” Organic farming is defined as “a system of ecological soil management that relies on building humus level through crop rotations, recycling organic wastes, and applying balanced mineral amendments, or that uses, when necessary, mechanical, botanical, or biological controls with minimum adverse effects on health and environment.” Once regulations have been established, the Texas Department of Agriculture may charge annual certification fees of up to \$5,000 for processors and \$2,500 for producers, distributors, retailers, and certifying agents. Violators of the law could be criminally prosecuted or subjected to a civil penalty of up to \$500 per day.

Notable quote. “Unnecessary surgery is the abusive use of what works and is entirely different from quackery, which is the use of what does not work. Another big difference is that quackery is organized. There is no national organization of ‘Surgeons Dedicated to Unnecessary Surgery,’ but there are national organizations dedicated to quackery.” —*Victor Herbert, M.D., December 1993 American Health*

Calories underestimated on food labels. Researchers who purchased and analyzed samples of various “diet” and “health” foods found that nearly all of 20 products regionally distributed or locally prepared had significantly more calories than indicated on their labels [JAMA 270:1454–1456, 1993]. Nationally distributed foods (20 products tested), however, had accurate caloric labeling. The researchers believe that the understatement of calories was not due to random error and could cause consumers to underestimate their caloric intake. Reprints of the study can be obtained from David B. Allison, Ph.D., Obesity Research Center, 411 W. 114th St., Suite 3D, New York, NY 10025.

Mail-order megabucks. *Diet Business Bulletin* has reported that Susan Powter’s Stop the Insanity™ Program grossed an estimated \$50–\$60 million in 1993 and \$100 million since its inception, netting an estimated \$15 million for her. The program, promoted through infomercials and other ads, sells for about \$80 plus shipping. It includes five audiocassettes, a videotape, a guide to food fat content, a low-fat recipe book, and calipers for monitoring body-fat percentage. Ms. Powder, who says she lost 133 pounds using her methods, stresses fitness as a goal and warns against fad diets.

Cholesterol-lowering reduces carotid artery thickening. A 4-year double-blind study has demonstrated that improving blood cholesterol levels can reduce or stop atherosclerotic changes in the main (carotid) arteries to the head [Circulation 88:20–28, 1993]. This conclusion was reached by comparing 24 patients who received cholesterol-lowering drugs (cholestipol and niacin) with 22 patients who were given placebos. The drug recipients had significant declines in total and LDL cholesterol levels and increases in HDL cholesterol. Other studies have found that improved cholesterol levels produced similar effects in the coronary and femoral arteries. Reprints can be obtained from Wendy J. Mack, M.D., USC School of Medicine, 2250 Alcazar St., Los Angeles, CA 90033.

“Fountain of youth” ring sentenced. David Halpern, of Pebble Beach, California, and his sister and brother-in-law have received prison sentences for conspiracy and other felonies involved in operating an international black market in unapproved “fountain of youth” drugs. In 1992, the trio was charged with illegally importing more than 15 tons of products promoted for the treatment of more than a hundred diseases and conditions. The products, whose market value exceeded \$5 million, included procaine derivatives such as *Gerovital H3*, “sexual tonics” containing yohimbine and methyltestosterone, and injectable animal tissues used for “cell therapy.” The products had been imported for sale to wholesalers, health food stores, gymnasiums, chiropractors, and individual consumers. Halpern was sentenced to two years in prison and three years supervised release. The others were each sentenced to eight months in prison and three years supervised release.

Food consumption trends. Household food consumption data from the 1977–78 and 1987–88 Nationwide Food Consumption Surveys conducted by USDA’s Human Nutrition Information Service show that Americans have been shifting their eating patterns. The overall shift has been away from animal products and toward crop products, but the changes tended to vary with household income. For example, whereas wealthier households generally consumed more fresh fruits and dark-green vegetables, poor households tended to consume less. The full report, *Changes in Food Consumption and Expenditures in American Households During the 1980’s*, #SB-849, can be obtained for \$12 plus postage by calling (800) 999-6779 or (703) 834-0125.

Rare animals under siege. Many restaurants in China serve foods made from endangered species of wild animals. Many of these foods are popular because of traditional beliefs that they have great medicinal value. Eating rare and expensive game is also a popular way to flaunt wealth.

F O R U M

Nutrition

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Progressive or Renegade?

Shari Lieberman Up-Close

Part 1

Jack Raso, M.S., R.D.

Shari Lieberman is the only dietitian The American Dietetic Association (ADA) has disciplined for violating its contemporary ethical standards, which were established in 1985. In 1986, ADA censured her for failing to adhere to two Standards of Responsibility. In 1987, Dr. Stephen Barrett asked ADA to determine whether Lieberman was still violating the standards. No formal investigation took place, however, because she resigned her ADA membership after ADA notified her of Barrett's complaint. In 1989, new charges were filed, based on alleged misinformation in her column in the magazine *Better Nutrition for Today's Living*. Last January, after a lengthy appeals process, ADA suspended Lieberman's Registered Dietitian credential for a period of at least three years for violating Principle 7 of the Code of Ethics for the Profession of Dietetics. Principle 7 states: "The dietetic practitioner practices dietetics based on scientific principles and current information."

Free Spirit?

On January 20, less than two weeks after the suspension took effect, *NF* associate editor Zhixin (David) Xu (pronounced "she"), M.S., called Lieberman to arrange a consultation. On her answering device, he said he had read her ad in *Free Spirit* ("The New York City Magazine of Personal Transformation"). Lieberman's "directory" listing in the magazine's December 1993/January 1994 issue included: a close-up of her; the initials "PhD, CNS, RD" after her name; and, just below these initials, the terms "Clinical Nutritionist," "Preventive Medicine," and "Progressive Nutrition." Her listing in the February/March 1994 issue included the same initials.

Lieberman is a "health editor" of another bimonthly, *Newlife* ("America's Holistic Magazine"), which claims 250,000 readers. Its November/December 1993 issue included a nearly

identical ad, which stated: "Stress—including emotional, environmental, physical, chemical and mental—has a direct impact on our nutritional requirements. Stress lowers our body reserves of vitamins and minerals and at the same time increases our needs." The latter ad billed Lieberman as a clinical nutritionist and exercise physiologist; the initials "CNS" were absent. The March/April 1994 issue of *Newlife* carries the same ad.

"CNS" stands for "Certified Nutrition Specialist," a "credential" available from the Certification Board for Nutrition Specialists (CBNS) to holders of nutrition-related advanced degrees. Lieberman is the board's secretary. A January 1994 mailing from CBNS (dated Fall 1993) offered "certification without examination" to applicants with a master's or doctoral degree and, respectively, 14,000 or 10,000 hours of "qualifying experience." Such experience includes consulting, patient care, product development, oral presentations at "journal clubs," writing a book chapter (worth 400 "bonus" hours), and other activities.

Lieberman received her doctorate in 1993 from The Union Institute, an "alternative" school that offers B.A., B.S., and Ph.D. degrees in customizable fields through "distant learning" programs. The institute has offices in Cincinnati, Los Angeles, North Miami Beach, Sacramento, and San Diego. Graduate school enrollees, called "learners," must design their own programs, develop them in consultation with faculty advisors, implement them, establish and chair their own doctoral committees, and draft their own transcripts. There are no compulsory courses, and faculty members function primarily as "facilitators." The doctoral program necessitates only 35 days of residency: 10 at an entry colloquium, 15 at school-sponsored seminars, and 10 "peer days." Peer days are interdisciplinary sessions that do not strictly entail residency; only learners arrange and attend them.

A 1993–1994 introductory booklet describes The Union Institute's doctoral program:

The Graduate School requires individually tailored plans of doctoral study that lead to proficiency in the fields of study. There are no prescribed courses.... Each plan is designed to continue, capitalize upon, and recognize competency in accord with the learner's and the committee's definition of proficiency at the doctoral level.

No credits are counted; rather, an entire program is scrupulously planned and evaluated. Rather than completing a series of courses, learners move through a series of stages....

[R]ecognition may be granted for prior learning that has a demonstrated relationship to the learner's statement of proficiency at the doctoral level. Adjunct faculty members... perform the evaluation of prior learning. Evaluation may include criticisms of performances, scored grades on written examinations, and/or product assessments, done in collaboration with the learner and core faculty advisors.

In July 1992, I attended a Union Institute entry colloquium for two days and concluded that the significance of the institute's degrees is questionable. *Mystical Diets* (Prometheus Books, 1993) describes my experience.

Lieberman's "project demonstrating excellence" (PDE), The Union Institute's equivalent of a dissertation, is titled "Functional neuromuscular stimulation: A non-invasive approach for objective evaluation of muscle fatigue and recovery characteristics." For her PDE, which is some seventy-five pages long, typed and double-spaced, Lieberman measured the effects of a high-carbohydrate drink and a high-fiber drink (placebo) on the performance of paralyzed leg muscles in five males with spinal injury lesions.

Lieberman has advertised regularly in both *Free Spirit* and *Newlife* for several years. For the latter periodical, she has also written an advice column, which was called "Nutrition Hotline" in 1989 and 1990 and is now called "Q & A On Nutrition and Health." Below are examples of the questionable counsel in this column, with cover dates in parentheses.

- "[Bad breath] could be the result of a dental problem or some digestive disturbance. You could try any or all of the following: a digestive enzyme, comfrey-pepsin (herbs), chlorophyll, a fiber supplement and acidofilus [sic]." (January/February 1990) [In *The Honest Herbal* (1993), Varro E. Tyler, Ph.D., Sc.D., writes: "Although comfrey is presently one of the most common herbs sold to the American public, there is reason to believe that using it internally is definitely hazardous to the health. All comfrey species investigated have been found to contain hepatotoxic pyrrolizidine alkaloids."]

- "I have had excellent clinical results using vitamin B6 along with niacin [to treat neuropathy].... Phosphatidyl choline may also help." (March/April 1991) [Vitamin B₆ in high doses is neurotoxic.]

- "I have found the following to be extremely effective [against herpes simplex virus type 1]: L-lysine, beta-carotene, and Omega 3 fatty acids (fish oil). The herb Black Walnut has been used with success by many for this problem." (July/August 1991)

- "Taking bromelain internally as well [as applying fresh pineapple to a scar] may be useful [in diminishing the scar]." (March/April 1993)

- "Your concerns [about antibiotic therapy] are certainly justified. This [development of resistant strains] is a major pitfall of constant antibiotic intervention. The following herbs have been used for centuries for... [nonspecific urethritis] and related problems: uva ursi, buchu, garlic and raspberry leaf." (September/October 1993)

- "I have found that avoidance of refined sugar products are [sic] extremely important [for bladder control]. Also, acidophilus supplementation may be useful as well." (March/April 1994, under the heading "I Gotta Go.")

- "Your concerns [about taking antibiotics for prostatitis] are valid.... Saw palmetto is a natural herb used for centuries for prostatitis. Pygeum africanum is yet another herb which has demonstrated excellent results as well." (March/April 1994)

The March 1987 issue of *Whole Life* included an ad that described the "progressive screening tools" Lieberman utilized: (1) "hair analysis," whereby "hair is used instead of bone to assess mineral imbalances and toxic metal accumulation"; (2) iridology, whose basic premise is that "the condition of all organs and systems in the body is 'mapped' in the iris"; (3) "saliva test," wherein "saliva is crystallized to find what specific herbs an individual needs for the healing process"; (4) "nutritional blood interpretation," wherein blood is "used to find nutritional imbalances"; and (5) "nutritional kinesiology," which involves "muscle testing" and apparently is a variant of a vitalistic system called applied kinesiology.

Lieberman continues to write an advice column, called "Nutrition Hotline," for *Better Nutrition for Today's Living*. Identical leaflets I received from the University of Bridgeport (Connecticut), one in 1992 and another recently, list her as a faculty member in an 18-weekend M.S. program in human nutrition. Moreover, she has coauthored two books: *Design Your Own Vitamin and Mineral Program* (1987) and *The Real Vitamin & Mineral Book: Going Beyond the RDA for Optimum Health* (1990). In both books, she stated:

My becoming a... nutritionist—as well as my writing this book—came about in a rather roundabout way. Initially, I wanted to be a medical doctor. I was interested in science, and I wanted to work with people, to help them. I thought being a physician would allow me to do this.

However, as a pre-med student, I learned that traditional Western medicine takes quite a rigid and fragmented approach. It is primarily concerned with treating isolated symptoms and diseases, rather than promoting the health of the whole person.... [I]t became clear to me that nutrition should be our first line of defense if an illness or condition is not life-threatening. Compared... [with] modern Western medicine,

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All correspondence should be directed to Jack Raso at the above address. Phone: 718-275-0414 Fax: 718-997-8227

the nutritional approach is a safe, nontoxic, effective alternative.

The Real Vitamin & Mineral Book recommends as "ODAs" ("Optimum Daily Allowances") for men and women: 10,000 to 50,000 IUs vitamin A, 25 to 300 mg niacin or niacinamide (or a combination of both), 25 to 300 mg vitamin B₆, and 500 to 5,000 mg vitamin C. Intake of these nutrients at levels approaching Lieberman's maximum "allowances" can have adverse effects.

Preliminary Information

Xu spoke with Lieberman by phone on January 21. Lieberman told him:

We'll go over diet and exercise and whatever else you need. There are several screening tools. One of them is hair mineral analysis. That will give me an idea of the balance of calcium, magnesium, [and] zinc [and will tell whether you] were... exposed to anything toxic in the environment, like lead or mercury. It tests for about twenty-two minerals.

I also do an herbal crystal test, where the saliva is crystallized, and through the pattern that's formed, you could see which herb or plant substances an individual needs to heal. For example, is there an underlying hormonal problem? Do I need to work on your immune system? What areas need to be worked on? And then which herb or plant substances would be best suited for you?...Everything's sent out.

The fee for the visit is \$175, and that includes the test[s]. The follow-up, two weeks later, is \$125. I get all of your test results back. You and I sit down. We go over everything in detail; so when I design your program, you'll know exactly what you're taking and why.

After that, I generally follow up one to two months later, five to six months later. So it's not the kind of thing where you have to keep coming back to me all the time....

I think it's important that you understand exactly what you're taking and why you're taking it....[The first visit]...will be about forty-five minutes to an hour....It takes...at least forty-five minutes.

Xu inquired about insurance. Lieberman responded: "Well, you know, I'm a Ph.D., and sometimes they do [cover charges]. It is certainly worth giving it a try. There's nothing to lose by doing that."

A few days later, Lieberman told Xu not to consume onion or garlic on the day of the appointment.

The First Consultation

In an interview in the January 1993 issue of *Health*

Foods Business, Lieberman stated that she saw about thirty people a week in her private practice and that health food stores are "sometimes the only place where people can find [nutrition] information." However, she cautioned health food retailers against saying "anything that could be misinterpreted as a prescription or cure," adding: "It's all in the way you say it."

Xu's first consultation with Lieberman took place on January 28 in the spacious living room of an apartment in a luxury high-rise near Manhattan's Washington Square. Born and raised in mainland China, Xu is 30 years old and reasonably healthy. He is not a health professional. He answered all of Lieberman's questions honestly except a question regarding his occupation (he is co-publisher of *NF*). In the room were a computer, a shelving unit, a sofa, a large exercise device, and several tennis trophies. On the shelving unit were a bodybuilding supplement (*Hot Stuff*) and a liquid ginseng preparation.

Xu noted the latter. Lieberman stated:

I feel much more comfortable using herbs and medicinal plants than drugs. And, you know, when people—when physicians, when doctors—become a little arrogant...when you talk about herbs, I say, "Let me ask you a question: You want to use something that people have been using for four thousand years, effectively, or do you want to use something that someone's been using for twenty years, with three pages of side effects?" It's not a trick question, but I think we're going to go over it with you. It's very funny, actually.

After asking Xu his birth date, she said: "I've had an office my whole life, and what happened was, one building closed and another building this; and I just— It was impossible...."

Xu inquired: "You have been always practicing out of this building?"

"No, no," Lieberman replied. "I've had an office actually most of the time."

She used scissors to cut about a tablespoonful of hair from Xu's nape and put the sample in a small bag. Then she asked his weight.

"I used to weigh 155," Xu responded. "Now it's only like 140."

When she asked Xu his height, he expressed uncertainty. Lieberman told him to stand and stated: "I'm five-seven and a half. You're at least as tall as I am. I'm not wearing heels. We're about the same height. We can go shopping together!"

She also asked Xu his occupation, address, and phone number and inquired whether he smoked and how long he had lived in the borough of Queens. Later she asked: "Is there any past medical history I should know, David—any illness or surgery, anything you can think of?"

"I used to get colds when I was in Peking, China...like

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flus, all the time," Xu responded. "But since I came here—it's surprising—I never get it anymore."

"It's usually the opposite, do you know that?" said Lieberman. "Usually people move here and they start getting sick. That's funny.... You're the first person I've seen in a long time who felt better living in New York."

In response to her question concerning his family's medical history, Xu stated that his grandmother had had high blood pressure and had died of a stroke, that his father had had cataract surgery, and that his 57-year-old mother was suffering headaches and unspecified symptoms.

Lieberman inquired: "What are some of the things you want to work on, David? Is there anything specific? You talked about the hair loss; that was one thing."

"My hair, my weight," said Xu.

"When did the hair loss start?" she asked.

"I think probably it started a year ago," he replied. "I don't know [if] it's normal or...what."

"Not necessarily," said Lieberman. "When did the weight loss occur? Did that also occur over the year?"

"Yes," Xu replied. "Like, all...[my] jeans used to be tight, and now...[they're] so loose...[I can't] wear [them] anymore."

"Are you getting any heart palpitations at all?" Lieberman asked. "Do you ever feel your heart beating? If you're laying down at night, do you...feel the sensation?"

"No," said Xu.

Lieberman asked: "Have you felt unusually tired, or have you felt unusually hyper?"

"I think I'm getting more nervous," Xu replied. "I don't know why. I used to be very calm, the first few years I'm in this country, and nowadays, it's just—"

"Living in New York, babe," Lieberman explained. "You were very calm and much more easygoing, and now you find yourself more nervous; and that wasn't the problem before."

"Yes," said Xu.

Lieberman stated: "Okay. I think I know what's wrong with you, by the way; so I want to ask you some more questions."

Xu added: "When I was...a high-school/college student, I used to...[have] a lot of dreams, nightmares even."

"Yes."

"Nowadays," he continued, "I just could not, no matter how—"

"You don't," Lieberman interrupted, "or you don't remember any of your dreams. You don't even recall dreaming. How long has that been?"

Seven years, Xu answered.

"How is your short-term memory?" asked Lieberman.

"Is there any change in that? Do you forget, if you saw a movie, what the name of the movie was? Are you forgetting things?"

"I think it's fine," Xu replied.

"Is there any change in your concentration?" she inquired. "Like, when you read something, do you feel that you have to read it more than once? Has there been any change in that at all?"

"No," said Xu.

"Are you sleeping okay?" she asked. "Do you have any problems falling asleep and staying asleep?"

Xu answered: "I think I could not sleep too much nowadays. Like, I go to sleep...one o'clock and I still wake up at six or seven."

"When you get up at 6:00 A.M.," she queried, "are you kind of wired when you wake up? Are you a little wired when you wake up in the morning?"

"What do you mean, 'wired'?" he asked.

Lieberman responded: "Almost that nervous kind of— You feel like, you know, when you get out of bed, that—"

"I feel that I'm not ready to really get out of bed," said Xu. "Usually I stay...[in bed] for thirty minutes or something. I wait until my alarm goes off."

Ad in 1993 issue of *Newlife*

Shari Lieberman, Ph.D., R.D.
Clinical Nutritionist
Exercise Physiologist



PREVENTIVE MEDICINE
PROGRESSIVE NUTRITION

THE TIME HAS COME FOR NUTRITION TO TAKE ITS RIGHTFUL PLACE ALONGSIDE MEDICINE AND OTHER THERAPIES

Nutrition has emerged as an alternative and adjunctive therapy for virtually all areas of health care. Medical research has shown that nutrition is necessary in the prevention and treatment of cancer, heart disease and diabetes. The National Cancer Institute has stated that over 30% of all cancers could be avoided through diet modification and as much as 90% could be prevented if environmental carcinogens are avoided.

Research has demonstrated that excesses of certain nutrients enhance immunity. Nutrition has also been shown to be important in the treatment and prevention of osteoporosis, intestinal and bowel disorders, skin problems, hormonal problems, allergies, hypercholesterolemia as well as other related problems. Excesses of certain nutrients have also been shown to be protective against environmental pollutants. Stress - including emotional, environmental, physical, chemical and mental - has a direct impact on our

nutritional requirements. Stress lowers our body reserves of vitamins and minerals and at the same time increases our needs.

To OPTIMIZE and INDIVIDUALIZE your nutritional program I use the most progressive non-invasive nutritional screening tools. The tools enable me to create an OPTIMAL NUTRITIONAL PROGRAM that allows the body to use its remarkable capacity to heal itself. In addition, I incorporate diet and exercise into your program to make it complete.

Understanding your OPTIMAL NUTRITIONAL PROGRAM is as important as the program itself. I spend time explaining all your results in detail so that when I design your program, you will know exactly what you are taking and why. Education is an important part of patient care. It allows patient independence rather than dependence so frequent visits are not necessary.

If you would like more information, please feel free to call.

(212) 529-1297

Ask About my New Weight-Loss Program

Lieberman asked: "Do you urinate frequently? Is it normal? Do you wake up at night to go to the bathroom? Anything unusual like that?"

"No," said Xu.

"Do you move your bowels every day normally?" she asked.

"Yes."

"Has there been any change in that at all?" she queried. "Is it more frequent during the day, or is it just once a day normally?"

"No change," answered Xu.

"Have you felt unusually tired?" she asked.

"No."

"Have you felt any, you know, the malaise like you're about to get sick, but you don't—like you feel like you're getting a flu, but you don't—[for example,] a little sensation in your throat? Anything like that?"

"No."

"Great," Lieberman responded. "Okay, fine. Is there any other symptom going on with you? Even if you think it's not related, is there anything else I should know? I—I have a feeling what's going on with you, and I will tell you in a moment."

Xu replied that he had "sort of" lost his appetite. "I'm not that interested in going to the restaurant," he said. "And usually I eat so simple at home now."

Lieberman asked him: "Have you noticed any change in your sex drive, libido? Is that down?"

"Not really," said Xu.

"It's the same."

"Yes," he stated.

"Okay," said Lieberman. "Is there anything else you've noticed that's changed?"

Xu responded negatively.

"A Little Bit of an Endocrine-Thyroid Imbalance"

Lieberman stated:

My opinion's that I think it's your—I think—I think you have a marginal thyroid problem. I'm telling you that just from what you told me today. When I get the saliva test back, it will show me; so will the hair. I don't think it's severe enough that it would show on a blood test, by the way. I think that on a blood test, it would probably be normal. But it's just off enough to create—It could create hair loss, nervousness, loss of appetite, weight loss. Some people do get palpitations, by the way. You don't, because I had asked you about that already.

I think that there's a little bit of an endocrine-thyroid imbalance we see right now; and when I get your results back, we can see that for sure.

Let me show you what I would like you to do. Are you taking any vitamins or minerals now, David?

Xu told her he takes vitamin C in both "time-released" and chewable forms. He said he hates swallowing pills.

Lieberman responded:

You know what I should do, then? Then I should make sure that I give you things in capsules. I think you'd have a much easier time with a capsule than a tablet. These Americans, we're used to swallowing, like, you know, twenty-five different pills at one time. But I can give you capsules, so you'll have a choice of taking the capsule or opening it up and putting it in juice. Okay? The vitamin C I can give you in a powder. That's easy. Put it in some juice, and just mix it up and drink it down....

I'm going to give you a couple things today really just for the thyroid. I'd like to get your results back before I do anything else. All right? I don't just want to give you things by chance.

I'm going to give you a liquid kelp extract. It's like seaweed, and it contains iodine, which is food for the

Progressive Nutrition?

Herbal crystallization analysis (HCA) is performed by having the patient lick a slide, which is sent to a laboratory for analysis. The lab then issues a report based on crystal patterns that supposedly indicate organ dysfunctions and herbs that the body needs to remedy them. The test is reportedly based on the work of Rudolf Steiner, an occultist who, in the 1920s, developed a system of identifying botanical specimens by crystallizing the sap with a copper sulfate solution. Proponents of the test purport to match the crystal patterns of the saliva with those of about eight hundred herbs. Neither HCA nor the theory behind it has the slightest validity.

Hair analysis is performed by obtaining a small quantity of the patient's hair, usually from the back of the neck, and sending it to a commercial laboratory. The lab then issues a computerized report listing supposed deficiencies or excesses of minerals. Some reports include elaborate specu-

lations about the significance of these values relative to disease, and some also include suggestions for supplementation. Medical authorities agree that hair analysis is not an appropriate way to assess the body's nutritional state. It has limited usefulness as a screening procedure for the diagnosis of heavy metal poisoning [JAMA 254:1041-1045, 1985].

In 1985, New York Attorney General Robert Abrams filed suit against a bogus nutritionist and the laboratories he used for HCA and hair analysis. The HCA laboratory (Herbal Tracers, Ltd., of Hewlett, N.Y.) agreed to pay \$5,000 for court costs and penalties and to stop representing the test as valid for use in the diagnosis, prevention, or treatment of disease. The hair analysis laboratory (Doctor's Data, of Chicago) agreed to pay \$25,000 and to stop accepting human hair specimens from residents of New York State unless it could obtain a permit from the state department of health.

—Stephen Barrett, M.D.

thyroid. It's natural. Okay?...It has a little eyedropper, and you're gonna do four drops a day.

"Into my eye?" asked Xu.

"No," said Lieberman. "Little juice or a little water. You're gonna drink it; you're gonna take it orally. Okay? I'm gonna ask you to do that and—"

Xu interrupted: "So basically this is for prevention? Or do I have a problem? I mean—"

"I think you may have a marginal problem with your thyroid," Lieberman stated. "I— I think that is what's going on. Okay? When I get your test results back, it will [tell me if] that [is so]."

Xu asked: "But I have to start taking this now, or wait until the test is—?"

Lieberman replied:

Try taking it now. Because it's—it's—it's safe and it's natural, and I don't—I would want you to start it immediately to see if there's a *ch*—I mean, I would like to stop some of this between now and when I see you. I would be very happy.

So I want you to take the kelp. The vitamin C—I'd like you to take a thousand milligrams breakfast and dinner.

Xu responded: "I tend to take...not that much, because...sometimes I'm afraid if I'm taking, swallowing too much, it's gonna do more harm than good."

Lieberman assured him:

No. Would you rather take the vitamin C as a powder? And then you don't have to swallow a pill. Get a powder. It's easy. Just put it in some juice; maybe use a quarter of a teaspoon. It's very simple.

And—the sleep thing. I don't want to do anything for that until I get your results back. Okay.

Xu stated: "Before I decided to see you, I was thinking: 'Could...weight loss...[be] related to my diet?'"

"Yes, yes," answered Lieberman. "Your thyroid could be related to your diet and your nutrition. If you're not eating enough, if there's been a change, you could have created a little bit of a problem, absolutely—yes."

"It's Not Medicine"

Next, she addressed Xu's hair loss: "There's one other thing I want you to do topically. It's something you have to do with your head. You're going to get— It's called cayenne or capsicum."

Xu remarked: "The impression I got from your ad was...[that] you are not gonna give me anything—"

"No," said Lieberman. "I wanna give you—I—"

"I was thinking," Xu continued, "you are going to tell me: 'Eat more carrots, eat more beef, or eat more what'—that kind of advice. It was a little bit surprising that you are telling me to take vitamins."

"Yeah," responded Lieberman. "I'm gonna go over the diet with you next. That's not going to be enough to make a change with what you're coming in with. Okay? I don't know that you need to swallow a lot of things, but—"

"I don't like to take medicine," said Xu. "That's why—"

"It's not medicine," declared Lieberman. "You can eat seaweed if you don't want to take the pills. I don't care how you do it. You could— If you want, you could eat seaweed every day. You can do that instead. Be my guest. But there's no other way that I'm gonna get iodine down your throat, unless you ate seaweed. You can. It's just easier this way."

Xu responded: "It's just my impression: I thought...that's the reason that I don't want to go to...a physician...—because they are going to try...to prescribe a drug...medicine for me."

Lieberman stated: "I will not prescribe drugs nor medicine to you [because]: (a) I'm not a physician [and] (b) that's not my philosophy. No, I'm a P— I'm a doctor—"

"But these pills I have to take—" Xu interrupted.

"The *World Organic Liquid Kelp*," Lieberman explained, "is just seaweed extract. It's seaweed in a bottle; that's what it is. Okay? The vitamin C— There is no way I can get this dose of vitamin C [2 grams/day] down your throat through food in this country. It's impossible."

"You think so?" asked Xu.

"If you find a way of doing it," she told him, "you'll win a Nobel Prize. It's impossible." She further stated:

The cayenne and the capsicum—...I'm not asking you to eat it. What I'm asking you to do is to— You're gonna make a little paste with water, and you're gonna massage your scalp with it...

Let me tell you how to do it, because what that does is...it increases blood supply to here [the scalp]. So I wanna address the hair loss immediately, okay?

This is a hot spice. Okay? It's like hot red peppers, where [sic] people put in, like, Indian food. Okay. You'd better be really careful with this, man. You better not touch your eyes. You have to be very careful. This stuff burns. Okay?...

You're gonna buy cayenne capsules. It's just gonna be the herb. It's gonna be a powder. You're gonna make a paste with water.... You're gonna massage your scalp. Okay? Be careful it doesn't drip in your eyes. You will kill me....

Massage it, leave it on for twenty minutes, and then wash your hair.

Xu stated: "So when I wash my hair, the water's gonna drop onto my eyes."

"Well, close your eyes," Lieberman advised. "Bend your head back when you're washing your hair, and just be very careful when you're washing. I have patients do this all the time.... You won't die from it; it just burns. Okay?"

Dietary Advice

Later she stated:

I don't wanna give you anything else until I get your results back. Then I can be very specific and say: "Your zinc is low, your copper's high, your manganese is low." I don't know that today....

This [advice] I would give you anyway, because I'm sure that your thyroid is implicated in this, and that is also why you've lost weight.

Next, Lieberman addressed diet. She told Xu: "What I'd like you to do is be a little bit careful about what you're eating." She asked him to describe his "typical" breakfast, lunch, and dinner. Xu briefly did so. Lieberman advised him to avoid "processed food," salt, and sugar. She further stated:

Your ancestors didn't use butter and margarine, my little cupcake; nor is milk consumed in China. So I think that one of my goals with you is to have you eat a little bit more closely, culturally and genetically, what you are accustomed to eating. Okay? In China they normally don't eat a lot of bread. They certainly don't eat cereal and milk in the morning....

Some of this—what I'm thinking of is your thyroid—could have been induced from a change in diet—eating things that are creating a little bit of an immune reaction.

Xu inquired: "So you mean that the change in diet could cause some problem?"

"Yes," answered Lieberman. "Absolutely."

"But can I get used to it," asked Xu, "or...do I have to go back to the old way...?"

Lieberman responded:

Will you get used to it? I doubt it....I really want you to avoid butter and oil and margarine. Your ancestors didn't eat butter and oil and margarine....

I've actually had...patients come here from the Philippines, China, and Japan with lupus or an autoimmune disorder, and it was absolutely caused by a change in diet....But it's very weird.

Xu stated: "Everybody eats butter, cheese, potato chips....So I have to do in Rome as the [Romans do]."

"No, baby," said Lieberman. "It isn't the dietary pattern that anyone on the planet should ever try to emulate. And the Chinese population as a whole is a far healthier population than here. And when you see people start to get sick in any country that starts to adapt to a more Westernized way of eating, they start to get heart disease, cancer, diabetes, high blood pressure."

Xu asked Lieberman why some of his Chinese friends who had emigrated to the U.S. did not share his health problems. She stated:

They might be experiencing it in another way....Maybe they won't see anything till twenty years down the line, and by the time they see it, the shit will have already hit the fan....

I would...like you to try and get a rice cereal or a corn cereal, something that isn't wheat or oats. Once again, these are not grains that were used in the Chinese culture. They were used in my culture. My ancestors are from Russia, so we ate all kinds of, like, broccoli and oats and all that kind of shit. Your ancestors didn't eat that way....

Try rice and corn cereal. You get it at the health food store. They have thousands of different kinds of great cereal.

Toward the end of the consultation, which lasted more than forty-five minutes, Lieberman told Xu:

That [dietary] shift could have done something to your thyroid a little bit....I don't think that you have a serious

medical problem, by the way, and if I did, I would tell you. I think that you have—I think you have a little something going on that could have been influenced by diet.

The other thing here—and I want you to understand my philosophy: Given the pollution here—the hormones, the pesticides, everything that we're bombarded with, living here—I just don't believe that all of that can be dealt with with food. So I'm gonna ask you to probably do some degree of supplementation. I will keep it to a minimum 'cause I don't think that you need to take a lot of stuff. But, like, antioxidants like beta-carotene and [vitamins] C and E—how the hell am I gonna get that in food?

Lieberman emphatically recommended aerobic exercise such as jogging and stationary-bicycling. She said: "You could jog in place and listen to music, David. You know, if the weather's shitty outside, do it at home."

She gave Xu five items: (1) a business card, (2) preprinted instructions concerning aerobic exercise, (3) preprinted dietary instructions, (4) handwritten instructions concerning vitamin C and kelp supplements and the herbal paste, and (5) a seven-day diet history form. The dietary instructions included: "Avoid sugar. Use honey, maple syrup, blackstrap molasses (in moderation)." The business card and three instructional items all bore the initials "CNS" and "RD."

Before paying Lieberman, Xu inquired if she was an R.D. Her reply was affirmative.

A few days after the session, Xu told me he felt he had consulted a fortuneteller. "On what basis," he said, "could she tell me I had a thyroid problem?"

Comments

Several years ago, a prominent adversary of quackery suggested that I investigate Lieberman by visiting her as a patient. I responded that I was disinclined to ruffle an entrepreneur in an uphill profession. Lieberman's apparent independence appealed to me, partly because my occupational environment was demoralizing. At the time, I worked as a clinical dietitian in a hospital that served a poor community. "Crisis medicine" was the order of the day and patient dietary noncompliance seemed rampant. It was verboten for registered dietitians to prescribe diets. The paperwork was redundant and extensive, leaving time only for thumbnail nutritional counseling. Dietitians used the neologism "chartologist" to refer to health professionals who expediently tended to medical records (charts) at the expense of patient care. Foodservice had dominion over clinical dietetics and generally straitjacketed or skewed its aims.

In contrast, I vaguely considered Lieberman a trailblazer of sorts. She appeared to be doing what I had entered the field to do: educating patients who wanted to learn. Perhaps naively, I had persevered in the formal study of nutrition to become a clinician, not a foodservice adjunct.

But unscientific diagnostics and catchy promotion do not contribute to the advancement of the dietetic profession, much less to the welfare of patients. ADA could invigorate the profession, and thus combat quackery, by creating expressly for clinical R.D.s an educational "corridor" whose endpoint is a distinctly nutrition-related doctorate—a credential with clout. Of course, this would not ensure the scientific practice of dietetics; however, it would almost ensure that practitioners thus credentialed had the erudition, training, and recognition to practice intelligently and successfully. What's your opinion?

The next issue will feature an account of David Xu's return visit to Lieberman.

Jack Raso is co-editor/publisher of *Nutrition Forum* and author of *Mystical Diets: Paranormal, Spiritual, and Occult Nutrition Practices* (Prometheus Books, 1993) and *"Alternative" Healthcare: A Comprehensive Guide* (Prometheus Books, 1994).

Zhixin (David) Xu is co-publisher and an associate editor of *Nutrition Forum*. He holds degrees in management and international business and has acted as an interpreter or translator in various settings.

BOOK REVIEW

Title: The Complete Medicinal Herbal (1993)

Author: Penelope Ody

Publisher: Dorling Kindersley, Inc., New York, N.Y.

Price: \$29.95 hardcover

Reviewed by: Varro E. Tyler, Ph.D., Sc.D.

This herbal is particularly hazardous because its appearance lends it undeserved credibility. The colored illustrations are numerous and extremely well done. Typically, they picture the various parts used of the medicinal herbs, fresh and dried, together with some of the dosage forms prepared from them. The book's format is also attractive. This initial visual feast is likely to lure some readers into believing that the text is equally useful. Unfortunately, such is not the case. Much of the information presented as authoritative is not, errors of commission and omission abound, and many of the assertions are based on hope or belief rather than on scientific or clinically proven facts. And no references are provided that could help careful readers to determine which is which. Thus, English herbalist Penelope Ody frustrates the reader's search for herbal truth much as her namesake, the wife of Odysseus, frustrated her many suitors.

The book is well organized. A short history of herbal use in various cultures is followed by illustrated monographs of some eighty-five representative plant drugs and a section on the preparation of various dosage forms. Numerous tables enable readers to select herbs for self-treatment of various illnesses, although they are cautioned against such action in the customary small print on the copyright page. The volume concludes with some miscellaneous considerations and an index. It is well printed and well bound in Italy.

A few examples will serve to illustrate the text's unreliability. In May 1979, the Herb Trade Association urged its members not to sell pokeroot as a food or beverage because of its toxic character. Ody not only monographs the herb but recommends its use for tonsillitis, with the qualifying statement that the fresh root, not the dried, is toxic. She apparently is unaware of a case in Baltimore in 1938 wherein more than twenty-five people on six floors of a building were poisoned when dried pokeroot was milled in the structure. Comfrey root is recommended for external use with no mention of the need

to restrict application to intact skin. In fact, a poultice is suggested for bleeding hemorrhoids. The occurrence of toxic pyrrolizidine alkaloids (PAs) in the borage plant is not mentioned. In the coltsfoot monograph, it is claimed that PAs may no longer be present in a decoction of the plant—which is untrue.

Moving on from the serious to the ridiculous: Placing a pounded cabbage leaf in bra cups for mastitis or engorged breasts is counseled, apparently with a straight face. Hops is said to contain a high proportion of estrogen—a statement that will raise the eyebrows of some pharmaceutical manufacturers who have thought it necessary all these years to process large quantities of pregnant mare's urine for such compounds. It is recommended that fresh, not dried, hops be used for insomnia; yet scientists have shown that 2-methyl-3-butane-2-ol, a sedative principle, increases in concentration in the herb for at least two years after drying.

Botanically oriented readers will be disturbed by the absence of author citations from scientific plant names. [For example, for the sake of formality, writers would initially refer to *Panax ginseng* as "*Panax ginseng* C.A. Mey."—J.R.] The practice of referring to rhizomes or rhizomes and roots (e.g., ginger, rhubarb, and valerian) simply as "roots" and the lack of a clear differentiation of aloe gel from the parenchyma cells, and of aloe latex or juice from the pericyclic tubules, are also disturbing. The designation of the plants yielding medicinal rhubarb only as *Rheum palmatum* enormously simplifies the numerous species and hybrids of this taxonomically difficult genus.

In summary, aside from the excellent illustrations, there appears to be no justification for publishing this book. Its existence will simply provide more ammunition for critics of phytomedicines seeking evidence that herbalism is unscientific and that herbs are therefore unworthy of consideration. In fact, some uses of herbs are disreputable, but others are not. Publishers who market attractively packaged but scientifically unsound herbals do more harm than they will ever know.

Dr. Tyler is professor of pharmacognosy at Purdue University and author of *The Honest Herbal* (Haworth, 1993), an evaluation of popular herbs. Copies can be obtained for \$22 postpaid from LVCAHF Books, P.O. Box 1747, Allentown, PA 18105.

Books Received

The Ayurvedic Cookbook: A Personalized Guide to Good Nutrition and Health

By Amadea Morningstar with Urmila Desai. Twin Lakes, WI: Lotus Light Publications, 1991. Softcover. Pp. 351. Price \$16.95.

Choose to be Healthy: Discover How to Embrace Life and Live Fully

By Susan Smith Jones. Berkeley, CA: Celestial Arts, 1987. Softcover. Pp. 243. Price \$10.95.

Comfort to the Sick

By Brother Aloysius. York Beach, ME: Samuel Weiser, Inc., 1992 (herbal originally published in Holland in 1901). Softcover. Pp. 434. Price \$19.95.

The Complete Book of Chinese Health and Healing: Guarding the Three Treasures

By Daniel Reid. Boston: Shambhala Publications, Inc., 1994. Hardcover. Pp. 484. Price \$27.50.

The Family Health Guide to Homeopathy

By Barry Rose. Berkeley, CA: Celestial Arts, 1992. Softcover. Pp. 320. Price \$32.95.

Food Enzymes: The Missing Link to Radiant Health/Second (Expanded) Edition

By Humbart Santillo. Edited by Deborah Kantor. Prescott, AZ: Hohm Press, 1993. Softcover. Pp. 66. Price \$5.95.

Growing Older, Feeling Better: In Body, Mind & Spirit

By Mary Dale Scheller. Palo Alto, CA: Bull Publishing Company, 1993. Softcover. Pp. 246. Price \$12.95.

The Healer's Manual: A Beginner's Guide to Vibrational Therapies

By Ted Andrews. St. Paul, MN: Llewellyn Publications, 1993. Softcover. Pp. 176. Price \$10.00.

Healing Herbs and Health Foods of the Zodiac

By Ada Muir. St. Paul, MN: Llewellyn Publications, 1993. Softcover. Pp. 176. Price \$3.99.

Honeybee Pollen and the New You: The Story of One Man's Life-Changing Experience with the World's Only Perfect Food, Honeybee Pollen

By James A. Devlin. Prescott, AZ: Hohm Press, 1993 (first edition published 1981). Softcover. Pp. 122. Price \$10.95.

Intuitive Eating: Everybody's Natural Guide to Total Health and Lifegiving Vitality through Food

By Humbart "Smokey" Santillo. Prescott, AZ: Hohm Press, 1993. Softcover. Pp. 411. Price \$16.95.

It's Not What You Eat, But What Eats You. Beyond Diet: Energy Transformation for Better Health

By Jack Schwarz. Berkeley, CA: Celestial Arts, 1988. Softcover. Pp. 179. Price \$8.95.

Living a Healthy Life with Chronic Conditions: Self-Management of Heart Disease, Arthritis, Stroke, Diabetes, Asthma, Bronchitis, Emphysema & others

By Kate Lorig, Halsted Holman, David Sobel, Diana Laurent, Virginia González, and Marian Minor. Palo Alto, CA: Bull Publishing Company, 1994. Softcover. Pp. 296. Price \$14.95.

Magical Aromatherapy: The Power of Scent

By Scott Cunningham. St. Paul, MN: Llewellyn Publications, 1989. Softcover. Pp. 206. Price \$3.95.

Master Dictionary of Food and Wine

By Joyce Rubash. New York: Van Nostrand Reinhold, 1990. Hardcover. Pp. 372. No price given.

Natural Healing with Herbs

By Humbart Santillo. Prescott, AZ: Hohm Press, 1984 (10th printing 1993). Softcover. Pp. 370. Price \$14.95.

Natural Prescriptions: Dr. Giller's Natural Treatments and Vitamin Therapies for over 100 Common Ailments

By Robert M. Giller and Kathy Matthews. New York: Crown Publishers, Inc., 1994. Hardcover. Pp. 370. Price \$25.00.

The Oil That Heals: A Physician's Successes with Castor Oil Treatments. Expanded and Revised Edition of: Edgar Cayce and the Palma Christi

By William A. McGarey. Virginia Beach, VA: A.R.E. Press, 1993. Softcover. Pp. 232. Price \$12.95.

Planetary Herbology: An Integration of Western Herbs into the Traditional Chinese and Ayurvedic Systems

By Michael Tierra. Edited and supplemented by David Frawley. Supplemented by Christopher Hobbs. Twin Lakes, WI: Lotus Light Publications, 1988. Softcover. Pp. 485. Price \$17.95.

Rainforest Remedies: One Hundred Healing Herbs of Belize

By Rosita Arvigo and Michael Balick. Twin Lakes, WI: Lotus Light Publications, 1993. Softcover. Pp. 221. Price \$9.95.

Realities of Nutrition. Completely Revised

By Ronald M. Deutsch and Judi S. Morrill. Palo Alto, CA: Bull Publishing Company, 1993. Softcover. Pp. 594. Price \$24.95.

The Science and Art of Healing

By Ralph Twentyman. Edinburgh, Great Britain: Floris Books, 1989. Softcover. Pp. 317. Price \$27.95 (from Anthroposophic Press, Hudson, NY).

Staying Healthy with Nutrition: The Complete Guide to Diet and Nutritional Medicine

By Elson M. Haas. Berkeley, CA: Celestial Arts, 1992. Softcover. Pp. 1140. Price \$24.95.

Staying Healthy with the Seasons

By Elson M. Haas. Berkeley, CA: Celestial Arts, 1981. Softcover. Pp. 242. Price \$12.95.

Ten Essential Herbs: Everyone's Handbook to Health

By Lalitha Thomas. Prescott, AZ: Hohm Press, 1992. Softcover. Pp. 322. Price \$11.95.

A Time to Heal: How to Reap the Benefits of Holistic Health

By Daniel Redwood. Virginia Beach, VA: A.R.E. Press, 1993. Softcover. Pp. 251. Price \$12.95.

To Your Best Health, Naturally

By James A. Devlin. Prescott, AZ: Hohm Press, 1994. Softcover. Pp. 330. Price \$18.95.

The World's Only Perfect Food Book: The Bee Pollen Bible

By Royden Brown. Prescott, AZ: Hohm Press, 1993. Softcover. Pp. 502. Price \$19.95.

The Yoga of Herbs: An Ayurvedic Guide to Herbal Medicine

By David Frawley and Vasant Lad. Twin Lakes, WI: Lotus Light Publications, 1992. Softcover. Pp. 248. Price \$12.95.

Other Publications Received

Pulse of the Planet #4, 1993: On Wilhelm Reich and Orgonomy

Edited by James DeMeo. El Cerrito, CA: Orgone Biophysical Research Laboratory, Inc., 1993. Softcover. Pp. 173. Price \$20.00.

Treatment Issues: The Gay Men's Health Crisis Newsletter of Experimental AIDS Therapies. Compilation Issue: November 1987-January 1991

Edited by Kevin Armington. New York: Gay Men's Health Crisis, Inc., 1991. Softcover. Pp. 193. No price given.

BRIEFS

More on "Alternative Nutrition" & AIDS (see last issue). The Winter 1993/94 issue of *Treatment Issues*, "The Gay Men's Health Crisis Newsletter of Experimental AIDS Therapies," included an article titled "An Alternative Treatment Activist Manifesto," based on the writings of an apparently skeptical proponent who died of AIDS last July. Although the article advocates controlled clinical trials of "alternative treatments," it states:

Since toxicity studies on most alternative therapies have not been conducted—and since many alternative treatment practitioners often recommend these therapies in very high doses—it must be asserted that they may be toxic. For the most part, if a proponent of a specific alternative therapy has observed negative side-effects, there has been no mandate, no regulation, and therefore no institutionalized reason to disclose such information. Additionally, profit is as big a motive for the "alternative" medical community as it is for the conventional pharmaceutical industry.

While some alternative treatment proponents have no financial investment in proposed therapies, the emotional investment in the therapy's success is usually high. Many alternative treatment enthusiasts have a strong desire to prove conventional Western medicine wrong. This sentiment sometimes precludes objective evaluation....[N]o study of an alternative treatment in AIDS has been able to stand up to scientific scrutiny.

Amway portrayed as cult. The February 15 edition of the syndicated, tabloid-style broadcast newsmagazine "American Journal" (*AJ*) featured a blistering report on Amway Corp., a multilevel marketing company that sells household products and food supplements. At an introductory meeting secretly videotaped by *AJ*, an Amway senior associate claimed: "I'm talking to you about a hundred thousand dollars a year that you can make in your spare time without giving up what you do during the day." However, a former independent distributor stated: "Most distributors...are not gonna make money; they're gonna lose money. So what's gonna keep them involved is constant brainwashing and manipulation and cult-style tactics." According to *AJ*, Amway tells distributors to listen to instructional audiocassettes during the day, such as one that states: "We talk about woman being in submission to man, to her husband. 'Course, that's what God's word says, but a lot of people want to disagree with it." *AJ* concluded: "[Y]ou have to build a network of hundreds of independent distributors before you turn a worthwhile profit....[T]heir own literature points out that the average income from selling Amway is only \$65 a month, and that's before expenses."

Insurance to cover Ornish program. Mutual of Omaha has agreed to cover the cost (about \$5,000 for one year) of participating in a program developed by Dean Ornish, M.D. The program, which several hospitals are planning to replicate, includes smoking cessation, exercise, a near-vegetarian 10% fat diet, group counseling, and relaxation exercises. Ornish's research suggests that his program can cause regression of coronary atherosclerosis.

New FDA labeling standards. On December 29, the Food and Drug Administration announced standards to ensure that the labeling of dietary supplements is truthful and scientifically valid. The new rules will not affect consumer access to supplements. According to the new regulations, labels on dietary supplements must provide the same basic nutritional information found on the labels of nearly all conventional foods [Federal Register 59:350-437, 1994]. The rules also make dietary supplements subject to the same standard for providing disease-related information as Congress had mandated for conventional foods. In addition, they convey authorization of a label claim regarding folic acid and the risk of neural tube birth defects. FDA had previously approved a label claim regarding calcium and osteoporosis. The new rules will permit health claims on labels if there is significant agreement among scientific experts that the claims are valid. FDA Commissioner David A. Kessler, M.D., stated: "This is the standard Congress established for health claims on labeling of conventional foods. It's a flexible standard that will keep unsubstantiated claims out of the marketplace." The health claim standard is scheduled to take effect in July 1994. Rules on nutrition labeling and nutrient content claims ("high," "low," etc.) are scheduled to take effect a year later.

"Ergogenic aids" debunked. Two pharmacists have produced a comprehensive analysis of 19 "natural" substances claimed to help build muscles, increase stamina, enhance energy, or facilitate weight loss [Annals of Pharmacotherapy 27:607-615, 1993]. Claims for these substances were gathered from ads in bodybuilding magazines, product labels, and fact sheets for health food retailers. The authors concluded: (1) "anabolic" claims for Argentinean bull testes, boron, cyclofinil, dicobenzide, gamma oryzanol, *Menispermum canadense*, plant sterols (diosgenin, smlagenin, hecogenin), and saw palmetto berries were unfounded; (2) certain claims for chromium picolinate, clenbuterol, guarana, inosine, kola nut, and ma huang have scientific support, but products containing these substances are marketed in a misleading manner; (3) claims that yohimbe bark is an anabolic agent are supported by studies in animals but not humans; and (4) claims for arginine/ornithine, carnitine, and *Gymnema sylvestre* have some scientific support [although there is still little or no proven value for their use by athletes].

Preview

What chance do consumers have of finding a reliable "nutritionist" through the Yellow Pages? About 40 percent, according to Ira Milner, R.D., New York area network coordinator for the National Council Against Health Fraud. The council sponsored a multistate survey of nutrition practitioners listed in the Yellow Pages in 1992 and 1993. The "credential" initials sported by dubious practitioners included: CCN (certified clinical nutritionist), CCT (certified colon therapist), and CNC (certified nutrition consultant or counselor). Milner, who directed the survey and performed a 1994 follow-up sponsored by Nutrition Forum, will provide details in the next issue of *NF*.

FORUM

Nutrition

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The Color of Quackery? Fingering the Phony Nutritionists of the Yellow Pages

Ira Milner, R.D.

Seekers of responsible nutrition counselors need to be especially careful when they let their "fingers do the walking" through the Yellow Pages. A 32-state survey sponsored by the National Council Against Health Fraud (NCAHF) found that consumers had less than a fifty-fifty chance of finding a reliable "nutritionist" through the directory. The study provides a clear indication of the extent of nutritional pseudomedicine. Multitudinous pseudo-experts, many with questionable degrees and certificates, have been dispensing bad advice, much of which leads to expensive and useless supplementation and invalid or inappropriate diagnostics.

"The Biggest Ad in the Yellow Pages"

Kurt W. Donsbach, D.C., who apparently holds several advanced "degrees" from unaccredited institutions, in 1978 founded his own unaccredited school, Donsbach University (later renamed the International University for Nutrition Education), a notorious source of "mail-order" degrees. Donsbach claimed that his "university" had graduated over a thousand people before it closed. NINE™—The National Institute of Nutritional Education—issued the title CN™ (Certified Nutritionist) to about 735 people and "educated" 7,000 others between 1980 and 1993, according to the January 1993 issue of *Health Foods Business*. NINE's introductory mailing states that its program "is designed to supplement professions with nutritional counseling in such fields as chiropractics [sic], counseling, education, herbology, nutrition, medicine, pharmacology, and psychology...." (NF co-editor Jack Raso has described many sources of health-related pseudocredentials in *Mystical Diets* and *Alternative Healthcare: A Comprehensive Guide*, both published by Prometheus Books.)

Donsbach U. alum Gary Pace was an electrical engineer before he turned to a career in nutrition and duped hundreds of Long Island, New York, residents. In 1985, New York State Attorney General Robert Abrams filed a civil suit against him, accusing him of practicing medicine without a license, false advertising, and illegal use of educational credentials. Pace's schemes, said Abrams, "induced hundreds of

customers to pay hundreds of dollars to him for improper physical examinations [including breast and pelvic exams], worthless laboratory tests [hair analysis and herbal crystallization analysis], bogus nutritional advice, and unnecessary vitamin, mineral, and herbal supplements." In a July 1985 issue of *Newsday*, one of his patients revealed that she had consulted him "because he had the biggest ad in the Yellow Pages."

The 1982-1985 NCAHF Study

In the January/February 1986 issue of its newsletter, NCAHF reported the results of the first study of nutrition practitioners listed in the Yellow Pages. Using information from ads and listings published in the preceding four years, the council categorized practitioners from 41 areas in 17 states as "clearly spurious," "suspicious," "undeterminable [sic]," and "apparently qualified." Only 13% of 439 "nutritionists" listed in the Yellow Pages appeared qualified, 24% were ranked as "clearly spurious," 31% were "suspicious," and 31% were "undeterminable." Under the heading "Dietitians," 8% of the 53 entrants were considered spurious. In a subsection under the heading "Physicians and Surgeons" titled "Nutrition," 46% of the 24 entrants were also deemed spurious, and none was categorized as "apparently qualified." Their offerings included acupuncture, chelation therapy, life extension, and orthomolecular medicine.

I decided to broaden the scope of this study. As coordinator of NCAHF's Task Force on Nutrition Diploma Mills, I was especially interested in identifying all of the operational degree mills in the U.S. and in determining which ones so-called nutritionists patronized most.

Study Design

The 1992-1993 study differed from the original study in one important way: In the latter, the ranking of practitioners was based solely on information in the ad or listing; in the recent study, volunteers ranked practitioners in their respective areas on the basis of interviews or familiarity with the practitioners.

General Results of NCAHF Survey of Nutrition Practitioners in Yellow Pages

	SPURIOUS	SUSPICIOUS	RELIABLE
"Dietitians"	9% (21 of 231)*	3% (7 of 231)	84% (194 of 231)
"Nutritionists"	46% (286 of 618)**	12% (73 of 618)	40% (245 of 618)
Physicians***	55% (68 of 124)	13% (16 of 124)	32% (40 of 124)

*including General Nutrition Centers (GNCs), Diet Center facilities, Herbalife distributors, a Formu-3 International distributor, and a former vitamin company employee who used hair analysis

**including 68 chiropractors, 37 practitioners who used hair analysis, 22 N.D.s, 17 Ph.D.s, and 5 acupuncturists

***20 of 32 states reporting

Prospective volunteers were contacted in September 1992. State legislative chairpersons with The American Dietetic Association provided many contacts. The volunteers consisted of registered dietitians, public health nutritionists, dietetic interns, and undergraduate and graduate nutrition students. Data were collected from 64 areas in 32 states. Volunteers were asked to submit copies of: (1) all listings under the headings "Dietitians" and "Nutritionists"; (2) all listings under the subheadings "Nutrition" and "Preventive Medicine" (under "Physicians and Surgeons"); and (3) all corresponding ads. However, I also received unsolicited listings under other headings, including "Health & Diet Products," "Health, Fitness & Nutrition Consultants," and "Weight Control Services." Volunteers ranked practitioners according to the following criteria.

- **Spurious:** The business utilized invalid methods of treatment, diagnosis, or nutritional assessment (e.g., applied kinesiology, chelation therapy, hair analysis, and iridology) or publicized a degree from an unaccredited school. Spurious businesses included supplement distributors and multilevel-marketing (MLM) companies such as Herbalife, Nu Skin, and Sunrider.
- **Suspicious:** The practitioner did not comply with the volunteer's request for information on credentials or methods utilized.
- **Reliable:** The practitioner was a registered dietitian (R.D.) or had a nutrition-related degree from an accredited institution.
- **Other:** The above categories did not befit the practitioner or business; for example, a senior citizen center or a provider of enteral nutrition products to healthcare facilities.

Volunteers were asked to contact every business they did not recognize as reliable and to obtain information about credentials, methods, and, if possible, advice to clients.

Health Food Stores, Chiropractors, Naturopaths et al.

Consumers had a much better chance (84%) of finding a responsible nutrition practitioner through listings under the heading "Dietitians" than through those under the headings "Nutritionists" (40%) and "Physicians" (33%). Of the 231 entrants listed under "Dietitians," 21 (9%) were judged "spurious." These included Diet Center facilities, distributors for MLM companies such as Herbalife, a fake nutritionist with a bogus doctorate who practiced iridology, a former vitamin company salesman who used hair analysis, and numerous General Nutrition Corporation (GNC) outlets. When a GNC employee was asked why her store was listed under "Dietitians," she replied: "Because we have the literature in the store to help people." Spurious "dietitians" were found in eight states. New York, North Carolina, and California had the highest percentages. For six states, either there was no "Dietitians" heading or volunteers did not provide the listings under this heading.

A word is in order concerning the debatable categorization of Diet Center facilities as "spurious." All of the facilities are franchises. Although the corporate staff includes registered dietitians, only non-health professionals—typically former clients—counsel dieters, who are required to take a nutritional

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supplement. The facilities offer prepackaged cuisine. Certainly, listing such a business, whatever its merits, under the heading "Dietitians" is misleading.

Of the 618 entrants listed under the heading "Nutritionists," 358 (58%) were either spurious or suspicious. Sixty-three percent of ads and boxed listings under this heading were for bogus nutritionists, many of whom placed the biggest ads. For thirteen states, at least half of the listings represented such practitioners. The top five states were Arkansas (one listing), New Mexico (61%), Arizona (59%), Nevada (58%), and Florida (55%). New Mexico and Florida license dietitians and nutritionists.

Of the 286 "spurious" nutritionists, 37 (13%) used hair analysis.

Sixty-nine chiropractors (11%) were listed under "Nutritionists." All were categorized as spurious except one, who employed a registered dietitian to do nutrition counseling. Their offerings included supplements (57%), applied kinesiology (19%), hair analysis (9%), homeopathy (6%), and acupuncture (3%).

Twenty-two of the entrants listed under "Nutritionists" claimed to be naturopaths.

An Alphabet Soup of Empty Credentials and Titles

Under the heading "Nutritionists," 24 listings included the initials "Ph.D." Of these, 17 referred to bogus doctorates, representing 6% of those "nutritionists" deemed spurious and 71% of all "Ph.D." nutritionists. Five of these phony Ph.D.s were naturopaths, two were chiropractors, and one was an acupuncturist and Doctor of Oriental Medicine (OMD).

Among the aforementioned naturopaths was Robert H. Sorge, founder and director of the Christian-oriented Abunda Life Health Hotel & Clinic, in Asbury Park, New Jersey. An Abunda Life brochure described his educational background:

In 1964 he received his doctorate in naturopathic medicine from the Anglo American Institute Of Drugless Therapy in Great Britain. And in 1972 he earned his doctorate of philosophy in naturopathic medicine from the United States School of Naturopathic Medicine and applied sciences [sic], one of the old naturopathic schools licensed around the turn of the century by a special act of the United States Congress.

According to *Bear's Guide to Earning College Degrees Non-Traditionally* (1992), the Anglo-American Institute of Drugless Therapy is an unaccredited correspondence school that claims more than seven thousand graduates.

Of the 17 phony "Ph.D." nutritionists, three held a "doctorate" from Donsbach University; two from the International University for Nutrition Education (formerly

Donsbach U.), an unaccredited correspondence school; one from the American Holistic College of Nutrition, another unaccredited correspondence school; one from the Clayton School of Homeopathy; one from Clayton University (originally called Open University and later called American International Open University), an unaccredited correspondence school in St. Louis, Missouri; and one from Ryokan College, an unaccredited school that offers degrees only in psychology. A New Orleans chiropractor claimed a Ph.D. degree in kinesiology but did not state the source of this alleged degree. And a California practitioner claimed, unconvincingly, a Ph.D. degree in nutrition science from the University of Munich.

The "credential" initials sported by dubious nutrition practitioners included: CCN—certified clinical nutritionist, CN—certified nutritionist, CCT—certified colon therapist, RCT—registered colon therapist, CMT—certified massage therapist, CNC—certified nutrition consultant, NC—nutrition counselor, HMD—homeopathic medical doctor, NMD—doctor of nutrimericine, and ND—doctor of naturopathy. Jack Raso called the Triad Medical Center, in Reno, Nevada, and was told that a homeopathic medical doctor was "kind of— sort of the same thing" as a holistic medical doctor.

Anne Murray of Albuquerque styled herself "MLD." Murray is a graduate of the Vodder School International for Manual Lymph Drainage, in Walchsee, Austria, and a member of the American Massage Therapy Association. Her pamphlet states that practitioners of manual lymph drainage (MLD) "can manually remove the blockages in the [lymph] system and promote proper lymph flow." Blockages, Murray claims, "allow toxins and plasma to accumulate[,] interfering with cell nourishment and depressing the immune system." The conditions MLD practitioners treat reportedly include acne, allergies, chronic fatigue syndrome, colitis, multiple sclerosis, osteoporosis, Parkinson's disease, "post tooth extraction," rheumatoid arthritis, and varicose veins.

Physicians on the Fringe

Some M.D.s and D.O.s—for example, so-called nutritionally oriented doctors or medical nutritionists—utilize a variety of pseudoscientific and unsound nutritional and medical methods. In 20 states, 55% of physicians listed under the heading "Physicians and Surgeons" were "spurious." Although more commonly listed under the subheadings "Nutrition" and "Preventive Medicine," some fringe physicians were listed under the subheadings "Allergy," "Holistic Medicine," and "Homeopathy." Twelve percent of them sold supplements in their offices. Their dubious methods included

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chelation therapy (8%), homeopathy (8%), orthomolecular medicine (5%), acupuncture (4%), clinical ecology (4%), dark field microscopy (3%), hair analysis (3%), vitamin injections (3%), ayurveda (1%), and colonic irrigation (1%).

Other Phony Nutritionists

Dubious nutrition practitioners were also listed under other headings in the Yellow Pages, including: "Acupuncture," "Health & Diet Products," "Health, Fitness & Nutrition Consultants," "Herbs," "Holistic Practitioners," "Weight Control Services," and "Wellness Programs." Many of the listings under these headings were for chiropractors, homeopaths, naturopaths, health food stores, and MLM companies, including Aloe Vera International, Herbalife, Matol Botanical International (purveyors of *Km*), Nu Skin International, Shaklee Corporation, and Sunrider International.

Wake-Up Call?

John H. Renner, M.D., president and medical director of the Consumer Health Information Research Institute (CHIRI), has stated: "It's big news when a fake doctor manages to practice without valid credentials, but thousands of nutritionists are practicing with questionable degrees and credentials." Hundreds of such nutritionists are listed in the Yellow Pages.

One volunteer wrote: "Unfortunately, the people who are spurious have the most soothing voices and promote themselves extremely well. The dietitians that I called did not do as good of a job promoting themselves." Only a relative handful of R.D.s are disreputable; most are good bets as sources of nutrition information. However, in the health marketplace, clinical R.D.s and other qualified nutrition advisors are up against a shuffle of dubious practitioners, many of whom

depreciate dietitians. For example, a biochemist told me: "Dietitians basically manipulate food and menus. Nutritionists recommend dietary changes and food supplements." A "CCN" who graduated from the International University for Nutrition Education stated:

Dietitians have been around a long time. They work in hospitals and do menu planning.... Nutritionists are more clinical and take a more individualized [approach].... [They are] more tailored to the individual, using vitamins and minerals in therapeutic doses.... [They take a] more active rather than passive approach.... If you want a nutritionist, [the practitioner] shouldn't be a member of The American Dietetic Association.

A pharmacist and self-styled naturopath who graduated from Donsbach University said:

[Consumers] need to know what type of nutritionist they're interested in.... Most R.D.s wouldn't entertain the idea of being aware that enzyme production decreases around the age of 35.... Dietitians follow hospital menus.... [Consumers should] look to more unorthodox nutritionists... with other credentials.

Are clinical dietitians the Rodney Dangerfields of healthcare?

[**Editor's note:** It is a considerable marketing advantage to hold a doctorate and/or to lack ethics. Furthermore, I surmise that, to the public, the Registered Dietitian credential is a somewhat vague, "generalist" credential in comparison with the "specialist" quasi- and pseudocredentials of unscientific nutrition practitioners. Chiropractors and N.D.s, after all, are "doctors." Perhaps that is primarily what dieters and nutrition buffs in general want to hear.—J.R.]

Mr. Milner is an associate editor of *NF* and the New York area network coordinator for the National Council Against Health Fraud.

Parsley—No Sage

Shari Lieberman Up-Close

Part 2

Jack Raso, M.S., R.D.

In our last issue, *NF* associate editor David Xu and I presented a report of his "comprehensive consult" with Shari Lieberman. Last January, The American Dietetic Association suspended her Registered Dietitian (R.D.) credential for a period of three years, after which she may apply for reinstatement. Despite the suspension, Lieberman has called herself an R.D.—for example, in an ad in the April/May 1994 issue of *Free Spirit* and another in the Spring 1994 *Newlife Expo* catalog. Xu's follow-up visit to her did not take place until March 25. (In the interim, Lieberman had traveled to Brazil, and Xu to mainland China.)

"The Testimonial Queen"

At the 1992 Convention and Trade Show of the National Nutritional Foods Association (NNFA), Lieberman conducted a "workshop" on "dispensing nutritional information" during which she named herself "the testimonial queen." NNFA is a guild of health food retailers. Lieberman stated:

[W]hat you're going to learn today is how you can get around—how you can actually talk with a customer who comes into your store, without being arrested....

Part of David Xu's Hair Analysis Report



24700 CENTER RIDGE ROAD
CLEVELAND, OHIO 44145
(216) 835-2150

HAIR ELEMENT ANALYSIS

CONTROL # 402031028-H1

NAME	DAVID XU	
AGE	30	SEX M
HAIR LOCATION	HEAD HAIR	
SPECIMEN NUMBER	402031028	
DATE REC'D	02/07/94	DATE COMPL. 02/07/94 ACCT. 0414-0
		SHARI LIEBERMAN Ph.D. N Y CTR. FOR PREVENTIVE MED. 60 E. 8TH ST., APT. 14C NEW YORK NY 10003

HASB CLASS	ESSENTIAL ELEMENTS	HAIR VALUE (PPM)	REFERENCE RANGE (PPM)	SUSPICIOUS (BELOW REFERENCE RANGE)	REFERENCE RANGE	SUSPICIOUS (ABOVE REFERENCE RANGE)	
CLINICALLY SIGNIFICANT HAIR ELEMENTS	Calcium	337	200 - 750	*****			
	Magnesium	36.9	25 - 115	*****			
	Zinc	121	100 - 250	*****			
	Copper	10.1	12 - 35	*****			
	Chromium	<<	.15	.2 - .5	*		
	TOXIC ELEMENTS	HAIR VALUE (PPM)	REFERENCE RANGE (PPM)	LOW	MEDIUM	HIGH	
	Lead	<<	.70	< 20.0	*		
	Mercury	<<	.43	< 3.0	*		
	Cadmium	<<	.04	< 1.0	*		
	Arsenic	<<	1.63	< 2.0	*****		
Nickel	<<	.20	< 1.0	*			

SUGGESTED CLINICAL SIGNIFICANCE IN HAIR	ELEMENT	HAIR VALUE (PPM)	REFERENCE RANGE (PPM)	BELOW REFERENCE RANGE	REFERENCE RANGE	ABOVE REFERENCE RANGE
SUGGESTED CLINICAL SIGNIFICANCE IN HAIR	Sodium	23	10 - 50	*****		
	Potassium	30.7	2 - 28	*****		
	Selenium	2.9	3 - 6	*****		
	Manganese	.09	.1 - 1.3	*****		
	Aluminum	1.42	< 20.0	*		
UNKNOWN CLINICAL SIGNIFICANCE IN HAIR	Cobalt	<<	.10	.1 - .5	*	
	Iron	<<	5.0	3 - 15	*****	
	Lithium	<<	.05	.1 - .8	*	
	Molybdenum	<<	.10	.1 - 1.0	*	
	Phosphorus	<<	147	100 - 170	*****	
	Vanadium	<<	.04	.1 - .5	*	
Germanium	<<	.03	.5 - 5.0	*		

<< Indicates Below Detection Limit; Value Given Is Detection Limit.

< = LESS THAN PPM = PARTS PER MILLION

>> = GREATER THAN

OMEGATECH INC., is a licensed clinical laboratory adhering to the recommendations of the HAIR ANALYSIS STANDARDIZATION BOARD (HASB).

Raymond J. Shamberger Ph.D., Laboratory Director
CLIA # 36D0339322

[I] really care about *you*, and, you know, there's a limitation to how tightly your hands can be tied....

Now, it's all in the way that you say it.... It really is in the way that you say it. You have to be very aware when you speak with someone, because— Listen: Don't put it past somebody to send somebody into your store as a setup.... I don't want you to be paranoid; I only want you to be prepared. Okay? So, there's a very big difference between prescribing, diagnosing, and something that you're presenting for educational purposes. It's a big difference.

Lieberman urged owners and employees of health food stores to build a "reference library" consisting of: (1) files of articles on numerous supplement ingredients, (2) books, (3) a rack of handouts from supplement companies, and (4) a loose-leaf collection of testimonials requested from customers. She expounded:

If someone has had incredible results using a nutritional supplement of any sort, ask them to write a testimonial. They are very, very useful tools. And you all have people coming into your stores who are taking supplements. Even if they're referred by a nutritionist or a nutritional physician, you might wanna have a testimonial from them for the referral to the person that they're seeing. Testimonials are key, really key; and I cannot emphasize that to you enough.

When I'm on air, really most of what I do is simply take testimonials. I have to be careful what I say; so I've had a lot of experience with this. It's all in the way that you say it....

Any person can share information with another person. You just have to be careful in how you say it. You can show their testimonial. Okay?

I'm sort'a giving you ways that you can kind'a maneuver through the tide. Okay? [It] really isn't difficult.

"I'm Only Doing Things More on a Preventive Level"

During the first consultation, Lieberman opined that Xu had "a marginal thyroid problem"—"a little bit of an endocrine-thyroid imbalance." She further opined that a blood test would not indicate this "problem." However, she stated that the results of two tests, herbal crystallization analysis (HCA) and hair analysis, would "show" her "for sure." The second consultation (or "extended consult") included the following conversation.

Xu: So where is my result?

Lieberman [explaining 6-page "hair element analysis" report from Omegatech, of Cleveland, Ohio]: Calcium and magnesium fall within the reference range, but they're a little— I would say they're low-normal. And we certainly want to make sure that they don't go down.... But as of now, they're okay.... They could be a little bit better, but [it's] not a major ordeal.

The zinc level also looks pretty good; that's for the immune system.

Your copper level is low. Copper is a major mineral that's involved in cholesterol regulation. It's involved in the immune response.... So the copper level looks like it's a little bit of a problem. Okay?

Chromium is low for many people.... Chromium's really important for blood sugar control....

Xu: Am I very low? I mean, lower than regular people?

Lieberman: Yes. It's pretty low.... I don't see anything here that's terrible.... But I would say overall we sort of see a pattern of you being on the low side of things.

Xu: Okay. Why?

Lieberman: It was probably as a result of moving out of China... [to America]. I'm sure if you were living at home [i.e., China, where Xu was born and raised], it would be a little bit different. Okay?...

Xu: So, do I have to do anything, or—?

Lieberman: Yes. Let's talk about it.... You're a little low.... So, what I'd like to do is recommend something in terms of bringing some of those levels up and also... for prevention. Why not?

Xu [referring to a supplement "checklist" sheet Lieberman had prepared for him]: So, what you are saying is also written here, right?

Lieberman: Yes, yes.... Let me show you what... I'd like to do.... [Y]ou got the liquid kelp? [She had recommended a specific kelp preparation as an iodine supplement "for the thyroid" during the first consultation.]

Xu: No.

Lieberman: You didn't?

Xu: No....

Lieberman: Okay. Do you customarily eat seaweed or stuff like that, or not really?

Xu: Not really, no.

Lieberman: You should get it.... Oh, and most important... is the thing about hair loss. What do you think this [i.e., hair] is made out of? Minerals. Predominately minerals and some protein.

Xu: Okay. So?

Lieberman: We're gonna give you minerals. I'm gonna get the protein from food. I'm going to recommend a supplement called "Optimum Protection." The reason I'm recommending this is because it will give you calcium, magnesium, zinc, B-complex, vitamin A, beta-carotene, vitamin E, selenium, chromium, manganese, zinc.

I'm giving you a chelated copper, two milligrams... 'cause your copper level is real low....

The reason I had given you— This ["Io-Dyn (drops) World Organic"] is liquid kelp, and the reason I had recommended it was specifically for the hair loss, because this is oftentimes controlled by the thyroid gland. You don't have to have a thyroid disorder; your thyroid can be maybe [sic] not functioning... optimally. A change in living conditions, a change in environment, a change in your food—there are many, many different things that can actually affect that. This would be the equivalent of eating some seaweed every day....

I'm only doing things more on a preventive level.

"Weird.... Very Weird"

Lieberman [explaining HCA and the results thereof]: I would relate this [HCA] most closely to acupuncture. If someone goes through a traditional Chinese acupuncture diagnosis, they will pick up the same exact things I do with this test. It's not medical. So this is basically going to tell me which herbs would be the best for you, and what do these herbs correspond to. So let's look at each one.

Example of HCA report (1984) from Herbal Tracers, Ltd. (Lieberman did not use this lab.) Practitioners interpret the report (left) by aligning it with the guide (right). The number of x's supposedly indicates how much help "corresponding" organs need.

Name Jean Masters # HTracers
 Date of Birth 2/20/57 Date 012083

This crystal most closely resembles our sample crystal of:

<u>Vervain</u>	XXXXXXXXXX	1.
_____	_____	2.
_____	_____	3.
_____	_____	4.
<u>Cascara</u>	Emphasis	5.
_____	_____	6.
_____	_____	7.
<u>Cascara</u>	XXXXXXXXXXXXXXXXXXXX	8.
<u>Lady slipper</u>	XXXXXXXXXXXX	9.
_____	_____	10.
<u>Mistletoe</u>	XXXXXXXXXX	11.
_____	_____	12.
_____	_____	13.
<u>Marshmallow</u>	XXXXXXXXXX	14.
<u>Meadowsweet</u>	XXXXXXXXXXXX	15.
_____	_____	16.
_____	_____	17.
_____	_____	18.
_____	_____	19.
_____	_____	20.
<u>Hawthorne</u>	XXXXXXXXXX	21.
_____	_____	22.
M _____ F _____	_____	23.
_____	_____	24.

THE INDICATIONS OF THIS SHEET DO NOT CONSTITUTE AN APPRAISAL OF HEALTH, BUT ARE INDICATIONS OF SIMILAR CRYSTAL PATTERNS ONLY

- ### BODY SYSTEM GUIDE
- The traditional use of these herbs suggest that they have been used for the:
1. General Constitution
 2. Respiratory system
 3. Endocrine system
 4. Kidneys
 5. Focus _____
 6. Liver _____
 7. Reproductive system
 8. Digestive system
 9. Nervous system
 10. Blood sugar
 11. Arteries
 12. Abnormal cell potential
 13. Small intestines
 14. Colon
 15. Bladder
 16. Blood pressure reg.
 17. Lymphatic system
 18. Blood oxygen
 19. Pain
 20. Gall bladder
 21. Infection
 22. Circulatory system
 23. Hormones
 24. Calcium

Circulation shows up a lot. You have a circulation of a 60-year-old man. [Xu is 30.] That's inexcusable. I ain't giving you anything to swallow. You're gonna have to do some exercise....Even if you begged me, I'm not.

The circulation is a problem, one of your major ones. The other thing that's showing up is the lymphatic/immune system....

Xu: Sound pretty bad...?

Lieberman: Um, it looks like an area to me that needs the most amount of work....

Small intestines and colon also show up as an area of focus....I don't think I need to give you something to swallow for this. I think you need to clean up your diet a little bit. I'd like to do as much dietary intervention to spare you swallowing a lot of pills.

Nervous system shows up....I think that exercise would be great for you. So would meditation.

Digestive system shows up as a little bit of a problem....This is related to hair loss, by the way....There is something going on hormonally.

Xu: How can you get [indications for] these herbs from my [saliva]—?

Lieberman: When that's sent to them, there's a powder, and within the crystal they see lots of other little patterns they actually match it to. They have thirty crystals of pure herb....It has nothing to do with what you eat....It's based on the work of Rudolf Steiner, [according to]...which...your body will tell you what it needs. [Steiner (1861-1925) founded anthroposophy, an arcane, Christianized spinoff of Theosophy that posits four components of the human organism: a physical body, a vegetal "etheric" body, an animalistic "astral" or "soul" body, and an "ego" or "spirit."]

Xu: So I need to eat more parsley? [Parsley is a mild diuretic and gastric stimulant.]

Lieberman: Parsley. When I send this in, it's not uniform....There's lots of different patterns in here, and [under a microscope] they will look like any one of thirty herbs. So they just match it....It's weird. It's very weird....Weird stuff, kind'a like if one would talk about *chi* in acupuncture. I mean, how does one explain it to an American person? It'd be like: "Can I measure it? Uh, how do you know—?"

But we're talking about a system that does not involve modern medicine at all. This is not looking at you to diagnose a disease. This is looking at you to say: "This area needs to be worked on, that area needs to be worked on, this area needs to be worked on, [and] these are the herbs that can...—"

So, hormonal balance does show up. That is related to your hair loss, by the way. So I'm— I'm happy that it showed up, 'cause it's something that I can work on.

The herbal extract that I'm going to give you will of course contain some parsley, and it will also contain herbs with similar principles as well.

The liver shows up, too....That's...a little on overload, slight overload. There's nothing wrong with your liver. So I want— I want you to understand that there's nothing wrong—....I'm looking at things that would be best handled as a preventive thing to do.

As far as the hair loss is concerned, it looks like, hormonally and with respect to minerals, there could be something going on— nothing terminal, but little things here and there. Okay?...

The reason I do it [i.e., use HCA], quite frankly, is: I get blood tests on people and they [the tests] tell me absolutely nothing. People coming in who don't feel well—their blood test is fine. [But] it doesn't

mean there's nothing wrong with them; it means that, on a medical level, nothing could be detected. I'm delighted; I think it's great....

These [two items, "LYM" and "PRO," on the supplement list] are herbal tinctures....*PRO* will contain parsley...damiana [an alleged aphrodisiac that appears medically useless], which is another herb.... "PRO" stands for "prostate reproductive system." It's for men. That's for hormones. *LYM* is for the immune system and the lymphatic system. It contains things like echinacea.... It has a number of herbs in it for that purpose. [It's] totally natural and it's herbal....

[During the first consultation, Lieberman had recommended cayenne powder in the form of a topical paste for hair loss.] [T]he cayenne works great, David. It really works great....

"At this Point in Time..."

Xu: [Y]ou are...a dietitian, right?

Lieberman: Yes.

Xu: A registered dietitian, right?

Lieberman: Yes....I'm an herbalist, too....I design herbal products, with technical support....If I'm gonna give you the [hypothetical] bottle [of herbal pills] and say that this is gonna cause you to lose weight, in this country you're making a drug claim. It's all bullshit, David....It's a stupid thing, but that's the way it is....

What I want you to do for me is, I would like you to call me in about a month. I wanna know how you are and how you feel, what you're doing, [if]...you have any questions. Let me get a sense of where you're at.... I probably wouldn't see you for two months or so....I'd repeat the herb crystal test and I would give you the results on the phone....

Are you giving me a check?

Lieberman's receipt and the supplement sheet bore the initials "R.D." after her name.

On April 12, Xu went to Hickey Chemists, in Manhattan, to determine the ingredients of the herbal supplements Lieberman had recommended: *PRO*, *LYM*, and *Io-Dyn*. She had directed him to this pharmacy, which she had praised during

her NNFA seminar. Xu asked a stock clerk where these supplements were. The clerk appeared puzzled and referred Xu to a man behind the prescription counter. The counterman expressed puzzlement initially but in a moment spoke Lieberman's name. The clerk told Xu that the supplements were out of stock.

On April 14, about a week after the mailing of *NF*'s March/April issue, a friend of mine phoned Lieberman as a potential client. Lieberman described the "two screening tools" she uses: "hair mineral analysis" and "an herb crystal test." She stated that these were "completely non-medical" and "not diagnostic." She explained: "They just kind of give me an idea about your biochemistry."

My friend asked Lieberman if she was a dietitian. She replied:

Um, well, a diet— I— I'm— I'm a nutritionist because that— It requires a graduate level of education, and I have both a master's degree and a Ph.D. in nutrition.... [I] do have a *tra*i— I do have training as a dietitian as well.

He asked her if she was a registered dietitian. She responded: "Can I ask you who gave you my phone number?" My friend repeated the question and Lieberman answered: "Um, at this point in time, no, I'm not."

The Bottom Line

Lieberman's approach to nutritional "healing" appears substantially based on mysticism and unscientific empiricism. She continues to engage in practices that are, in my opinion, incompatible with the R.D. credential.

Jack Raso is co-editor/publisher of *Nutrition Forum* and vice president of the New York State Chapter of the National Council Against Health Fraud.

BOOK REVIEW

Title: "Alternative" Healthcare: A Comprehensive Guide (1993)

Author: Jack Raso

Publisher: Prometheus Books, Buffalo, N.Y.

Price: \$26.95 hardcover

Reviewed by: John E. Dodes, D.D.S.

What happens to someone who is brought up in a very religious home, is taught to accept the assertions of authorities without question, and enters adulthood believing all the health claims he reads or hears in the popular media? Jack Raso describes just such an odyssey, from believer to skeptic, in his first book, *Mystical Diets* (Prometheus Books, 1993). His new book is a welcome companion and complement to his first.

Raso has obviously spent a great deal of time analyzing the fundamental beliefs of alternative healthcare. He concludes that two distinct philosophic "pillars" underlie these beliefs: unscientific empiricism, which "esteems knowledge derived from experience—trial and error—but devalues knowledge

gained by analysis and the systematic organization of information"; and universal skepticism, which "in its extreme form...holds that humans cannot know anything—that truth and falsity are indistinguishable." These two worldviews lead inexorably to the logical errors and bizarre practices of alternative healthcare

The book is divided into four parts. Part I, "Spirits in the Material World," deals with vitalism and other supernaturalistic theories and lists hundreds of related "healing" methods. I particularly enjoyed Raso's insightful discussion of the much-hyped, but flawed, survey of "unconventional medicine" usage published in the *The New England Journal of Medicine* in January 1993. Raso points out that this study, which claimed that "unconventional medicine" had an "enormous presence" in the U.S. healthcare system, was based on a misleading definition of the term "unconventional." For example, the researchers labeled commercial weight-loss programs, massage, and self-help group therapy "unconventional." At all events, as Raso states, "...only 11 percent of the interviewees had reported consulting a provider of 'unconventional therapy'" and "All the

'unconventional therapy' patients with cancer, diabetes, lung disease, skin problems, high blood pressure, and urinary disease had consulted a medical doctor."

Part II, "Spiritual Healing," deals predominantly with yoga, ayurveda, macrobotics, and the Edgar Cayce approach to healing. By "spiritual healing," Raso means "health-centered systems and methods that affirm the idea of 'life after death' and borrow conspicuously from religious traditions." The three chapters of Part II effectively lay bare the fuzzy thinking and economic fraud that "spiritual healing" entails.

In Part III, "Pseudonatural Healing," Raso examines naturopathy, homeopathy, and Natural Hygiene (founded by the inventor of the graham cracker). The descriptions are succinct and enlightening.

Part IV, "Physical Cultism," includes accounts of Raso's visits to a dozen practitioners of "bodywork"—suggesting valor "above and beyond the call of duty." Bodywork, according to Raso, encompasses "many treatments that involve touching, manipulation, and/or exercise of the body and, in most cases, supposed alignment of the body's 'energy field' or removal of blockages to the flow of 'energy.'" Raso's descriptions are priceless. Although I've been involved in the anti-health fraud movement for many years, I didn't know exactly what happens to people who undergo rolling, polarity therapy, *jin shin do*, or the Alexander technique. Raso elucidates these and many other kinds of bodywork.

The final chapter focuses on "mystical chiropractic."

As Raso states, "...chiropractors have been among the chief innovators and supporters of mystical healing since the inception of their trade." This is undoubtedly true. Chiropractors have converged around false allegations against amalgam fillings, antibiotics, fluoridation, and vaccination. Citing research by Yale anatomy professor Dr. Edmund Crelin, Raso convincingly argues that chiropractic subluxations "do not occur." One finishes this chapter with a better understanding of why chiropractors are so quick to adopt unscientific methods.

My only criticism of the book is that, because of the author's desire for comprehensiveness, the text includes long lists the reader must plow through. The contents of these lists would have been less daunting had Raso placed the information in tables or boxes. In any case, this minor drawback is more than made up for by the superb glossary and excellent bibliography. Covering 70 pages, the "Glossary of Supernaturalistic Methods" is, without a doubt, the best glossary on alternative healthcare that I have seen. It runs the gamut from absent healing to zone therapy, including nearly every questionable health method I've ever heard of and many I hadn't heard of. This makes "*Alternative Healthcare*" an indispensable reference book that will have a prominent place on my desk and, I hope, yours.

Dr. Dodes, who practices in Woodhaven, N.Y., is president of the New York State Chapter of the National Council Against Health Fraud. Copies of "*Alternative Healthcare*" are available at \$26 each postpaid (Canada: \$27) from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

Books Received

1,001 Chemicals in Everyday Products

By Grace Ross Lewis. New York: Van Nostrand Reinhold, 1994. Softcover. Pp. 344. Price \$19.95.

Body-Centered Psychotherapy: The Hakomi Method. The Integrated Use of Mindfulness, Nonviolence and the Body
By Ron Kurtz. Mendocino, CA: LifeRhythm, 1990. Softcover. Pp. 210. Price \$15.95.

Chinese System of Food Cures: Prevention & Remedies
By Henry C. Lu. New York: Sterling Publishing Co., Inc., 1986. Softcover. Pp. 192. Price \$9.95.

The Complete Book of Essential Oils and Aromatherapy
By Valerie Ann Worwood. San Rafael, CA: New World Library, 1991. Softcover. Pp. 423. Price \$18.95.

Cooking with Yogurt: The Complete Cookbook for Indulging with the World's Healthiest Food
By Judith Choate. New York: Atlantic Monthly Press, 1994. Softcover. Pp. 163. Price \$11.00.

Core Energetics:: Developing the Capacity to Love and Heal
By John C. Pierrakos. Mendocino, CA: LifeRhythm, 1990. Softcover. Pp. 301. Price \$18.95.

Diet for a Gentle World: Eating with Conscience
By Les Inglis. Foreword by Harvey Diamond. Garden City Park, NY: Avery Publishing Group Inc., 1993. Softcover. Pp. 144. Price \$7.95.

Facing Myself: Reflections from Past Lives, Dreams, and Psychic Readings
By Jennifer Borchers. Virginia Beach, VA: A.R.E. Press, 1994. Softcover. Pp. 218. Price \$12.95.

Food for Sport

By Nathan J. Smith and Bonnie Worthington-Roberts. Palo Alto, CA: Bull Publishing Company, 1989. Softcover. Pp. 228. Price \$12.95.

The How To Herb Book: Let's Remedy the Situation
By Velma J. Keith and Monteen Gordon. Pleasant Grove, UT: Mayfield Publications, 1984 (10th printing, 1993). Softcover. Pp. 256. No price given.

The Love-Powered Diet: When Willpower is Not Enough. A Revolutionary Approach to Healthy Eating and Recovery from Food Addiction
By Victoria Moran. Foreword by Marilyn Diamond. San Rafael, CA: New World Library, 1992. Softcover. Pp. 310. Price \$12.95.

Natural Healing from Head to Toe: Traditional Macrobiotic Remedies
By Cornelia Aihara and Herman Aihara, with Carl Ferré. Garden City Park, NY: Avery Publishing Group Inc., 1994. Softcover. Pp. 264. Price \$14.95.

Reiki: Universal Life Energy
By Bodo J. Baginski and Shalila Sharamon. Mendocino, CA: LifeRhythm, 1988. Softcover. Pp. 198. Price \$12.95.

Audiocassette Received

Escaping the Prison of the Intellect: A Journey from Here to Here
By Deepak Chopra. San Rafael, CA: New World Library, 1992.. Running time: 47:43. Price \$10.95.

READERS' FORUM

Need for Nutrition-Specific Doctorate

We began subscribing to NF last January and just love it so far.

In response to your article on Shari Lieberman [last issue's "Progressive or Renegade?"], we wanted to let you know that we wholeheartedly agree that there is a need for a doctoral degree in nutrition (such as "NutritionD") similar to the PharmD degree available to pharmacists. It would certainly give us the prestige and clout we are longing for.

This idea was expressed in an article that appeared in the *Journal of The American Dietetic Association* a while ago [February 1993], but we have not seen or heard anything about it since. Please let us know if you do!

Thanks and keep up the good work.

Joan M. Trimble, R.D., C.N.S.D.
Clinical Nutrition Manager
Somerset Medical Center, Somerville, N.J.

Jack Raso responds: Thanks for faxing this excellent article, titled "Educational empowerment of the clinical dietitian: A proposed practice doctorate curriculum." The authors endorsed the development of diagnostics-centered programs leading to a "NutritionD" degree. The proposed degree is a professional (nondissertation) doctorate specific to dietetics and "aligned academically in rank" with the M.D. degree. The authors suggested that such a doctorate would engender in dietitians "a preference for leading rather than assisting other professionals." The article concludes, in part: "[M]eeting this educational challenge should move clinical dietitians to the forefront of health/medical nutrition practice."

David Xu and I emphasize that this newsletter is a forum—a participatory resource—and invite readers to submit publishable letters that reinforce or raise questions about articles or items herein. Involved subscribers are an inspiration. Please share your experiences, insights, opinions, questions, and concerns with fellow readers by writing!

BRIEFS

Antioxidant benefits disputed. Researchers have proposed that supplementation with beta-carotene (a form of provitamin A) and/or alpha-tocopherol (a form of vitamin E) "may have harmful as well as beneficial effects" [NEJM 330:1029-1035, 1994]. Both nutrients are antioxidants. In a randomized, double-blind study, they followed 29,133 male long-term smokers in Finland for 5 to 8 years. The participants received daily: (1) 20 mg synthetic beta-carotene, (2) 50 mg synthetic alpha-tocopherol, (3) both supplements, or (4) a placebo. The investigators found that: (1) the antioxidant regimens had not prevented lung cancer, (2) the incidence of lung cancer was higher among participants who had received beta-carotene than among those who had not, (3) alpha-tocopherol supplementation had had no effect on the incidence of lung cancer or on mortality due thereto, (4) the death rate due to hemorrhagic stroke was higher among participants who had received alpha-tocopherol, and (5) alpha-tocopherol supplementation appears protective against prostate and colorectal cancer. The researchers write: "Beta carotene may not be the active cancer-inhibiting component of the fruits and vegetables identified as protective in observational studies, or the intake of beta carotene may be only a nonspecific marker for lifestyles that protect against cancer." An editorial in the same issue states that the results of the trial "do not disprove the potential benefits of antioxidant vitamins, but they do provide timely support for skepticism and for a moratorium on unsubstantiated health claims." The April 14 issue of *The New York Times* quotes Dr. Gilbert S. Omenn, dean of the School of Public Health at the University of Washington: "This study raises a big yellow caution flag."

Chung eyes supplement industry. The April 21 edition of the CBS broadcast newsmagazine "Eye to Eye with Connie Chung" featured a segment titled "Vitamin War," which Chung introduced with the statement: "Vitamins may be the 'Jaws' of the '90s. Just when you think it's safe to take them, another wave of research rocks the boat." The segment depicted the supplement marketplace as an unregulated, four-billion-dollar industry that uses scare tactics to stir up protests against regulation.

Health food store sales. *Health Foods Business* estimates that 38.5% of sales in health food stores last year were for vitamin supplements and similar products. On the basis of its annual survey, the magazine estimated that 7,500 stores grossed \$1.74 billion for these products, representing a 17% increase from 1992. Total sales for all products were \$4.52 billion (up 19%), including \$679 million for herbs and herbal teas (up 7.2%) and \$131 million for books (up 19%). Homeopathic "remedies" accounted for 8.9% of the vitamins/supplements category (about 5% fewer dollars than in 1992).

FTC nails Nu Skin. Nu Skin International, Inc., and three of its distributors have agreed to pay a total of \$1,225,000 to settle charges that they made false and unsubstantiated claims for Nu Skin products and exaggerated potential earnings for distributors. Nu Skin is a multilevel-marketing company that sells skin care products and dietary supplements. Under the agreement, the accused parties admit no wrongdoing but are prohibited from making unsubstantiated claims that: (1) *Nutriol Hair Fitness Preparation* or any substantially similar product can prevent or remedy hair loss or is as effective or more effective than the prescription drug minoxidil (Rogaine), (2) *Face Lift with Activator* or any similar product can permanently remove wrinkles or is equivalent to or better than the prescription drug tretinoin (Retin-A), and (3) *Cell-Trex* or any similar product will promote the healing of third-degree burns. The agreement also specifies how potential earnings must be accurately disclosed. The money will be available to provide redress to consumers, with any leftover amount going to the U.S. Treasury.

"Osteoporosis gene" identified. Australian researchers have identified a single gene that controls loss of bone mass and the development of osteoporosis as humans age [Nature 367(6460):216-217, 1994]. They identified two types of the gene in 250 twins whose bone density varied according to the type of gene. The gene specifies the vitamin D-receptor code and thereby controls the buildup and disintegration of bone.

Calcium and osteoporosis. A two-year study has found that calcium supplementation reduced bone loss in normal postmenopausal women who had an average calcium intake of 750 mg per day [NEJM 328:460-464, 1993]. The study involved 122 normal women who were at least three years postmenopausal. Half were given 500 mg calcium twice daily, while the rest received a placebo. The placebo group lost bone at a rate of about 1% per year, while the calcium group had half to two thirds this rate of loss. An accompanying editorial identifies several questions that research has not yet answered. Its author, however, says there are enough data to recommend that most postmenopausal women consume at least 1,000 mg and preferably 1,500 mg of calcium per day, as well as 400 to 800 IU vitamin D [NEJM 328:503-505, 1993]. Decreasing bone loss reduces the incidence of hip fractures, which are a serious problem among elderly women.

ADA approves naturopathy-school program. Last summer ADA approved a "didactic program in dietetics" at Seattle's Bastyr University. Completion of such a program is the profession's minimum academic requirement. Bastyr is an accredited school of "natural health sciences" that has offered courses in auriculotherapy (ear acupuncture), electroacupuncture, homeopathy, *jin shin, tui na*, and "whole foods." (*Jin shin* and *tui na* are vitalistic forms of "body-work.") ADA approval will remain in effect at least until March 2003. An item in the April 1994 issue of *Vegetarian Times* states:

[N]utrition students...will be able to graduate from a program with the nutrition community's imprimatur of respectability: approval by the American Dietetic Association....The approval means that the college's nutrition program is consistent with the "mission and philosophy" of the ADA, says Beverly Mitchell, administrator of the ADA's department of education....

Bastyr's nutrition department chair Joan Popyach [a registered dietitian with a Ph.D. degree in nutrition] says that the certification makes her university the only natural health science college to have won the ADA's mark of approval. According to Suzanne Myer, co-director of Bastyr's dietetic program, what will set the college's program apart from other ADA-approved programs is its emphasis on whole foods and alternative protein sources....

Though the ADA says its mark of approval is not a comment on the validity of alternative medicine, Popyach says she hopes the approval is "a sign of growing respectability [for alternative health care providers] by the nutrition community and the public at large."

ADA's approval is based on its review of a detailed application. The process did not involve an on-site evaluation of Bastyr's teachings. In late April, Dr. Stephen Barrett phoned ADA and asked an official why ADA had approved a program at a school that teaches "health nonsense." The official told Barrett that the application had met ADA's criteria for approval and that a lawsuit could have resulted if ADA had not followed its own rules. Dr. Barrett requested a copy of the application but was told that the evaluation process is confidential.

Ban proposed for lead-soldered cans. FDA has proposed banning the use of lead-soldered cans for foods sold in the United States. American manufacturers stopped using lead-soldered cans in late 1991, but about 10% of imported foods are still packaged in them.

Menu "labeling" proposed. FDA has proposed demanding that restaurant menus conveying health or nutrient-content claims meet some of the labeling requirements for grocery store food. The proposal would require a reasonable basis for such claims.

Behavior not related to sweetener use. A controlled double-blind study has found no relationship between children's intake of dietary sucrose or aspartame and their behavior and cognitive function [NEJM 330:301-307, 1994]. The study involved 25 normal preschool children (ages 3 to 5) and 23 school-age children (ages 6 to 10) described by their parents as sensitive to sugar. During consecutive 3-week periods, the children and their families followed diets high in sugar, aspartame, or saccharin (considered the placebo). For the children described as sugar-sensitive, no difference was found in any of 39 behavioral or cognitive variables among the three diets. For the preschoolers, only 4 of 31 measures differed from one diet to another, but there was no consistent pattern. The researchers concluded: "Even when intake exceeds typical dietary levels, neither dietary sucrose nor aspartame affects children's behavior or cognitive function." Reprints are available from Mark L. Wolraich, M.D., Child Development Center, 2100 Pierce Avenue, Nashville, TN 37232.

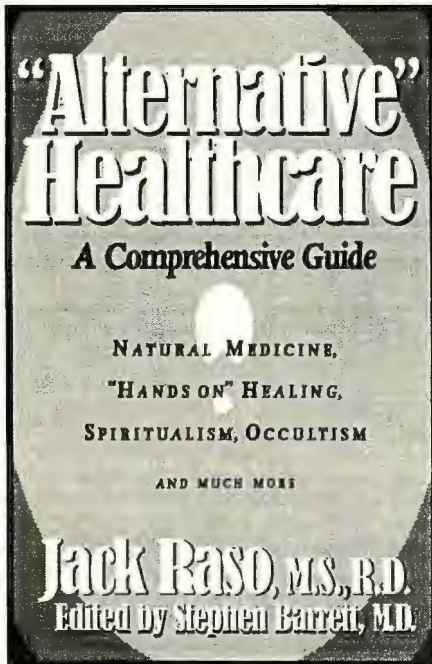
"TMJ dentist" found guilty of perjury. In 1989, the broadcast newsmagazine "20/20" presented a piece on fraud committed by dentists treating TMJ (temporomandibular joint syndrome), a painful jaw disorder. The program included an interview with John Dodes, D.D.S., president of the New York State Chapter of the National Council Against Health Fraud. The thrust of the segment was that Owen Rogal, D.D.S., of Philadelphia, was over-diagnosing and over-treating patients. Rogal claimed that reporter John Stossel had TMJ, but several other dentists, including Dodes, informed Stossel that his jaws were perfectly normal.

Rogal sued ABC News and Stossel for defamation and subpoenaed Dr. Dodes for deposition. Rogal lost the suit, and ABC News and Stossel sued him and his attorney, M. Mark Mendel, for perjury and professional misconduct, respectively. On March 29, Judge Joseph I. McGlynn, Jr., ruled that both Rogal and Mendel were guilty and set a date for the imposition of sanctions.

McGlynn stated: "Dr. Rogal's testimony was so thoroughly discredited by these outright contradictions and numerous inconsistencies that the jury had little difficulty in rejecting his claim. Ordinarily an adverse verdict would be a sufficient sanction. But Dr. Rogal showed such an utter contempt for the oath that additional sanctions are called for."

Monsanto sues BST critics. Monsanto Chemical Company has filed suit against two dairy producers, charging that their promotional materials falsely imply that milk from untreated cows is safer or better than milk from cows treated with bovine somatotropin (BST). BST, also called bovine growth hormone (BGH), is produced naturally in the anterior pituitary gland of cattle. Injections of BST can boost the milk output of cows by about 15%. Using recombinant DNA technology, scientists have been able to make it at a price low enough for commercial use. Milk produced by BST-treated cows is no different from milk produced by untreated cows, and small amounts are found in all cows' milk. BST treatment does not increase these levels. Moreover, BST is digested like any other protein in milk and is not biologically active when ingested. However, the health food industry and opponents of biotechnology are spreading false claims that it is dangerous and is bad for the health of cows. FDA has proposed that labels claiming that milk was not produced by BST-treated cows must also state: "No significant difference has been shown between milk derived from rBST-treated and non-rBST-treated cows."

New this month from
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“Alternative” Healthcare

A Comprehensive Guide

Jack Raso, M.S., R.D.

This important new reference book addresses the vast array of treatments and philosophies that postulate supernatural phenomena as the key to health and disease. Author Jack Raso has combined his own personal experience with alternative healthcare, in-depth research on the wide variety of methodologies, and an educational background in health science and nutrition to simplify the often confusing field of “alternative” healing techniques. Raso also includes an account of his own personal odyssey from believer to skeptic, demonstrating how easily a person raised in a devoutly religious tradition accepts supernatural explanations and mystical approaches to physical ailments.

Also included are discussions of such techniques as hands-on healing, Qigong, and faith healing. Raso concludes with a first-hand account of his many revealing visits to various “alternative” medical practitioners as well as an encyclopedic glossary of “alterna-

“alternative” healthcare terminology that fully explains the formidable jargon so often used by proponents of “alternative” treatment.

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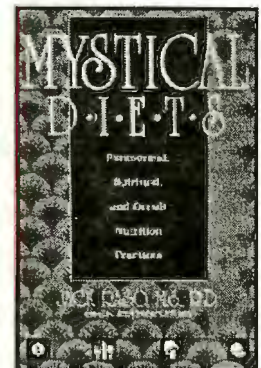
Mystical Diets

Paranormal, Spiritual, and Occult Nutrition Practices

Jack Raso, M.S., R.D.

A revealing first-person account of a onetime believer’s four-year exploration of “holistic” healthcare and nutrition esoterica. Chapters cover supernaturalistic beliefs, practices, and systems that tie in with what the author calls “paranormal nutrition,” particularly: Anthroposophy, applied kinesiology, Ayurveda, the Edgar Cayce tradition, chiropractic, Gerson therapy, macrobiotics, multilevel and mail-order marketing of nutrition products, Natural Hygiene, naturopathy, nutripathy, “nutritional herbology,” “nontraditional” health education, Theosophy, and vitalistic healthcare. The glossary is a substantial resource in itself, including descriptions of more than seventy-five “alternative” methods and systems.

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FORUM

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Alternative Healthcare, Ayurveda, and Neo-Hinduism

Jack Raso

In *Mystical Diets: Paranormal, Spiritual, and Occult Nutrition Practices* (1993), I introduced the term "paranormal nutrition" (the book's working title) to categorize the nutritional precepts of systems with implicit or overt supernatural premises, for example: anthroposophy, ayurveda, Gerson therapy, macrobiotics, Natural Hygiene, nutripathy, and nutritional herbology.

Alternative healthcare is profuse with paranormal nutrition. It behooves us to examine this milieu, a phantasmagoria of systems and methods whose only common theme is distrust of science. To ignore the theoretical underpinnings of alternative medicine is to misunderstand the dynamics of popular nutrition. Ayurveda provides a case study.

Part I: Supernaturalism

A front-page headline in the June 13 issue of *The New York Times* read: "As Life's Questions Get Harder, Magic Casts a Wider Spell." The crux of the article is that "illusion and delusion in art and commerce are wrapped around daily life like an impossibly knotted necklace." Television and cinema abound with affirmative talk of supernatural "entities" (e.g., angels), "places" (e.g., heaven), and miracles. Magic—any art that purports to sway or predict courses of events supernaturally—comes in countless forms. Many are socially acceptable. Indeed, in most American circles, at least a veneer of marginal deference for the "white magic" of major religions is de rigueur. The April 4 issue of *U.S. News & World Report* presented the findings of a recent poll on religious beliefs. According to the article, aptly titled "Spiritual America," about 95 percent of Americans affirm belief in God or a "universal spirit" and only 9 percent deny having a religious affiliation. Do religious beliefs predispose believers to supernaturalistic health methods?

Ancient Wisdom?

During prime time on July 5, NBC broadcast "Cured! Secrets of Alternative Healing," a misbegotten special for which I had been interviewed on camera last September. This was a tedious collection of mini-docudramas tending to canonize vitalistic "medicine." The "skits" included "Samuel Hahnemann" (founder of homeopathy), "Witchcraft" (the

cult of the wise woman"), "Franz Mezzmer [sic]" (propounder of animal magnetism), and "Ancient Acupuncture." Moderator Kenneth Harvey described herbal medicine, homeopathy, and hypnosis as "modern techniques based upon ancient wisdom." He stated: "A lot of things we do to make ourselves feel better is based on natural healing wisdom going back centuries." Host Olympia Dukakis concluded: "Tonight we have seen how five ordinary people reached back into the past to discover healing wisdom that eased their modern afflictions....All of these alternative treatments, founded upon timeless wisdom, are available right now in virtually every community in America...In the twenty-first century, the new medicine will combine all known healing techniques: conventional medicine, alternative medicine, and ancient wisdom."

Ancient wisdom—or what passes for it—has long fascinated me. We tend not only to be curious about ancient products of human endeavor but to yearn for them. Even stagnant, absurd health methods may "improve" with great age. In *Occult Science in Medicine*, first published over a century ago, Franz Hartmann, M.D., expressed a misguided attitude that is prevalent today:

There is a certain law of periodicity, according to which forms disappear and the truths which they contained reappear...embodied in new forms. Seasons go and come, civilizations pass away and grow again, exhibiting the same characteristics possessed by the former, sciences are lost and rediscovered, and the science of medicine forms no exception to this general rule. Many valuable treasures of

the past have been buried in forgetfulness; many ideas that shone like luminous stars in the sky of ancient medicine have disappeared during the revolution of thought, and begin to rise again on the mental horizon, where they are christened with new names and stared at in surprise as something supposed never to have existed before.

Consider just a few forms of born-again "medicine" and their postulates: acupuncture (*chi* and a network of invisible "channels"), ayurveda (*prana*), homeopathy ("vital force"), macrobiotics (yin and yang), naturopathy ("life force"), shiatsu (*ki*), transcendental meditation ("cosmic consciousness"), and past-life therapy (reincarnation).

"Body-Mind-Spiritism"

The keystone of alternative healthcare is a notion for which I have coined the term "body-mind-spiritism." This refers to a supposed semiautonomy of body and mind, or of body, mind, and spirit. Proponents tend to blur the distinction between mind and spirit (soul). Yet an understanding of this distinction is crucial to the unraveling of many alternative approaches. The word "mind" refers basically to sequences of thoughts and sensations, a process that occurs continuously until death. The mind is not a material thing, but a concept representing the cascade of multitudinous physiological events that amount to thinking. Thinking is a "two-faced" activity: subjective and psychological at the macro-level, objective and physiological at the micro-level. Psychological terms such as *apathy*, *depression*, *fear*, *neurosis*, and *obsession* describe only the macro-level of thinking. All thoughts and feelings arise from physiological processes that occur in the central nervous system, especially the brain. The mind is a macro-level (large-scale or global) property of the brain. The mind, the brain, and the nerve cells of the brain are analogous, respectively, to water, water molecules, and the atoms of which water molecules are composed. Liquidity is a collective, macroscopic property of water molecules at room temperature. The elements of water—hydrogen and oxygen—bear no resemblance to water. As with liquidity, the mind is a manifestation of matter at high levels of complexity. The foregoing description is consistent with materialism and the identity theory of mind/body (also called physicalism)—a naturalistic theory. According to naturalism, nature consists of all that exists—nothing lies above or beyond it.

Naturalism is the basis of science. Its antithesis is supernaturalism, according to which there are quasi-entities outside the universe (natural world) that at least occasionally affect courses of events. Alleged supernatural beings and forces are, by definition, inherently mysterious—probably even inherently incomprehensible, since beings and forces are explicitly definable only in naturalistic terms. Medical supernaturalists portray the mind either as a reflection of a "vital force" or as a function of a "cosmic consciousness." Although scientists have not yet worked out a definitive theory of mind, impenetrable or unknown forces or substances will not figure in any real understanding of the nature of thinking.

Recourses to supernatural, paranormal (not scientifically explainable), or limitless beings or "forces" are recourses to fantasyland and, therefore, have quite unpredictable and fuzzy results. Supernaturalistic theories—premises involving immeasurable or indefinable "agents"—hold sway in the realm of alternative healthcare. The following theories are among the most important basic beliefs in alternative medicine.

Mind/body dualism: Mind and body are disparate and separable.

Mind/body interactionism: Mind and body are disparate entities that affect each other.

Monotheism: There is a perfect, eternal, almighty, omniscient, benevolent being who created and rules the universe, i.e., God.

Mysticism: All conclusions, beliefs, and opinions based on analysis, deduction, and/or common experience are illusory. True knowledge is attainable only through contemplative or intuitive union (or near-union) with God, a "higher reality," or the universe, but such knowledge is indescribable.

Pantheism: "God" and "nature" are synonymous. [Pantheism, which has an affinity with Eastern mysticism, is both naturalistic and trivial unless the believer ascribes supernatural phenomena or a morality to "nature." Unnecessary capitalization of the word "nature" usually indicates supernaturalistic pantheism.]

Vitalism: An invisible, intangible, unique form of energy is responsible for all the activities of a living organism and [according to some vitalists] can exist independently of the organism. [There are more than forty synonyms for "life force," ranging from the generic (e.g., *élan vital*) to the sectarian (e.g., *chi*, *orgone*, *prana*, and *soul*) and the obscure (e.g., *entelechy* and *essence*).]

The lure of mysticism lies in the desire to validate subjective experience. The appeal of pantheism lies in the yearning for connectedness and in the desire to legitimize traditional beliefs, which many people misconstrue as "natural laws." The appeal of vitalism—the supreme sticking point between scientific medicine and alternative healthcare—lies in its compatibility with humankind's longing for immortality. Self-confidence, belongingness, and supernormality are potent, highly salable wishes.

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Ayurvedists, occultists, other paranormalists, and dime-store metaphysicians make much of consciousness and fields of "energy." For example, Sri Swami Rama, founder and "spiritual head" of the Himalayan International Institute of Yoga Science and Philosophy, promotes the theory of the *koshas* (literally, "sheaths") as "a complete model of a human being." According to an ancient Hindu treatise, the *koshas* surround the atman (soul, or "true self") of living humans. Supposedly, the atman is identical with Brahman, an ineffable, eternal, omnipresent, absolute being. Union with Brahman—i.e., personal extinction—is the supreme goal of Hinduism. The *koshas* include: (1) the physical or material sheath (human body; also called the food sheath), which is the

outermost covering; (2) the vital or "pranic" sheath, which animates the body; (3) the mental sheath, which receives sensory impressions; (4) the intelligence sheath, the seat of discrimination and volition; and (5) the sheath of bliss, the innermost and subtlest covering—a "pool of boundless joy," according to the Himalayan Institute. Besides the *koshas*, the "subtle anatomy" of ayurveda includes: (1) *nadis*, "canals" (*srotas*) that carry *prana* ("cosmic energy") throughout the body; (2) chakras, "centers of consciousness" that connect body and soul; and (3) 107 *marmas*, which are somewhat like acupuncture points.

Do such timeworn postulates better our understanding of the world, or do they facilitate misunderstandings that allay our fears and empower religionists,

con men, megalomaniacs, and single-minded cranks? Supernaturalistic pantheism and the "strong holistic" worldview, which says that the universe is uninterrupted in substance, implicitly posit the aether (ether), a hypothetical medium for light disproved in the nine-

teenth century. Nevertheless, modern paranormalists cling to the notion of an ethereal connection between human minds and "cosmic consciousness." In *Physics and Psychics* (1990), Dr. Victor J. Stenger, professor of physics and astronomy at the University of Hawaii, explains that the constituents of matter do not interact through "invisible fields" but by exchanging particles such as photons. He writes:

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[N]o evidence exists that human consciousness is connected in any way to an all-pervading cosmic fluid, through electromagnetic aural waves or quantum mechanical particle waves. To the best of our knowledge, the universe is composed of discrete chunks of matter that interact locally....

[T]he classical gravitational and electromagnetic fields of nineteenth-century physics have become the mathematical tools for describing particle interactions in the twentieth. They have no reality other than mathematical, though in physics classes they are normally presented as real entities—contributing greatly to the confusion that is exploited by paranormalists....

Alternative healthcare represents an attempt to de-secularize medicine and sanitize religion.

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A Religious Undertow

Most opponents of quackery critique alternative methods in terms of science, the law, and politics. This is well and good. Typically, however, they are publicly reticent about picking apart the religious undercurrent that fuels the alternative medicine movement. Critics who are religious generally either play down this undercurrent or review it from a standpoint involving denominational beliefs. For example, in *Can You Trust Your Doctor? The Complete Guide to New Age Medicine and Its Threat to Your Family* (1991), fundamentalist Christians John F. Ankerberg and John F. Weldon, M.Div., Ph.D., D.Min., describe acupuncture as an invitation to "spiritistic operations," applied kinesiology as adaptable to "occultic purposes," crystal healing as an "energy therapy" whose power source is the "spirit world," and homeopathy as the modern harbinger of "new age healing" whose occasional effectiveness may be due to "spiritistic power." On the other hand, critics who are atheists or agnostics are disinclined to risk alienating current and potential antiquackery allies. Moreover, ethnic identification can narrow anyone's criticisms.

Apparently, many health professionals treat rationalism and religious unbelief as mere personal options rather than as integral to the scientific perspective. On May 19, I gave a

presentation titled "Alternative Healthcare and Supernaturalism" at a Purdue University conference on "nutrition fraud." To say the least, I was not a hit. For example, one evaluation form respondent expressed a lack of appreciation for the setting forth of a "personal belief system." Another respondent said I should have "↓" my "theological beliefs." Another, a self-proclaimed Christian, evidently found my "philosophy somewhat offensive." If a speaker at such a conference verbalized accord with, say, secular humanism or communism, it would be justifiable to charge him with promoting a personal belief system. But rationalism and religious unbelief are not mere matters of opinion. Moreover, they are contrary to theology, which is always and only a matter of opinion. It is no wonder that even health professionals who are staunchly rational skeptics beat around the burning bush of medical supernaturalism. Attacking it head-on threatens neighboring religious beliefs and upsets those who have internalized them. However, having studied alternative healthcare up close since 1989, I suspect that to overlook or downgrade its religious undercurrent is a disservice to the public. Furthermore, I consider the term "religious skeptic" an oxymoron. Science follows sound evidence. Religion accommodates experiential evidence and accepts, rejects, or warps all manner of evidence according to preconceived notions. This is the essence of pseudoscience.

Part II: Metaphysical Delusion

In *Metaphysical Delusion* (1991), philosophy professor Fraser Cowley writes:

People profess to believe what they desire to believe in order to believe it....

Religions provide a sense of what we are, where we stand, how we ought to live, and of a meaning and purpose in life. Anxiety may be defined negatively as the lack of all that. It arises when some established faith ceases to appease it. But positively it is, I think, the obscure apprehension of our freedom. Where we stand and the meaning or purpose of our lives depend on us. That this should not be so is what we desire and the activities of believing are the expression of that desire. When anxiety arises, it demands appeasement, not analysis, and people who lose one faith commonly seek another.

Hinduism, the extremely complex religious tradition that predominates in India, has had a profound influence on alternative healthcare. The main doctrines of Hinduism include nirvana (union with Brahman), nonviolence, reincarnation, supernaturalistic pantheism, and yoga. There are many kinds of yoga. Hatha yoga, a system marked by various stylized physical postures, is the most popular form in the West, but other forms are more spiritual; and the ultimate goal of all traditional modes is union with Brahman. Gurus, meditation, yoga, chakras, and "subtle" (nonphysical) bodies are prominent and uncontested parts of alternative medicine.

"Temple of Truth"?

The word "ashram" refers to any base for a religious community led by a guru (spiritual teacher or master). Ashrams dot the U.S., but, to my knowledge, their number is unknown, no doubt partly because they encompass everything from private houses, storefronts, and urban walkups to extensive retreats and monastic villages. They are hotbeds of pseudo-healing. On May 21 and 22, I attended an "open donation weekend" titled "Earth Awakening & Self Renewal" at Ananda Ashram, one of the major ashrams on the East Coast. For insight into why people embrace magical methods, nothing beats mingling with believers.

Part of the Yoga Society of New York, Ananda Ashram covers more than ninety acres in Harriman, a village in upstate New York near Monroe. It encompasses a lake, an islet, and about a dozen buildings, including two houses for residents, three for guests, and "The Healing Center." One of my companions informed me that the Yoga Society has purchased land in California to develop as an even larger communal complex. Ramamurti S. Mishra, M.D., founded the ashram in 1964. He adopted the name "Brahmananda Sarasvati" in 1984 and is now referred to as "Shri Brahmananda Sarasvati Udasina" or, affectionately, as "Guruji." According to the ashram's Summer 1994 catalog, Brahmananda had been a professor of medicine and surgery in Bombay. It further states:

During the last years of his life of tireless service to humanity, Shri Brahmananda's physical health began to fail progressively. He suffered several heart attacks and, in 1983, a severe stroke which permanently affected his speech and the right side of his body.... He accepted his stroke as his "final enlightenment"....

Brahmananda "left his physical body" last year. In one of his "meditations," Brahmananda claimed that behind one's "physical and psychological body" lies a "body of electricity" whose manifestations include tingling, chills, thrills, and extreme happiness. In another, he claimed that humans have five "bodies": material, electrical, mental, psychosomatic, and temporospatial. The Spring 1994 issue of *Sanskrit Today* included excerpts from a 1993 interview with Brahmananda. The interviewer asked him: "What is the most important teaching you received from your teacher?" Brahmananda responded, in part:

Thou Art That.... What role has religion? One point—they all agree unanimously—that is that you are not the body and mind....

We are not united—but one. Therefore, you cannot see outside God.... God can lose everything without you. Because no more would God be absolute.

The weekend schedule at Ananda included *agnihotra* (a daily rite of contemplation), "crystal meditation," hatha yoga, *homa* (a fire-veneration rite), Qigong (so-called Chinese yoga), *satsang* (religious discourse), and other activities. The ashram also offers workshops and lectures on such subjects as acu-yoga, astrology, ayurveda, *hasya* yoga ("healing through humor"), and "natural food preparation and balancing."

Businessman Ashok Parmar, his wife Indira Parmar, M.S.W., C.S.W., and their daughter accompanied me to the ashram. Mr. and Mrs. Parmar are humanistic Hindus who do not believe in reincarnation. During the drive to Monroe, Mr. Parmar described ayurveda as "time-tested." I countered that this term was misleading—that time does not actually test anything and that most people who use ayurveda do so because it is part of the tradition into which they have been indoctrinated. I later told him that a putative remedy of apparent utility in the short term may prove deleterious in the long run; hence the desirability of elaborate, lengthy experimentation.

We arrived at the ashram on Saturday evening shortly after mealtime, ate salad and vegetarian patties, and around 7:30 attended a session incorporating *homa*, meditation, and *satsang*. Joan Suval, who had been Brahmananda's main disciple, presided. According to newspaper clippings exhibited in the dining room foyer, Mrs. Suval is a former New York City actress who led a hectic life before she became a "stress therapist." The article stated that she had been director of the ashram from 1966 to 1971.

The session took place in the multiunit Main House. There, in just three rooms and a hallway, about fifty pictures of Brahmananda were on view. Decked with garland, a large, framed photo of the guru dominated the "meditation room." It stood on a very low, cushioned, wooden chair. Also inside the frame was a small photo of Brahmananda's corpse. A candle and a magnifying glass lay near the photos. On the

carpeted floor in front of the chair were two plastic containers of cookies ("religious dessert"), a vase of cut flowers, and a plate covered with a paper napkin. Three chakra diagrams hung on the walls. One described chakras as "the Vibration Centers of the Individual and the Cosmic Existence for Spiritual Healing and Self-Realization."

At the fireplace, someone tended a nontraditional *yagnakund*—a flaming piece of charcoal with incense in a metal container. Mr. Parmar explained that, traditionally, *yagnakunds* are ritually constructed with bricks and cow dung. He said that one of the purposes of the *homa* is to purify the air and that it symbolizes the five Vedic "elements": earth, sky, water, sun (light and fire), and air. As we entered the room, participants sang a Sanskrit song, and naturopath Ramesh Lahiri, a resident of the ashram, played a harmonium (reed organ). The music reminded me of a particularly spooky sequence in the film "Horror Hotel." About thirty people were present. Most sat on the floor. I found sitting on a pillow at floor level without back support quite uncomfortable.

After the music stopped, Mrs. Suval asked us to "just relax" and said of Brahmananda: "He is even more powerful and more with us...." She spoke in a soothing, almost hypnotic voice.

About thirteen minutes of silence followed Suval's preliminary comments. Then the music resumed, now a dirge. After this interlude, Suval welcomed us and asked how many of us had "felt happy" during the period of silent meditation. She said Brahmananda had correctly predicted that more people would come to the ashram when he was in his "formless form" than when he was in his "physical form." She requested that newcomers stand and introduce themselves. Later, Suval said that the "duty" of Ananda Ashram is to present not only the teachings of Brahmananda but those of "other masters." She described Ananda as "a place where all avenues of truth are open," said that Brahmananda had advised using "Mother Nature" as the "greatest role model," and read two poems, one titled "Consciousness." After expounding on these, Suval read from Brahmananda's 1965 lecture notes:

Theologians have trouble proving the existence of a god who is separate from us, but this is self-evident. Even the man who denies his self proves it by his own existence. There is no need to prove the existence of the sun, when we have its rays before us; no need to prove the existence of electricity, when we have the shining light of the electric lamp. Neither is there any need to prove the existence of God, because you—you are the light radiation of God.

Do you wish to understand this god? If you do, then try to know and understand *your* consciousness. Then what you know about that will also apply to cosmic consciousness. They are not two, your consciousness and cosmic consciousness. The whole concept of a separate, individual existence depends only on superstition, imagination, a phantom understanding....

To introduce God through his universe is a detour. Find god-consciousness by consciousness.

Suval also read from *The New Alchemy to Turn You On*, by Bhagwan Shree Rajneesh (1931-1990). Originally known as

Chandra Mohan Jain and later as Osho, Rajneesh promoted sexual indulgence as a spiritual path. The title "Bhagwan" means "god-man" or "blessed one"; "Bhagwan Shree" means "honored lord"; and "Rajneesh" derives from the Sanskrit word for "king" or "ruler." A self-proclaimed messiah, Rajneesh owned 85 Rolls-Royces and a Lear jet. (Mr. Parmar described Rajneesh's lifestyle as a satirical reaction to Hindu fundamentalism.) Rajneesh died of heart failure at age 58.

Suval invited questions but added: "They should not be theoretical questions. Are there any questions from the heart? Practical questions?" She characterized Ananda as "an ashram of self-analysis....some kind of magnificent temple of truth, of peace." She said that Brahmananda was known as "the smiling guru" and that he had even enjoyed his stroke. Later, a woman named Krishna played a guitar and sang facing the guru's picture. The refrain was: "You said you'd always be around."

The Parmars and I stayed overnight in Panini House, named after a Sanskrit grammarian. Therein, another garlanded photo of Brahmananda stood on a thronelike wooden chair—a *gurugadi*, or "master's throne." The bedroom doors were not lockable from the outside. There were small, cardboard instructional signs in bedrooms, bathrooms, and corridors, such as one that read: "Please keep the plastic shower curtain inside the bathtub and remove hair from tub drain." Mr. Parmar characterized Ananda's philosophy as "a kind of bhakti yoga"—an approach based on unquestioning faith rather than on the pursuit of knowledge. (He later added that some of Brahmananda's followers would take exception to this characterization.)

Freedom? Or Nothing Left to Lose?

On Sunday afternoon, I lent a hand as the Parmars prepared dinner for residents and visitors. Ananda's cuisine is lactovegetarian. Mr. Parmar added a small amount of asafoetida to a mixture. He explained that ayurvedic doctors use asafoetida as a remedy for gastrointestinal distress, while ayurvedic cooks include it in dishes that contain ingredients likely to cause such distress (e.g., lentils). He stated that the main reason for its inclusion is not flavor but prevention.

Before and during dinnertime, I conversed with Ramesh Lahiri, a lecturer on "living food nutrition" and

"enzymatic food." Lahiri said he was a member of the American Natural Hygiene Society and a graduate of a 4½-year naturopathy degree program in India. He described his nutritional philosophy as a hybrid of ayurveda, Natural Hygiene (the subject of the absurd bestseller *Fit for Life*), and the teachings of Gary Null. He claimed he does not consume any heated foods except—"once in a blue moon"—"thin, watery" soup such as miso. He further claimed that intestinal flora produces sufficient vitamin B₁₂ in humans. I observed as he put the ingredients of his meal into a blender: apple, banana, raisins, sesame seeds, sunflower sprouts, and spices. He said he sometimes includes almonds.

Lahiri was 5'8" tall and weighed between 118 and 120 pounds. "Freedom is the most important thing," he told me. I asked him if he thought that the primary health benefit of consuming only uncooked food was freedom from the trouble of cooking. "Yes, absolutely," he replied.

On June 13, I phoned the ashram, primarily to ascertain the age at which the guru had died. The person who answered the phone said he supposed that Brahmananda had been 72, but he referred me to Bharati, a representative, for an "official" answer. I told Bharati that I was writing an article on Hinduism and ayurveda for *Nutrition Forum*, that I had attended the "Earth Awakening" weekend at the ashram, that the article deals partly with Ananda Ashram, and that, as a matter of course, I wanted to learn Brahmananda's age at death. My simple question precipitated an interview—but I was the interviewee! Bharati referred me to Ananda's Summer 1994 catalog for information about the guru. I told her that the catalog does not mention his age. Bharati stated: "He was never interested in mentioning that; so we honor him that way....He would never talk about his age." After I told her I would write that Ananda declined to provide the information, she said that he had died at 70. She further stated that Ananda was on the Cult Awareness Network's "list." "We're not a religion," she told me. "[W]e have a lot of freedom." (On June 24, I called the national office of the Cult Awareness Network—CAN—in Chicago. I spoke with Marty Butz. Butz told me that, although CAN has files on organizations about which it receives inquiries, it does not maintain a "list of cults." "We don't typically label groups as cults," he said.)

Does the Ananda lifestyle—marked by faith, orderliness, simplism, and sophistry—exemplify utopianism or reactionary escapism?

Part III: Ayurveda and TM

I have reviewed ayurveda in detail in *Mystical Diets* and *"Alternative" Healthcare: A Comprehensive Guide* (1994). It is a major wellspring of "paranormal nutrition." Here, however, my principal aim is to illuminate the magical thinking and ritualism that are part and parcel of ayurveda.

Yoga Has a Sister

Ayurveda, the so-called science of life, is the medical phase of Hinduism and perhaps the best modern example of religious "medicine." Promoters applaud it as the

"most ancient" and "most complete" system of "natural medicine." Yoga and ayurveda are separate doctrines with common sources. An article in the March/April 1994 issue of *Yoga International* calls ayurveda "yoga's sister science."

Whether you can take ayurveda out of Hinduism is debatable, but you can't take Hinduism out of ayurveda. Ayurveda is based principally on two texts regarded as supplemental to the *Atharva-veda*, the last of the four fundamental Hindu scriptures (the Vedas). *The Encyclopedia of Eastern Philosophy and Religion* (1989) states that the *Atharva-veda* is "devoted to the 'knowledge of magic spells'" and "can be seen as the oldest document of Indian medicine." The *Atharva-veda* features magical formulas, curses, and mystical hymns. More than a hundred hymns relate to putative botanical cures for various maladies—including conditions purportedly due to demons, ghosts, and gods. "Remedies" and "preventives" include amulets, exorcism, invocations, and other incantations.

The branches of ayurveda may include the following.

- (1) **Internal (general) medicine**
- (2) **Surgery**
- (3) **Ophthalmology and otolaryngology**
- (4) **Toxicology**
- (5) **Psychiatry** (e.g., "treatment" of seizures supposedly due to evil spirits)
- (6) **Pediatrics or gynecology/pediatrics**
- (7) **Geriatrics** (including yoga therapy)
- (8) **Sexology** (also called "virilisation therapy" and the "science of aphrodisiacs")
- (9) **Panchakarma**

Only four branches are in considerable use today: internal medicine, geriatrics, sexology, and *panchakarma*.

Panchakarma, whose status as a branch is debatable, is a set of five "purificatory steps" or "elimination therapies":

- (1) **Emesis therapy:** "therapeutic vomiting"
- (2) **Purgation therapy:** evacuation of the bowels with a laxative
- (3) **Errhine therapy** (nasal insufflation therapy): intranasal application of "decongestants" such as medicated oils, powdered herbs, and ghee (a semifluid clarified butter)
- (4) **Oily enema therapy**
- (5) **Decoction (watery) enema therapy**

Some ayurvedists regard the two types of enema therapy as one step and bloodletting therapy as the fifth. The aforementioned *Yoga International* article concludes:

Recently Pancha Karma practices have been introduced into a major hospital facility for the first time. Through Sharp's Clinic in San Diego, California, the Center for Mind Body Medicine, established by Dr. Deepak Chopra and Dr. David Simon, offers Pancha Karma treatment. The Center hopes to serve as a model for introducing Ayurveda and, specifically, Pancha Karma into hospitals throughout the United

States. In time this ancient therapy is bound to become one of the most important "new" healing methods in an increasingly health-conscious society.

Ayurvedic diagnosis involves examination of the eyes, face, lips, tongue, and nails. Ayurvedists associate parts of the lips and tongue, for example, with internal organs and maintain that discolorations, lines, cracks, and irritability in various areas indicate disorders in "corresponding" organs.

Ayurvedic Nutrition: More than a Matter of "Taste"

Tridosha, the principal ayurvedic theory, holds that five *mahabhutas* (literally, "great elements") constitute the human body: earth, air, fire, water, and *akasha* (ether, which supposedly pervades the universe). The preponderance of these "elements" determines various constitutional types, each prone to ailments due to a deficiency or excess of one or more elements. The terms "*pitta*," "*kapha*," and "*vata*" refer to the fundamental constitutional types and to their characteristic physiological forces (*doshas*). There are ten "body types": *pitta*, *kapha*, *vata*, and seven combination types. Each *dosha* is a blend of two *mahabhutas*: *pitta* of fire and water, *kapha* of earth and water, and *vata* of air and *akasha*. The thrust of ayurveda is to balance these three alleged forces. Toward this end, ayurvedic "remedies" supposedly augment or depress particular *doshas*, primarily through their "taste" (*rasa*).

Food constituents such as vitamins have no place in ayurvedic nutrition theory, which centers on "constitutional type," the season of the year, and sensory, macroscopic, and imaginary food characteristics. Supposedly, how much of each *dosha* the body produces depends mainly on diet—specifically, on how much of each *rasa* one consumes. There are six *rasas*: astringent, bitter, pungent, salty, sour, and sweet. A food's *rasa* purportedly indicates whether it will increase or decrease a particular *dosha*. The sensitivity of each *dosha* purportedly varies seasonally; that is, each *dosha* is more excitable during particular times of the year. Thus, ayurveda discourages the consumption of foods considered likely to increase a *dosha* prone to excitement.

Ayurveda also posits twenty "attributes" beyond the *rasas*—*gunas*, which likewise affect the *doshas*. The *gunas* include: heavy (e.g., avocado and cheese), light (e.g., ghee and lettuce), cold (e.g., coconut and milk), hot (e.g., chili, garlic, and yogurt), oily (e.g., ghee and soybeans), dry (e.g., corn and dark greens), slimy (e.g., okra), soft (e.g., tapioca), and sharp (e.g., chili). "Heavy" foods, for instance, allegedly contribute to strength and stability but tire the digestive system and depress appetite; while "light" foods supposedly increase digestion and appetite. "Cold" ("cooling") foods tend to quiet digestion, while "hot" ("heating") foods—including honey, red lentils, and yogurt—stimulate the "digestive fire." In *The Ayurvedic Cookbook: A Personalized Guide to Good Nutrition and Health* (1990), Amadea Morningstar writes:

The nature of Ayurveda is commonsensical...

I would recommend experimenting with foods.

Let yourself notice whatever effects they have on you, if any....

The concept of heating and cooling foods is widespread in many cultures. And yet there is much disagreement between cultures (and practices of healing) as to what constitutes the relative attributes of a given food. For example, Indian Ayurveda considers yogurt heating. In neighboring Tibet, yogurt is regarded as cool. And this from two cultures which practice relatively similar forms of natural medicine, both with good results!...Experiment for yourself, while allowing the experience of the centuries to guide you.

A booklet published in 1992 by Maharishi Ayur-Veda Products International, Inc., states: "You can enjoy a balanced diet naturally, according to your own instincts, rather than through intellectual or laboratory analysis....An innate sense of which foods are best for you is already built into your mind and body....[A]s you bring your mind-body type into balance you will spontaneously be aware of which foods are best for you."

Ayurveda further postulates that foods yield an "aftertaste"; that the "aftertaste" of some foods is different from their *rasa*; and that, therefore, after assimilation, some foods have an effect (*vipaka*) different from that indicated by their *rasa*. Moreover, the addition of spices or other seasonings to a food supposedly changes its "taste" and, thus, its effect on the doshas.

Ayurvedic dieting boils down to intuitive eating consistent with an elaborate but open-ended system. This system, which I regard as "nutrimedical" witchcraft, keeps individual experience on a pedestal and science at bay. (The January/February 1991 issue of *Nutrition Today* features an excellent article on ayurvedic nutrition.)

Empire of the "Giggling Guru"

Maharishi Mahesh Yogi, sometimes called the "giggling guru," was born in India in 1911. He was a disciple of Swami Brahmananda Saraswati—also known as Guru Dev—a leader of Vedantic Hinduism (India's main religion). Guru Dev died in 1953. From his yogic teachings, the maharishi (literally, "great seer") reportedly distilled Transcendental Meditation®, or TM®. In 1958, according to *TM: Discovering Inner Energy and Overcoming Stress* (1975), he "announced a plan to spread the benefits of TM all over the world." The guru gained prominence in the West in the 1960s, when he debated the Archbishop of Canterbury on British television and obtained the support of the Beatles.

The maharishi's many organizations include: Maharishi Ayur-Ved Products International, Inc. (MAPI); Maharishi International University (MIU); Maharishi AyurVedic Universities (or Schools) and Maharishi Vedic Universities (or Schools); and The Natural Law Party (NLP).

MAPI, in Lancaster, Massachusetts, sells such products as: *Maharishi Amrit Kalash Nectar* and *Maharishi Amrit Kalash Ambrosia*, "daily herbal supplements" that are "time-tested" and, with daily use, allegedly support

"underlying, holistic growth"; other *rasayanas*—"food supplements" that "are legendary for enhancing overall well-being"; "targeted nutrition" herbal "formulas" that "work holistically" (e.g., *Cough Soothe*); and "mind-body" teas and seasonings. A 1994 MAPI "Total Health Catalog" includes a list of 20 approaches that supposedly constitute "a complete system of reliable, natural health care," for example: TM, *panchakarma*, ayurvedic dietary programs, "pulse reading" ("to identify any existing or future imbalance and to indicate the necessary treatment programs to restore and maintain perfect health"), *Gandharva-Ved* therapy ("the use of melodic sequences of Vedic sound to restore physiological balance in the individual and nature as a whole"), Maharishi *gyotish* (Hindu astrology), and Maharishi *yagya* (a ceremony that focuses on Hindu deities).

MAPI has recently targeted health food stores as outlets for its herbal beverage preparations, herbal supplements, and aromatherapy products (e.g., *Pitta Aroma Oil*—"Cooling and relaxing to help balance Pitta"). With the slogan "Take a stand for higher profits," it offers display stands to retailers, such as one that describes *Vata Tea* as "calming," *Pitta Tea* as "cooling," and *Kapha Tea* as "stimulating."

MIU offers accredited bachelor's, master's, and doctoral degree programs in various fields, including an M.A. program in the "Science of Creative Intelligence" (SCI). The SCI program features a course titled "The Unified Field of Natural Law as the Source of All Streams of Knowledge II." Another course covers such ayurvedic approaches as *Gandharva-Ved* therapy, *gyotish*, and *yagya*. SCI, which is TM philosophy, posits the "Maharishi Effect." The gist of this claim is: if the square root of at least one percent of any population practices TM-Sidhi ("yogic flying") dedicatedly, quality of life will increase for the entire population.

On June 15, I conversed by phone with Richard LaMarita, director of New York City's Maharishi AyurVeda School. He told me that, within the last year, TM centers had become, "officially and legally," Maharishi AyurVedic (or Vedic) Universities (or Schools). He said that each state has at least one school.

One of NLP's purported goals is to eliminate disease and "culture ideal health and vitality for everyone" by "bringing life into accord with natural law."

I Take the First Step

On May 25, I attended an introductory lecture on TM at the Maharishi AyurVeda School. This nonprofit school and another enterprise, the Maharishi Vedic School (also called the Maharishi School of Vedic Sciences), share the ninth floor of a 12-story office building in Manhattan's Flatiron District. A brochure I received from the school states:

TM is a simple, natural, easily learned mental technique, practiced for 15 to 20 minutes in the morning and evening, while sitting comfortably with the eyes closed. During this technique, the individual's awareness settles down and experiences a unique state of restful alertness—as the body becomes deeply relaxed, the mind transcends all mental

activity to experience the simplest form of human awareness. This is transcendental consciousness.

The TM program, founded 30 years ago by Maharishi Mahesh Yogi, is a practical technique. It does not require adopting any specific beliefs or lifestyle. Over three million people worldwide—of every age, education, profession, religion, and background—have learned TM and enjoyed its benefits.

Transcendental meditators mentally repeat a mantra—a supposedly divine term that a TM teacher purportedly has chosen expressly for the enrollee. Officially, learning TM entails seven steps: (1) The introductory lecture, about 60 to 75 minutes long, imparts, according to the aforementioned brochure, “a vision of the possibilities” TM affords. This step and the following two are free prerequisites to hands-on learning, which costs \$1,000 for adults and \$600 for full-time students. (2) The preparatory lecture, also about 60 to 75 minutes long, focuses on the “mechanics” and origin of TM. (3) The personal interview, conducted by a “qualified” TM teacher, is available as an appendage to the second step and reportedly takes 15 minutes. The following four steps reportedly take 1½ to 2 hours each and must be completed on consecutive days. (4) According to one of the lecturers, personal (private) instruction begins with a short ceremony that includes Sanskrit singing, and enrollees must bring: a new, clean white handkerchief “to symbolize purification”; 2 or 3 sweet fruits “to symbolize sweetness and...growth”; and 6 to 12 freshly cut flowers “to symbolize blossoming.” During this stage, the enrollee receives a mantra. This step seems to be an initiation rite similar to a *puja*, a traditional Hindu worship ceremony involving flowers and mantras. (5) The first of three classes titled “Verification and Validation of Experiences” purportedly serves to verify “the correctness of the practice.” (6) The second class supposedly promotes “understanding the mechanics of stabilizing the benefits” of TM.

Dawn of a New Era in Health Care: Announcing the Opening of Maharishi Ayur Veda School

Celebrating Knowledge of Natural Law

Vedic Wisdom for Perfect Health and A Disease-Free Society

Short Courses for Everyone



His Holiness

Maharishi Mahesh Yogi

who introduced Transcendental Meditation 37 ago and brought enlightenment to millions of people in the world, is now introducing total knowledge of Natural Law for everyone to spontaneously think and act according to Natural law so that Natural Law is not violated by anyone, no one makes mistakes, and no one creates the ground for suffering.

Maharishi's Vedic Science and Technology, the science and technology of consciousness, develops full creative genius of everyone, promotes perfect health of the individual and collective health of the nation, and introduces automation in administration for stress-free problem-free management.

“Everyone must have this beautiful knowledge and these programs of prevention to maintain perfect health.”

—Maharishi

Maharishi Ayur Veda School offers the knowledge to create perfect health and a disease-free society through prevention-oriented health education.

Maharishi Ayur Veda School invites everyone — working people, students, retired people — to participate in its course and programs.

SPECIAL SHORT COURSES FOR THE WHOLE POPULATION

- **Self-Pulse Reading**—to detect physiological imbalances and rectify them through proper diet before disease arises
- **Good Health Through Prevention**
- **Yoga and Breathing Exercises**
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- **Reversal of Aging**
- **Retired Life in Bliss**
- **Transcendental Meditation**—scientifically validated technique to relieve stress and develop the full creative potential of mind and body
- **Transcendental Meditation Sidhi Program**—Yogic Flying for optimal brain functioning, bubbling bliss, and support of Natural Law in daily life
- **Human Physiology: The Expression of Veda and Vedic Literature**—The recent discovery of total Natural Law within

human physiology demonstrates the potential for a mistake-free life

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Eight one-week courses from mid-June to mid-August.

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Maharishi Ayur Veda School is prepared to create a disease-free New York. The challenge is—how soon? Just as soon as people respond. President Clinton expressed the need for immediate action:
“All of our efforts to strengthen the economy will fail unless we also take this year—not next year, not five years from now, but this year—bold steps to reform our health care system.” (from President Clinton's address to Congress, February 17, 1993)

Short Courses Available Now

Part of ad in the March 30, 1994, issue of *The New York Times*

(7) The third class deals with the development of alleged “higher states of consciousness” through TM.

The introductory lecture struck me as a low-budget infomercial. In the room where it took place, posters defined Maharishi Vedic University as “the university of consciousness...of pure and applied knowledge, the Ved” (i.e., the Vedas). A conspicuous poster in the front of the room, titled “Reversal of Ageing,” featured a list of more than a dozen alleged effects of

practicing TM, including mitigation of “behavioral rigidity” and heightening of creativity, abstract reasoning, and intelligence. Near this poster stood a framed photo of the maharishi. There were three attendees. The lecturers—Janet Hoffman and Alexander Grzesik—were soft-spoken and sat in armchairs on a low, carpeted platform.

Hoffman, a TM teacher, stated: “The technique does not involve any kind of philosophy or religion.... If you have religious beliefs, TM is not going to interfere with them.... It... works because it’s—it’s based on laws of nature....” She portrayed TM as an applied science and claimed that the practice engenders a particularly “intense state of wakefulness... clarity, uh, liveliness of mind, consciousness... which transcends that surface level of mind....”

Grzesik expounded:

During TM—even though you’re getting deep, profound rest—you’re in a state of wakeful awareness. You know what’s going on; you’re not in a trance.... But the deep rest that you gain during transcendental meditation is such that it makes—it makes your life more productive; it makes your life more dynamic and successful, because your thoughts are much more clearer.... You get the total... picture of—of life. All your intelligence is open to you.... TM eliminates stress in the mind and the body.... In fact, it makes the body/mind relationship—they both work together—it makes it more, uh, uh, more intelligent. What it does is, it makes our intelligence more intelligent, and—and it also increases energy and improves efficiency.

After Grzesik completed her spiel, Hoffman said: “[T]he individual and society are harmonious if they’re functioning according to natural law.” She thereupon described the so-called Maharishi Effect. I asked her: “What is the relationship between TM and such methods as the *yagya*?” Hoffman claimed: “There is no relationship.” However, she added that *yagyas* boost TM. She stated: “A *yagya* is a performance that works on subtle levels of nature, influencing the... functioning of laws of nature.” Hoffman likened *yagyas* to overseas phone calls and to traveling by car or by air.

Research outside the TM community has cast doubt on the therapeutic usefulness of TM and other forms of meditation.

The Mind-Field of TM

During my second visit to the AyurVeda School, on June 2, I noticed a cryptic message on a blackboard that stood on a tripod in the waiting room: “PERSONAL CHECKING—PLEASE BE SEATED AND WAIT FOR THE CHECKER.” There I paged through two large loose-leaf collections of Maharishi-related articles, press clippings, letters from governmental officials, and promotional literature. An article published in 50 newspapers over two successive months in 1987 was titled: “Old is sometimes new again in medicine.”

Richard LaMarita gave the preparatory lecture. There were six attendees. LaMarita stated:

There’s a very strong theory that... simply states that our mind does not reside in our head.... This type of finding and this type of idea that we know is revolutionary—... put it into the context of what the world was like a hundred years ago.... [W]e’re not at the end of knowledge... and we have a lot to learn.... And this [i.e., TM] could be something that’s very much on the cutting edge and could be something commonplace in the next 25 years, if it takes that long.

He claimed that, during TM, practitioners attain a state of “unbounded” and “pure” mind. “[W]hat we’re doing, literally,” he said, “is taking the mind and drawing it back to its source.” He described the supposed accomplishment of this as “the secret of successful activity.” He further stated:

TM is a natural technique. It’s a natural technique simply because it uses the nature of the mind, and that is it. It doesn’t go against the nature of the mind....

This field within the mind—your consciousness—... is a field of creativity and intelligence and energy.... So, if the mind was given the opportunity to go in that direction, it would naturally go there.... In TM... we set up a very simple initial condition. Once you set up that condition, you just let go....

There are many techniques of meditation around, but TM is unique. It’s unique because it’s simple.

Apparently, the “simple initial condition” to which LaMarita referred centers on the mantra, which he described as a sound that does not have a meaning but has a “known effect.”

I asked LaMarita if the source of the mind is the brain. “No,” he answered. “That’s the hardware of the cosmic computer.” Then I asked him how instructors choose a mantra for an enrollee. He responded: “There are sets of mantras.... I’m not going to give you the details.... It’s like a scientific procedure, almost.” The enrollment form described TM as “the practical aspect of the Science of Creative Intelligence.” LaMarita told us that the “nonrefundable fee” of \$1,000 “includes a lifetime of follow-up” and is “really like a membership fee.”

Here, There and Everywhere

“The control switch for the body is in the mind,” declared author Deepak Chopra, M.D., on Phil Donahue’s talk show several years ago. Chopra is ayurveda’s foremost luminary in the U.S. He was born and raised and attended medical school in India. After graduation, he moved to the United States and completed residencies in internal medicine and endocrinology. He became a disciple of Maharishi Mahesh Yogi in 1985 and remained so until mid-1993. In a letter to leaders in the TM movement, dated July 16, 1993, the Maharishi National Council of the Age of Enlightenment confirmed Chopra’s departure and instructed TM councilors to desist from promoting Chopra or his works. The letter stated: “This policy is extremely important for the purity of the teaching.”

Upon leaving the movement, Chopra affiliated himself with Sharp HealthCare, a large chain of hospitals in San Diego, and helped to organize the Sharp Institute for Human Potential and Mind Body Medicine. In June, I received a mailing from the

An Invitation to Create Health

Learn How To Maximize Your Health and Happiness by following Steps 1, 2, and 3

Step One:

Fill out the Body Type Questionnaire to the right. It will help you learn some of the basic characteristics of your body type.

After you answer each of the questions, add the total number of answers under Vata, Pitta, and Kapha, respectively. The column(s) with the highest total(s) indicate which of these fundamental principles of nature, Vata, Pitta, and Kapha, are dominant in your psychophysiology. This is a preliminary indication; for a comprehensive evaluation, please consult a physician trained in Maharishi Ayur-Veda.

Step Two:

Use Maharishi Ayur-Veda Teas, Seasonings, and Aroma Oils to help restore the proper balance to your diet and physiology.

For a steadying, settling influence use Vata Tea, Seasoning, and Aroma Oil. These are also recommended for Vata body types and during Vata season, generally November through February, or whenever the weather is cold and dry.

To cool and soothe the physiology and emotions use Pitta Tea, Seasoning and Aroma Oil. These are also recommended for Pitta body types, and during Pitta season, generally July through October, or whenever the weather is hot.

For a warming, energizing influence use Kapha Tea, Seasoning, and Aroma Oil. These are also recommended for Kapha body types, and during Kapha season, generally March through June, or whenever the weather is cold and wet.

Step Three:

Learn more about Maharishi Ayur-Veda, your individual body type, and which foods are best for your type.

There are books, tapes, seminars, and courses available on Maharishi Ayur-Veda. The "Fundamentals of Maharishi Ayur-Veda" is a comprehensive video tape which features leading physicians discussing body types, daily routines, diet, exercise, stress management, oil massage, and much more. (\$24.95)

These educational materials are not intended to replace standard medical care. If you have any medical questions, please contact your physician.

Maharishi Ayur-Veda Products are available from:

1•800•255•8332

Extension 16

Instructions:

Place an X by the one answer which describes you best, even if 2 or 3 answers seem to apply.

	VATA	PITTA	KAPHA
AMOUNT OF HAIR	___ average	___ thinning	___ thick
TYPE OF HAIR	___ dry	___ medium	___ oily
COLOR OF HAIR	___ light brown	___ red/auburn	___ dark brown/black
SKIN	___ dry, rough	___ soft, med. oily	___ oily, moist
COMPLEXION	___ darker	___ pink to red	___ pale, white
EYES	___ small	___ medium	___ large
WHITES OF THE EYES	___ blue or brown	___ yellow or red	___ white and glossy
SIZE OF TEETH	___ very large or very small	___ small to medium	___ medium to large
TEETH	___ shaded	___ yellowish	___ pearl white
MENTAL ACTIVITY	___ quick mind, restless	___ sharp intellect, aggressive	___ calm, steady, stable
MEMORY	___ short term is best	___ good general memory	___ long term is best
DREAMS	___ fearful, flying, running, jumping	___ anger, fiery, violent	___ water, clouds, relationships, romance
WEATHER	___ aversion to cold	___ aversion to hot	___ aversion to damp, cool
SLEEP	___ interrupted, light	___ sound, medium length	___ sound, heavy, long
REACT TO STRESS	___ excite very quickly	___ anger easily, quick temper	___ slow to get irritated
RESTING PULSE RATE (beats/min)			
WOMEN	___ 80-100	___ 70-80	___ 60-70
MEN	___ 70-90	___ 60-70	___ 50-60
BODY SIZE	___ small frame	___ medium frame	___ large frame
WEIGHT	___ thin, hard to gain	___ medium weight	___ heavy, easy to gain
ENDURANCE	___ poor	___ good	___ excellent
STRENGTH	___ poor	___ good	___ excellent
HUNGER	___ irregular	___ sharp, needs food	___ can easily miss meals
FOOD & DRINK	___ prefer warm	___ prefer cold	___ prefer dry & warm
EAT	___ quickly	___ med. speed	___ slowly
FINANCIAL	___ doesn't save, spends quickly	___ saves but big spender	___ saves regularly, accumulates wealth
SEX DRIVE	___ variable, irregular	___ moderate	___ strong
ELIMINATION	___ dry, hard, constipation	___ many, soft to normal	___ heavy, slow, thick regular
WALK	___ fast, quickly	___ average	___ slow & steady
VOICE	___ high pitch, fast	___ medium pitch, clear	___ low pitch, deep resonating
MOODS	___ changes quickly	___ slowly changing	___ steady, non-changing

TOTALS: Vata ___ Pitta ___ Kapha ___
(See Step One for further instructions.)

institute offering a program titled "Training in Mind Body Medicine and Ayurveda." This program, scheduled for August 31 to September 4, is open to "health professionals"—e.g., acupuncturists and "body workers"—and laypersons alike.

A statement from his 1992 audiotape "Escaping the Prison of the Intellect" exemplifies Chopra's metaphysics: "The truth is, I'm here, but I am also everywhere else; that you're there, but you're also here, because here is there, and there is everywhere, and, of course, everywhere is nowhere, specifically." The audiotape is subtitled: "A Journey from Here to Here." But this is getting us nowhere, so to speak. (I, for one, would think twice before asking Chopra for directions.) On another audiotape, "Sacred Verses, Healing Sounds" (1994), Chopra contends that "consciousness... is the maker of reality," cites Genesis, and asserts: "Our essential state as human beings is that we are unconditioned spirit.... [O]ut of the spirit emerges the mind."

On the evening of January 24, Chopra appeared on the TV Food Network's "Getting Healthy," a series hosted by Gayle Gardner (formerly of NBC Sports) and featuring "nutrition expert" Stephanie Beling, M.D. Chopra stated:

[N]ow the prevailing scientific wisdom says that the average human potential could be a hundred and twenty [years of age]. But why are we setting that limitation? Just because we've set limitations in the past. And we've always transcended them.... [T]he moment you start setting up certain ideas that you hold to be true in your consciousness, they become true for you....

It's part of our cultural indoctrination, literally. We become victims... [of "the collective mind"]....

I think... Einstein's equation [$E = mc^2$] fell short, with all due respects; because Einstein said energy and matter are inseparably one. We have to include a third ingredient, that he did not address: that energy, matter, and *information* are inseparably one—because every field of energy is simultaneously a field of information.... Matter and energy are subject to decay, dissipation, and entropy; but information keeps increasing....

We are in that phase of our evolution where we're becoming aware that we are that privileged species on earth through which the universe has chosen to become self-conscious.

Chopra held Dr. Beling's wrist for about ten seconds and pronounced her "a *vata* body type"—fast and, "under normal circumstances," enthusiastic, vivacious, and "fun to be with." He held Gardner's wrist for about six seconds and pronounced her "a combination of *kapha* and *pitta*"—passionate, articulate, courageous, chivalrous, imaginative, and "very visual." (Utilizing "pulse diagnosis" on *Donahue*, Chopra had decided that the host was romantic and charming, quick-tempered when under stress, and prone to "something like an ulcer" when under "a lot of stress.")

A caller asked Chopra if he "had any specific diet that M.S. [multiple sclerosis] patients should be following." He responded: "If I were seeing you, I'd do exactly the same thing that I did with the two young ladies here... find out your body type and then give you an appropriate diet based on your body type, irrespective of what disease you had."

He described his nutritional philosophy:

You know, in nature, the animals in the forest don't have the vaguest notion what the USDA is recommending in 1994.... They follow inner cues, and we have the same abilities. In fact, we have better abilities....

[Y]ou have the same energy inside you that the universe has, and that's called *prana*. And the concept exists that food that is *alive* has more *prana* than food that is dead, so to speak. So anything that comes in a can or has a label would probably have very little *prana* inside it. But anything that's fresh and is just out there from nature without having gone through the process of refrigeration and cold storage and transportation—You know, that's one of the things that has not been recognized by Western science: that there is an energy component and a *vitality* to food that you can't sort of quantify in terms of calories and protein and carbohydrate. And yet it may be the most important thing.

Chopra termed food irradiation "frightening"; suggested that human beings are essentially spiritual beings who occasionally have "human experiences"; claimed that "the spirit" is a "real force" reachable by meditation; and asserted that "cynical mistrust" is "one of the risk factors for accelerated aging." During an interview for a *Forbes* magazine profile (April 11, 1994), Chopra, responding to skeptical questions, restated the claim about cynical mistrust.

THE BOTTOM LINE

Many people, even some health professionals, advocate creating an atmosphere of mutual respect and "openness" in regard to alternative healthcare. I favor reserving "respect" for methods with adequate experimental evidence of safety and efficacy. I also favor restraining openness—that is, open-mindedness—lest it slip into simple-mindedness.

One should not conclusively judge a health-related method solely on the basis of theory, context, source, and the credibility or implausibility of claims for the method.

However, when scientific findings are lacking or conflicting, theory alone is at least a fair guide to a method's worthiness as a healthcare *candidate*. Supernaturalistic theories, such as those of ayurveda, should arouse caution. Far too often, they inspire the desperate, the misguided, the delusional, and the greedy.

"Alternativists" ought to call a spade a spade. Many are pushing religion but calling it medicine, healthcare, healing, or therapy. Or, worse, freedom.

FORUM

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The Three Faces of Medical Unreason

Jack Raso

In 1992, the Office for the Study of Unconventional Medical Practices of the National Institutes of Health (NIH) materialized, the result of an October 1991 congressional mandate. It is now called the Office of Alternative Medicine (OAM). One of its functions is to allocate grants for research on alternative methods. According to a summer 1994 issue of *The Cancer Letter*, Joseph J. Jacobs, M.D., M.B.A., a Yale-educated pediatrician, decided to quit directorship of the OAM and spoke of "a conflict with conscience." Among other things, Jacobs had met with opposition to his approval of a prospective candidate to the OAM's advisory committee—a member of the American Cancer Society's Committee on Questionable Methods of Cancer Management. In an interview in the September 1994 issue of *Omni*, Jacobs categorized as alternative medicine "those things not taken seriously by the medical profession." He suggested that he had been "born into" alternative medicine because his mother, a Mohawk, had administered herbal remedies to him, practiced Mohawk and Christian prayers, and taken him to faith healing sessions. Jacobs told interviewer Doug Stewart:

Demand [for unproven treatments] seems to be coming from people looking for solutions to everyday problems. Those people want results right away. The tremendous public demand for information about alternative therapies is partly a desire for quick fixes. People want pills to cure the common cold and vitamin supplements to prevent cancer and coronary artery disease while avoiding doing exercise and following ten-percent fat diets. Those are the wrong reasons for being interested, but add to the demand nonetheless.

In the words of an article in the June 1994 issue of the alternativist newsletter *Health Waves*, the OAM has been "torn between conventional NIH methods of research & less rigorous testing used by many alternative practitioners." The OAM's 1993 budget was only \$2 million, its 1994 budget \$3.5 million. Just the same, should taxpayers foot the cost of testing methods that lack a sound theoretical basis?

Synonyms for unscientific healthcare include: alternative healing, alternative health, alternative health care, alternative therapeutics, complementary health care, complementary medicine, fringe medicine, holistic

healing, holistic health, holistic (or wholistic) medicine, innovative medicine, New Age medicine, new medicine, planet medicine, unconventional medicine, and unconventional therapy. Anthropologist Richard Grossinger, Ph.D., in *Planet Medicine* (1987), described the book's title as an umbrella term for all forms of medicine, "prehistoric and contemporary," unscientific and scientific. The usefulness of such a definition is doubtful. In a 1992 issue of its newsletter, ANTHA—the Anthroposophical Therapy & Hygiene Association—apparently equated the neologism *extentional* with *alternative*, *complementary*, and *unconventional*. In a 1993 issue, ANTHA apparently equated the term "extended therapeutics" with "complementary medicine." Loose nomenclature is the law of the land of unscientific healthcare.

In 1991, I began cataloging currently publicized health-related systems and methods with implicit or overt supernatural premises. (I outlined six basic supernaturalistic theories important to alternative healthcare in the previous issue of *Nutrition Forum*.) According to supernaturalism, there are quasi-entities outside the universe (natural world) that at least occasionally affect courses of events. My list contains well over three hundred items. Some items on the list—e.g., acupuncture, ayurveda, fundamentalist chiropractic, homeopathy, and naturopathy—are standbys. Others—e.g., macrobiotics, shiatsu, and therapeutic touch—are more or less prominent. But many are unfamiliar, including actualism, acuscope therapy, alchemical hypnotherapy, *Bindegewebsmassage*, concept-therapy®, cosmic vibrational healing, equestrian transformational expression, eutony, jin shin, kum nye, mahikari, nutripathy, the Orionic healing system, pigeon remedy, pranic healing, sotai, spagyrics, and the Zen Alexander technique. Others are neither well known nor quite unfamiliar, including applied kinesiology, aromatherapy, Bach flower therapy, dreamwork, inner child therapy, iridology, Jungian psychology, and reflexology. More than a hundred of these systems, "modalities," and pseudodiagnostic methods have alternate names. For example, actualism is also called agni yoga, fire yoga, and lightwork; rebirthing is also called conscious breathing, conscious connected breathing, circular breathing, free breathing, and vivation; and rolfiing® is also called structural integration and structural processing.

Of course, some alternative approaches are not even quasi-supernaturalistic—for example, the Bates method, chelation therapy (also called EDTA chelation therapy), clinical ecology, colon hydrotherapy (also called colonic irrigation, colon health care, and colon therapy), cytotoxic testing, the Feingold diet, Hoxsey therapy (Hoxsey treatment), live-cell analysis, orthomolecular medicine, and ozone therapy. Supernaturalism is therefore not the bedrock of alternative healthcare. What lies “below”?

The Abyss

Unscientific empiricism and universal skepticism compose the theoretical core of alternative healthcare. Proponents do not acknowledge this core, which is less a foundation than an abyss. Moderate empiricism, in the form of meticulous observation, is an element of the scientific method. So is qualified, constructive skepticism, in the form of methodical doubt leading to criticism. However, both hardcore empiricism and total skepticism are akin to mysticism—the stuff of Hinduism and ayurveda.

Unscientific empiricism esteems knowledge derived from practical activity—trial and error—and devalues knowledge gained by analysis and the systematic organization of information. Empirics are guided primarily by experience rather than by systematically organized knowledge. A diehard empiric might assert that one has experienced milking a cow if one has merely had a dream or hallucination in which one has done so—even if the dreamer or hallucinator has never spent a waking moment near so much as a cow's carcass! In the January/February 1994 issue of *Nutrition Forum*, I described an “alternative nutrition” conference at which an acupuncturist lectured on traditional Chinese medicine and led more than three hundred and thirty people in meditation. Most of the attendees were legitimate health professionals, and The American Dietetic Association had approved the program for continuing education credit. The acupuncturist said she wanted us to become “experientially involved” in Chinese herbalism. Accordingly, she asked us to visualize moving fire and “cooling energy from the moon” around our bodies, and to imagine placing various “warming herbs” in the fire and “cooling herbs” in the lunar energy. I experienced only boredom. (A profile in the January 28, 1994, issue of *New York Newsday* stated that this acupuncturist had been “diagnosed with ‘incurable depression’ on three separate occasions.”)

A television commercial for an over-the-counter analgesic epitomizes the mindset of empirics. In it, a confident-sounding man says of the product: “I use it. That's how I know it's better. I use it.”

Medical empirics substitute experience for scientific knowledge in selecting or improvising treatment.

They approve the formulation of hypotheses and the assiduous, concerted, systematic testing of them only when the results of theorizing and testing appear to support what they “know” from personal observation. Methods that smack of unbridled empiricism include creative visualization, imagineering, interactive guided imagerySM, Pealeism, Silva mind control, and the Simonton method. Terms for identical or similar methods include: visualization, visualization therapy, guided visualization, imagery, guided imagery, guided fantasy, mental imagery, active imagination, imaging, creative imaging, dynamic imaging, positive imaging, positive thinking, positive visualization, directed day-dream, directed waking dream, waking dream therapy, led meditation, inner guide meditation, initiated symbol projection, imaginal medicine, and pathworking.

On the August 8, 1994, edition of NBC's “Sunday Today in New York,” a physician-author stated: “Outcome is the measure of success, not whether we can explain it or not.” The word “outcome” means “result” and connotes finality. However, when believers testify to the alleged beneficialness of this or that alternative method, their opinions often proceed from a combination of faith in the method—and/or practitioner—and a sense of well-being. This combination can mask pathology. The “cure” may be transitory or even backfire.

Universal skepticism, also called systematic or ideological skepticism, is more insidious and elusive than empiricism. In its extreme form, it holds that humans cannot know anything—that truth and falsity are indistinguishable. This is absurd because it entails that humans cannot know whether the claim itself is true or false. In its other main form, universal skepticism holds that humans can never be *certain* about anything. This doctrine is likewise absurd because it casts doubt upon itself. Healthy skepticism—the tendency to disbelieve—is often a commendable impetus to learning (represented by the maxim “Look before you leap”). The danger of extreme skepticism lies in the belief that attempts to verify claims or to justify actions are futile.

The universal skeptics of alternative healthcare at least imply: (1) that nothing yields knowledge, or that everything is open to doubt or interpretation, and (2) that, therefore, practitioner and patient should discuss what feels right and proceed accordingly. Wayward empiricism and universal skepticism open the door to all manner of voodooism, hocus-pocus, mumbo-jumbo, and whimsicality.

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Carnival of Souls

It is a principle of physics that matter and energy are interconvertible, equivalent, two forms of the same thing. Einstein formulated this axiom as “ $E = mc^2$.” Yet vitalism—alternative healthcare’s paramount theory—hinges on the existence of a nonmaterial, divine, or personalized form of energy. In reality, energy is an impersonal quality of matter that enables work. Nonmaterial things “exist” only as thoughts and are not measurable. Generic terms for the pseudo-energy of alternative healthcare include: vital force (*force vitale*), vital energy, inner vital energy, vital cosmic force, vital energy force, vital element, vital principle, vital spirit, vital life spirit, vital magnetism, vitalistic principle, life force, life power, universal life force, cosmic life force, vital life force, vital life force energy, life energy, universal life energy, cosmic life energy, universal life force energy, internal energy, nerve force, nerve energy, personal energy, subtle energy, vitality energy, energy of being, the force of life, and *élan vital*. In addition to these synonyms, there are many sectarian terms for the same idea, including: animal magnetism (mesmerism), *chi* or *Qi* (ancient Chinese tradition), etheronic force (Edgar Cayce), innate intelligence or Innate (Daniel David Palmer, the founder of chiropractic), *ki* (Japanese tradition, Shinto), mana (ancient Hawaiian tradition, Huna), orgone (orgonomy), *prana* (Hinduism), *reiki* (Usui system of natural healing), *vis medicatrix naturae* (naturopathy), and soul or spirit (Christianity).

Other terms for alleged forms of energy relevant to alternative healthcare include: bio-current, bioenergy, biomagnetic waves, bioplasma (bioplasmic energy or psychotronic energy), the ECK, entelechy, essence, kundalini (Shakti), life-fields (L-fields, electrodynamic fields, or bioelectric fields), MariEL, M-fields, morphogenic fields (morphogenetic fields, morphic fields, or morphic resonance), odic force (od or odyle), paraelectricity, psi-fields, psi plasma, psychic energy (psychic force), *seiki*, tachyon energy (tachyon field energy), *vis formativa*, and zero-point energy (virtual energy).

Field of Dreams

Thus, alternative healthcare recognizes alleged forms of energy that are alien to physics. Proponents ensoul the mind and secularize the soul, giving it a scientific face. They claim that soul-like or godly “energy” is adaptable to the prevention, diagnosis, and treatment of disease, the improvement of health and physical fitness, and the prolongation of life. And they say that such “energy” and the physical phase of

the human organism interact through nonphysical entities. For example, acupuncture is a millennia-old practice based on the assumption that *chi* (*qi*) and the physical body interact through an elaborate system of channels or pathways inside the body. Meridians—longitudinal lines on the surface of the body—represent these “pathways.” This word “meridians” also refers to the alleged pathways themselves. Acupuncture points—also called acupoints, loci, and *tsubos*—are alleged points of communication between external parts of the body and internal organ-like entities. Acupoints supposedly exist throughout the skin, but some do not lie along the meridians and others lack a specific location. Furthermore, although the classic number of acupoints is 365 (correlated with the number of days in a year), some proponents maintain that the number exceeds two thousand. Acupuncturists insert needles at select points, then rotate the needles or use them to conduct a weak electric current. The mainland Chinese invented “acupuncture anesthesia” (or “acupuncture analgesia”) in 1958. Practitioners of another Chinese method, medical Qigong, dispense with needles and allegedly influence their patients’ *chi* directly.

Chakras—transformative vortices or “energy centers”—supposedly enable interaction between the body and *prana*, which is the Hindu equivalent of *chi*. They are analogous to the “energy pathways” of acupuncture rather than to acupoints. Although hypothetically there are only five to seven major “body chakras,” there is no consensus on the total number; yogis posit hundreds of minor chakras. Proponents usually portray chakras as spanning the body from the head to the base of the spine, but there is really no consensus on their location, nor on their alleged functions.

Occultists maintain that “subtle energy” envelops the human body. This “energy” supposedly constitutes several “subtle bodies”—e.g., a “life-body,” a “mortal soul,” and a soul—or an entity, sometimes layered, whose appellations include: astral body, aura, aureole, auric body, auric field, bioenergy field, biofield, bioplasmic body, bioplasmic force field, doppelgänger, dream body, energy body, etheric body, etheric double, human atmosphere, human energy field, human rainbow, sidereal body, spiritual body, star body, subtle body, subtle organizing energy field, and vital body. Other such “bodies” include the “mental body” and the “causal body.”

Feelings

For the moment, let’s forget that proponents have not stated what particles compose the “vital force.” (Light and other forms of electromagnetic radiation, for example, consist of photons.)

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Is the "vital force" detectable? The answer depends on what constitutes detection. In *The Energy Within* (1992), martial artist Richard M. Chin, M.D., O.M.D. ("doctor of oriental medicine") asserts that one can "actually feel" the alleged force if one suspends disbelief "long enough to begin the work to find it." Apparently, the "right" frame of mind makes "perception" of the so-called vital force unavoidable. Purported signs of the "vital force" or the like include the following.

- chills
- the comfort, reassurance, warmth, or rejection one feels upon being touched by another person
- extreme happiness
- flow (apparent ease or effortlessness of performance)
- sudden alertness, clarity, or vigor
- thrills

In February 1994, I visited Zili Xu, a Qigong diplomate born and raised in mainland China. Qigong (*chee-gung*, "energy work") is an ancient Chinese system of "therapy," "prevention," and "life prolongation" that involves patterned breathing, posture, stylized movements, visualization, and contemplation. I asked Zili if he could emit *chi* from his hand. He claimed that he could but that the practice was debilitating. I told him I did not believe that *chi* exists. A moment later, he offered to demonstrate the purported phenomenon. He indicated that I should extend my forearm perpendicularly from my trunk with the palm of my hand open. For a few minutes, he variously positioned and moved one or both of his hands around my open palm. He touched my hand only once or twice, apparently to adjust it. He asked me several times if I felt anything and I said no. After the "demonstration," I stated that I had had a slight sensation in my fingers but added that it was attributable to my keeping my hand and arm steady. He stated that he had relieved back pain with this form of Qigong but said it was very important for the patient to believe in the method.

How do vitalistic "healers" judge the efficacy of their "ministrations"? In *Spiritual Aspects of the Healing Arts* (1985)—a "holistic healing" anthology compiled by Dora Kunz, the clairvoyant co-developer of therapeutic touch—psychiatrist Laurence J. Bendit, M.D., wrote:

Even so dread a state as the schizophrenic breakdown is now seen as at least potentially therapeutic. As the child with measles develops immunity to that disease, so the schizophrenic may so change inside that he emerges from the ordeal not a wreck but a new man, more integrated to his own deeper nature, more spiritualized.

And this applies also to death: physical death may result from the release of the healing forces inside a patient. It is not then a tragedy but a triumph for the healing powers.

If acute illness and death are good signs, obviously vitalistic "healers" can't go wrong!

The Tangled Web of Healthcare Exotica

Below I describe supernaturalistic methods I became aware of after I finished my second book, *"Alternative" Healthcare: A Comprehensive Guide* (1994). All have been promoted within the last five years. Often, it is difficult or impossible to determine where one method ends and another begins. The small-fry and mom-and-pop methods of the alternative-medicine marketplace vastly outnumber the showstoppers. To brush them off is a folly, for their collective effect is widespread and formidable.

7 keys meditation program: System based on seven so-called spiritual keys "revealed" to David Wheeler. The "Keys" purportedly can "unlock" one's maximum potential for "transformation" and healing. During "Initiation," students receive the "Keys" and allegedly access the "Universal Energy" or "Divine Energy" inside themselves. Supposedly, this "energy" is transmittable.

Acu-point therapy: Mode of counseling psychology based partly on acupuncture theory and promoted by Mitchell J. Rabin, M.A.

Advanced energy healing: Alleged "journey" into "higher realms" of understanding whereby one supposedly connects with one's "divine self." Taught by Robert T. Jaffe, M.D., the method involves meditation and, for "physical healing," the awareness release technique®.

Agartha personal life-balancing program (Agartha program): 35-day audiotape program for reducing stress and promoting "complete health." Each of the seven "harmonic" tapes combines sounds purportedly "developed" to alter "energy currents" within specific chakras. The program's creator, author Meredith Lady Young, allegedly has a "non-physical" teacher called "Mentor." In the booklet titled "The Agartha Program I Use Guide®: A Personal Life Balancing Program" (Stillpoint Publishing, 1986), Young states the premise of her program: "All physical matter is really a composite of light waves and sound frequencies." The booklet claims: "The sound vibrations produced by the music gently massage the energy center or 'chakra,' thereby reducing distress and improving the flow of life force through the body. THE RESULTING BENEFIT IS TO ALLOW YOU TO USE YOUR FULL POTENTIAL IN EVERY ASPECT OF YOUR LIFE."

Alpha calm therapy: Combination of guided imagery and Ericksonian hypnotherapy (a "non-directive" form of hypnotism).

Amplified energy therapy: Form of "energy healing" promoted by Richard Gordon. Its premise is that people can learn to maneuver their "life-force energy" toward following the body's "innate intelligence."

BioEssence therapy: System developed by Paul Pitchford. It includes BioEssence bodywork (based on Zen shiatsu), BioEssence "release work" (which involves stylized breathing), diet, herbalism, Qigong, tai chi, and traditional Chinese "diagnostic" methods.

Chakra and cellular memory healing: System promoted by author and "reiki master" Dr. Ojela Frank. It involves affirmations, "conscious breathing" (probably rebirthing), counseling, "emotional healing," "energy self-assessment," and guided imagery, and occasionally "regression work." "Regression work" probably refers to past-life therapy (also called regression therapy), whose crux is past-life regression.

Chinese dietotherapy: Alleged preventive and therapeutic system that involves: (1) prescribing "medicinal foods" and mixtures of foods and drugs, and (2) prescribing intake of particular foods. Supposedly, the curative effect of a food or food-drug mixture depends on its "nature" and "flavor." The "natures" are: cold, hot, warm, and cool. The "flavors" are: salty, sour, sweet, bitter, and pungent. Practitioners purportedly seek to neutralize illness by prescribing foods and food-drug mixtures whose "nature" and "flavor" antagonize the "nature" and "flavor" of the disease.

Connective tissue therapy (CTT): "Spiritual" mode of bodywork developed by Paul and Nancy Marcus. It allegedly helps to free "stagnant energy." ("Bodywork" is a generic term for manual or physical-exercise related "healing.")

Contact reflex analysisSM (CRA): Variant of applied kinesiology (AK) cofounded by chiropractor Dick A. Versendaal (of Holland, Michigan), who is its chief proponent. According to CRA theory, the surface of the human body has about seventy-five "reflex" points that serve as windows to numerous conditions. The practitioner pulls downward on the patient's outstretched arm while he keeps part of his hand on a "reflex" point. Versendaal claims that the back of the hand is electronegative, the palm is positive, and the fingers are neutral. Arm weakness supposedly indicates an incipient or full-blown health problem corresponding to the "reflex" point. Practitioners prescribe nutritional supplements for the alleged problems they thus "discover." A massage therapist's ad in the May/June 1994 issue of *Newlife* claimed that CRA can help most health problems, including cardiac problems and viral infections. AK is an elaborate system of pseudodiagnosis and treatment centering on "muscle testing." Detroit chiropractor George J. Goodheart, Jr., introduced applied kinesiology as a diagnostic method in 1964. He theorized that muscle groups share "energy pathways" with internal organs and that, therefore, every organ dysfunction is discoverable in a related muscle. Testing muscles for relative strength and tone supposedly taps the body's "innate intelligence" and enables practitioners to detect specific dysfunctions.

Core zero balancing (zero balancing): Variant of acupressure that posits "bone energy," chakras, and an "energy body." "Acupressure" refers to any treatment involving the surface stimulation of acupuncture points either with the hands alone or with hand-held tools. The word may also refer specifically to shiatsu (see "Whole health shiatsu," below).

Creative concentrationTM: Program involving "energy work" and meditation promoted by Miriam Belov, M.A.

Crystal therapeuticsSM: System based on the books *Crystal Therapeutics* and *Advanced Crystal Therapeutics*, both by Ojela Frank (see "Chakra and cellular memory healing," above). It involves "energy assessment," crystal healing, energy balancing, guided imagery, and counseling. (The November/December 1989 issue of *Newlife* carried an ad for a seven-level training program in crystal therapeutics. In the ad, the title "Rev." preceded Frank's name.)

Daoyin: Reputed prototype of Qigong. An alleged means of physical fitness, it involves formal breathing, dozens of postures, and, supposedly, conscious maneuvering of *chi* inside oneself.

Divine will healing: Method promoted by Ram Smith, a staff member at the Poconos retreat of the Ananda Church of Self-Realization. It derives from the teachings of Paramahansa Yogananda (1893-1952). Its main postulate is that people can transmit or project "divine healing light" by aligning their will with "divine will."

Dr. Lynch's holistic self-health program: Three-month path to "total well-being" developed by chiropractor James P.B. Lynch, author of the book of the same name. The cornerstone of the program and lifestyle is a teaching tool Lynch calls the "holistic triangle," which consists of: (1) a mental/spiritual "base" of education, motivation, and self-love; (2) a physical "side," which focuses on exercise and physical treatment; and (3) a chemical "side," which involves "detoxification" ("cleansing") through diet. Lynch postulates that everyone possesses "innate powers" that are usable for self-healing. A flyer I received in August 1994 from Lynch's office includes acupressure and "chiropractic adjustments" in a list titled "Physical," and homeopathy and macrobiotics in a list titled "Chemical." It states: "Love is the most powerful healing force!" In an Old Testament vein (David versus Goliath), it depicts chiropractors, faith healers, the health food industry, naturopaths, and "nutritionalists" as loving, God-trusting wielders of truth.

Ecstasy breathing[®]: Process created by Valnn Dayne involving music and breath regeneration[®], a variant of rebirthing. Its alleged purpose is "reconnection" with a "Power of Life" that is greater than oneself. Rebirthing is a mode of bodywork in which practitioners induce clients to hyperventilate and encourage them to reenact the birth process. It is the crux of primal therapy—the subject of the 1970 book *The Primal Scream*.

Etheric touch: Variant of contact healing (the laying on of hands) and chakra healing expounded by hypnotist Ted Andrews in *The Healer's Manual: A Beginner's Guide to Vibrational Therapies* (1993). Its basic premise is that, through the hands, humans can sense "energy imbalances" and project "vibrations" (augmentable with "divine force") that boost self-healing. The method does not entail physical contact.

Feng shui (pronounced "foong shway" or "fung schway"): Ancient Chinese art of situating or orienting material structures and towns. Its purported objective is to "rebalance" and unblock "stagnant" *chi*. This allegedly enables stability of health.

Five rites of rejuvenation: Set of Tibetan exercises that allegedly increases the flow of "vital energy" and enables tapping the "Fountain of Youth."

Going Home™: Derivative of Hemi-Sync® introduced in 1994 by The Monroe Institute, in Virginia. The institute's introductory postcard stated that this 12-audiotope system offers "extraordinary opportunities" to people who want to overcome their fear of death. Hemi-Sync is an audiotape system that allegedly can control pain, increase strength, lower blood pressure, reduce appetite, weaken addictive behavior, hasten recovery from illness or surgery, enhance recovery of speech and motor skills after a stroke, and control the metabolism of food by either maximizing or minimizing "the caloric value retained." A 1993 institute bulletin stated that Hemi-Sync 2000—an "intensive," residential form—involves "training in manipulation of subtle energy fields that directly effect [sic] the physical body." (My advice is: stay home.)

Heartwood massage: "Holistic" system promoted by the Heartwood Institute, Ltd., in Garberville, California. It involves Swedish massage, hypnotherapy, and polarity energy balancing. According to "polarity" theory, the top and right side of the body have a positive charge, and the feet and left side have a negative charge. Thus, practitioners place their right hand (+) on "negatively charged" parts of the client's body, and their left hand (-) on "positively charged" parts.

Herbal crystallization analysis (HCA, herbal identification, herbal tracer test): Pseudodiagnostic method developed by George Benner, a "Master Herbologist." Apparently, Benner's primary inspiration was a method of botanical identification developed by occultist Rudolf Steiner in the 1920s. Steiner's method involved crystallizing the sap of botanical specimens with a solution of copper sulfate. The result was a crystalline fingerprint of the herb. Benner similarly processed saliva. He decided that resultant salivary configurations correlated with the configurations of folkloric botanical prescriptions for the donors' health problems. The number of specimens of a single herb that match a saliva specimen is allegedly a barometer of the donor's need for that herb: the more matches, the greater the need.

Infantile *tuina* therapy (infantile *tuina*): Adaptation of *tui na* (literally "push" and "grab," respectively) to children under or around age five. *Tui na*, also called *tuina* therapy, is an ancient Chinese form of "remedial" massage that supposedly promotes the circulation of *chi* and restores the balance of yin and yang (cosmic poles).

Light energy implantations: One of Ojela Frank's offerings (see "Chakra and cellular memory healing," above). It is an adjunct to chakra healing in which chakras are the objects of "implantations."

Love-powered diet: "Revolutionary" system concocted by Victoria Moran and based on the Twelve Steps. Twelve-Step programs purportedly advance recovery from various addictions and compulsive behaviors. They oblige participants to foster a connection with God or an alleged transpersonal "spiritual energy" or superhuman "power." Organizations that use the Twelve Steps include Alcoholics Anonymous, Emotions Anonymous, Fundamentalists Anonymous, Overeaters Anonymous, and Sexaholics Anonymous. In *The Love-Powered Diet: When Willpower Is Not Enough* (1992), Moran uses the terms *God*, *Goddess*, *Higher Power*, *Higher Self*, *Love*, *Nature*, and *Spirit* interchangeably. The first principles of her system add up to: People with eating-related problems (e.g., bingeing) cannot resolve them on their own; with their permission, however, a "Higher Power" will "work some wonders" in their lives. Moran advises writing, praying, and talking casually to God and provides anthroposophical, Christian, Hindu, Native American, and Sikh prayers.

Magical aromatherapy: Vitalistic offshoot of aromatherapy (also called conventional or holistic aromatherapy) expounded by author Scott Cunningham. Generic aromatherapy is the use of essential oils from plants, flowers, or wood resins to affect mood or promote health. Manners of use include sniffing, ingestion, and application to the skin (usually with massage). The following attributes distinguish magical aromatherapy. (1) Self-administration is preferable. (2) Its aims (e.g., love and money) need not relate to health. (3) Visualization of a needed change accompanies inhalation of a scent. (4) "Bioelectrical energy," which Cunningham describes as "non-physical" and "natural," merges with the scent and is programmable by visualization.

Micromovement bodywork: Purportedly down-to-earth form of bodywork that posits "kinesthetic melodies" and myriad elusive processes that carry the "pulse of life." Practitioners supposedly help clients "dance free" of tension and pain.

Neo-Reichian massage: System based on theories developed by Wilhelm Reich (1897–1957), the "discoverer" of orgone (a variant of the "vital force"). Practitioners purport to locate and dissolve "holding patterns" ("body armoring"). Reich postulated that obstructions to orgone cause neuroses and most physical disorders. Muscular contractions ("body armor") in various parts of the body supposedly manifest such "blockages."

Neural therapy: Form of "energy medicine" akin to acupuncture developed in Germany circa 1930 by two brothers, Ferdinand and Walter Huneke (also spelled "Huehneke"), both medical doctors. The Hunekes maintained that injections of local anesthetics into areas of "energy" disturbance ("interference fields") could bring relief from pain, immobility, and dysfunction. Injection sites include acupoints, scars, and the sites of old fractures or past infection. Neural therapy purportedly energizes "short-circuited" cells and helps the regulation of "biological energy." Proponents recommend it for hundreds of health problems.

N.I.A. technique: Form of exercise that allegedly integrates body, mind, and spirit and "opens" the heart and mind. "N.I.A." stands for "neural intermuscular action."

Nutrition kinesiology (NK): Alleged means of identifying: (1) health-impairing (e.g., allergenic) foods and other substances and (2) "corrective" nutrients. NK involves "muscle testing" à la applied kinesiology (see "Contact reflex analysis," above) and "acupoint tests."

OMNI-FORCE: Modular home-study program developed by Gérard V. Sunner, a psychiatrist, hypnotist, and reputed world-renowned expert in "Eastern medicine." The program involves self-hypnosis and acupressure. It supposedly enables followers to "recharge" their "energy," "liberate" their alleged sixth sense and possibly their "seventh," and direct "healing energy" to any part of the body. A mailing I received in July 1994 from the program's publisher, Pierre Pasteur, claims that, with consistent use of OMNI-FORCE, one will meet dangerous situations calmly and "do exactly what's necessary to get out of the situation without any bad consequences." It further claims that, through OMNI-FORCE, one "will eat exactly the same quantity that [one's] body needs, without wanting to eat more."

One Brain™: Variant of applied kinesiology (AK) whose premise is that the human body retains the dischargeable "energy" of "negative" experiences and beliefs. Proponents recommend One Brain for addictions, anxiety, compulsions, depression, dyslexia and other learning disabilities, low self-esteem, and phobias.

Planetary herbology (planetary herbalism): Integrative system of medical herbalism forged by Michael Tierra, C.A., N.D., O.M.D. (respectively, "certified acupuncturist," "doctor of naturopathy," and "doctor of oriental medicine"). Tierra dedicated *Planetary Herbology* (Lotus Press, 1988) to "all green, growing, flowering ones of this beautiful planet, who embody the universal creative healing energy." Therein, he describes herbs partly in terms of "energetics" and the "acupuncture meridian pathways" the herbs affect. "Energetics" is based on the concepts of "energies"—e.g., "heating," "cooling," "slightly warm," and neutral—and "flavors" ("tastes")—e.g., bland (mildly sweet) and salty. These concepts stem from traditional Chinese medicine and ayurveda (specifically *tridosha*), respectively.

Pointing therapy: Form of acupressure derived from Chinese martial arts—Chinese *wushu*, also called *wushu* or kung fu (*gongfu*). The method involves "pointing" (poking), pressing, pinching, patting, knocking, and pounding acupoints, all manually.

Polarity energy balancing massage: System based on the work of Randolph Stone (1890–1982), a chiropractor and naturopath. It has four branches: (1) energy balancing bodywork technique, (2) polarity yoga, (3) diet, and (4) "body/mind/spiritual" psychology.

Power yoga: Variant of *astanga* (raja) yoga—the reputed prototype of hatha yoga. Like *astanga* yoga, power yoga involves a series of postures and, as an accompaniment, a breathing technique called *ujaya* (*ujjayi*). The series of postures is purportedly designed to effect "therapeutic" bodily "alignment" and to "release" stress, tightness, and toxins from the "body-mind." *Ujaya* supposedly helps cellular purification.

Pranic psychotherapy: "Subspecialty" of pranic healing, which is a set of methods compiled by Dr. Choa Kok Sui. Pranic healing posits acupoints, chakras, meridians ("bioplasmic channels"), and a three-layered "energy body." Pranic psychotherapy includes four "healing techniques" in addition to those of pranic healing: (1) a "cleansing technique" for the removal and disintegration of "traumatic psychic energy" and such; (2) an "advanced form of energizing" for the disintegration of "etheric parasites" and the repair of external "etheric webs" that lie in a one-to-one relation behind chakras; (3) activation and inhibition of chakras; and (4) creation of a "positive thought entity" for the patient. Sui, who is nothing if not imaginative, expounds pranic psychotherapy in his book of the same name (Samuel Weiser, 1993).

Psychogenetics: Pseudodiagnostic method promoted by Gayatri Rein Reich. It posits decipherable patterns of "psychological DNA" that are "inherited" by fetuses.

Reich blood test: Pseudodiagnostic component of organomic medicine, the brainchild of psychoanalyst Wilhelm Reich (see "Neo-Reichian massage," above). Reich coined the word "orgone" to refer to his hypothetical fundamental, omnipresent, life-sustaining, intelligent radiation. The Reich blood test is a purported means of ascertaining overall "energetic health." Its premise is that the morphology of erythrocytes indicates the "energetic state" of an organism at the time of their removal. Supposedly, red blood cells with "bions" (which resemble blue beads) at their center are abnormal. Proponents characterize bions as semi-living, bacterium-sized, vesicular manifestations of orgone and as the building blocks of cells.

The professional activities of medical organomists include administering "orgone charged" water and applying the following devices. The orgone field meter and the *vacor* tube contribute to pseudodiagnosis. The meter allegedly shows the extent and strength of the patient's "orgone energy field." The *vacor* tube is an "orgone charged" glass vacuum tube that supposedly glows under

the influence of the patient's "orgone energy field." The "medical dor-buster" purportedly siphons a toxic form of orgone—"dor" (an acronym for "deadly orgone")—from the patient's body.

Shamanic psychotherapy: Mode of "spiritual healing" based on shamanism and the doctrine of reincarnation. It posits "missing soul parts."

Somatic dialogue: Mode of bodywork promoted by Chuck Ruland. It is a combination of hakomi body-centered psychotherapy, postural integration, and core zero balancing (see above). Hakomi is a spinoff of Reichian therapy (see "Neo-Reichian massage" and "Reich blood test," both above). Postural integration is a vitalistic form of bodywork. Somatic dialogue posits physical, emotional, and "energetic" bodies. Treatment supposedly results in the "discharge" of "imprints of the past."

Somatic emotional therapy: "Synthesis" of bioenergetics, rebirthing (see "Ecstasy breathing," above), and "somatic therapy" forged by certified social worker Jerry Josepher. Bioenergetics is an offshoot of Reichian therapy developed by psychiatrist Alexander Lowen, who rejected Wilhelm Reich's orgone theory but posited a "life energy," which he termed "bioenergy." (See "Neo-Reichian massage" and "Reich blood test," both above.)

Song channeling: Adjunct to rebirthing (see "Ecstasy breathing," above) promoted by music therapist Scott Kalechstein. It supposedly helps clients "open deeply" to healing. Channeling is the purported transmission of information or energy from a nonphysical source through human beings.

Soul amplification: Series of eleven "healing" sessions proffered by Ojela Frank (see "Chakra and cellular memory healing," above). It involves energy balancing, rebirthing, "energy activations," "advanced spiritual initiations," "soul bonding," meditation, and channeling.

Syntonics: Vitalistic "self-help" program created by author Dr. Robert Kronmeyer. It includes "syntonic food combining." (The term "food combining" refers to any dietary practice based on the notion that a meal's healthfulness depends considerably on the compatibility of its macroscopic components and/or the sequence of ingestion. Chief among the systems that include food combining are ayurveda, macrobiotics, and Natural Hygiene.)

Taido: Variant of reiki that does not entail physical contact. Both reiki and taido are forms of energy field work. "Energy field work" refers to any method or combination of methods involving aura analysis and aura balancing, with or without touch. Taido was developed in Japan in the 1980s.

Takionic: "Technology" for *chi* enhancement and "optimal health" promoted by Dr. Yung Chia, who advocates the integration of spirituality, science, and technology.

Tatwa meditation: Cornerstone of a nameless "holistic" system of "self-healing" involving astrology. "Spiritual teacher" Emahmn (sic) of Crestone, Colorado, "discovered" the system. *Tatwas*, which supposedly have "healing powers," are Hindu mandalas—designs that symbolize the unity of the soul with the universe.

Vitality fasting and rejuvenation: Program promoted by Edward Bauman and purportedly designed to "cleanse" the body, mind, and spirit. It involves fasting with juices and broth, "emotional release," and meditation.

Whole health shiatsu: Combination of shiatsu and dietary treatment expounded by coauthors Shizuko Yamamoto and Patrick McCarty. Shiatsu is a threefold form of massage whose purported goal is to promote health by increasing the flow of *ki* in the body. "Ki" is a Japanese word that signifies both breath and attention ("mental force"). It refers to an alleged original, fundamental, supernatural, governable, creative "energy of being" concentrated in the abdomen.

Zhan zhuang chi kung (zhan zhuang): Reputedly one of the most powerful forms of Qigong (*chi kung*). It allegedly boosts immunity and creates "inner peace."

Zhenjiu (acu-moxibustion, acupuncture-moxibustion therapy, chen-chiou therapy, China zhenjiuology, zhenjiuological therapy): Combination of acupuncture and moxibustion (also called moxibustion therapy). "Jiu" means moxibustion in Chinese. In traditional Chinese medicine, "moxibustion" refers broadly to the placement of hot objects, or the burning of objects, on acupoints. This allegedly supports yang, the masculine cosmic principle.

In my view, the meta-manifestations of alternative healthcare are: "spiritual healing" (e.g., yoga and ayurveda), "natural healing" (e.g., naturopathy and homeopathy), and "hands-on healing" (e.g., acupressure and reflexology). By "meta-manifestations," I mean broadest aspects, or thematic forms. These meta-manifestations create a mirage of a multisystem that is: (1) "spiritual" (a buzzword for "supportive of religious beliefs"), (2) "natural" (read "safe and not altogether unpleasant; nontechnological or low-tech"), and (3) "hands-on" (read "down-home, nontechnological").

"Spiritual Healing": Death Be Not Fatal

"Spiritual healing" comprises health-centered systems and methods that affirm the idea of "life after death" and borrow conspicuously from religious traditions. However, the term has divergent meanings. For example, it may refer to faith healing or to spirit healing. "Faith healing" usually means any form of religious "healing" wherein a "specialist" (typically a member of clergy) petitions God in the presence of the patient. Unbelievers purportedly risk watering down the healing process. Spirit healing is a form of channeling

whose advocates claim that healing is the work of divine power or of deceased doctors who have not let death stand in the way of their practice. As a metamorphosis, "spiritual healing" is based on four assumptions: (1) that the ultimate source of healing is supernatural; (2) that this source is usable directly by the ill person, through other persons, and/or through intermediary supernatural entities; (3) that death indicates the beginning of a transition either to an afterworld or to another incarnation; and (4) that all human beings are paranormally or supernaturally interconnected. Spiritual approaches include angelic healing, anthroposophical medicine, ayurveda, the Edgar Cayce tradition, Christian evangelical healing, Christian Science, exorcism, macrobiotics, shamanism, Sufi healing, and Tibetan medicine.

"Spiritual healing" posits and emphasizes a bright aspect of illness and thus often provides comfort in the form of unrealistic hope. The "spiritual healer" who focuses this hope on "cleansing," "spiritual reclamation," and "life after death" may claim that healing occurred even if the patient died from the "blessed" and "transformative" illness. Illustrative of this claim is the bumper-sticker message: "Real success is ending up in heaven." Deathbed sentimentality and claims of postmortem effects beneficial to the patient are outrageous "consolation prizes." "Spiritual healing" traffics in the false hope of everlasting life and the fear of personal nonexistence, feeding into and feeding on scientific illiteracy and a climate of "pro-paranormal" credulity.

"Natural Healing": Not Necessarily Naturalistic

In an article in the March/April 1993 issue of *Newlife*, ayurvedist Deepak Chopra, M.D., stated:

Nature is self-sustaining, once we cease to interfere. The same pulsation of life flows through the entire world, emanating from the gods or God. That unimaginable force created the galaxies and at the same time preserves the most fragile mountain flower.

"Natural healers" and their sympathizers have romanticized nature out of reality and into "supernature." "Natural healing" is a catchall for health-centered systems and methods purportedly based on "natural laws" (actually traditional beliefs). The multiformity of "natural healing" affords a "safe house" to supernaturalistic systems and methods, including: absent healing, acupuncture and acupressure, aikido, anthroposophy, applied kinesiology, Aston-patterning®, astrology, ayurveda, bioenergetics, the Edgar Cayce approach, the charismatic movement, fundamentalist chiropractic, Christian Science, cranial osteopathy, dianetics, exorcism, hydrotherapy and kneipping, iridology, jin shin do® bodymind acupressure™, jin shin jyutsu®, Jungian psychology, the laying on of hands,

lomi-lomi (also called lomi), macrobiotics, mesmerism, nature cure, naturopathy, orgonomic medicine, past-life therapy, polarity therapy, primal therapy, psychic healing, radiesthesia and radionics, reflexology, reiki, rolfing®, shamanism, tai chi, therapeutic touch, Touch for Health, transcendental meditation® (TM®), yoga, and "vibrational medicine" ("vibrational healing"). Vibrational medicine includes aromatherapy, chakra therapy, color therapy, crystal therapy, flower essence therapy, gem therapy, homeopathy, psychic surgery, and toning (a form of music therapy).

Scientists define natural laws as descriptions (explanations) of relationships between objects, events, and forces based on meticulous observation and precise reasoning—for example, the law of gravity. Such relationships are not inherently directive: they do not ordain human behaviors. Advocates of alternative healthcare, however, use the term "natural laws" to connote a morality of nature. (Many theists hold that the word "law" implies the existence of a lawgiver.)

In a letter to me dated June 14, 1994, the manager of the Committees on Publication of The First Church of Christ, Scientist stated: "We do not consider healing through scientific prayer to be 'supernatural.' Because Christian Science is based on the Bible and the teachings of Christ Jesus, we believe that this method of 'healthcare' is divinely natural."

The mainstays of "natural healing" are wishful thinking, superstition, unscientific empiricism, guesswork, and enmity toward scientific healthcare. Rituals and proselytism communicate its "spiritual" basis.

"Hands-On Healing": Touch and Go

Bodywork—the term is generally interchangeable with "hands-on healing" and "hands-on health"—involves touching, manipulating, and/or exercising the body. Many types of bodywork supposedly also involve adjusting the body's "energy field" or removing blockages to "energy." Bodywork encompasses massage therapy, body-centered psychotherapy (also called body-oriented psychotherapy, body psychotherapy, direct body-contact psychotherapy, and humanistic body psychotherapy), and touch therapy. "Touch therapy" and "touch healing" are generic terms for the laying on of hands and its variants, including MariEL, OMEGA, reiki, and therapeutic touch. Energy field work overlaps with bodywork. Supernaturalistic forms of bodywork include actualism bodywork, acupuncture, acu-yoga, AMMA therapy®, aromatherapy, *Bindgewebsmassage*, biodynamic massage, bioenergetics, body harmony, bodywork tantra, *chi nei tsang*, fundamentalist chiropractic, core energetics, craniosacral therapy, *do-in*, Esalen massage, the hakomi method, hatha yoga, Hawaiian temple bodywork, healing light kung fu, holotropic breathwork™, jin shin do®, jin shin jyutsu®, kum nye, life impressions bodywork, lomi-lomi, manual organ

stimulation therapy (MOST), marma therapy, the metamorphic technique, moxibustion, Ohashiatsu[®], ortho-bionomy[™], phoenix[®] rising yoga therapy, polarity balancing, the radiance technique[®], Radix, rebirthing, reflexology, Reichian massage, reiki, rolfing[®], the Rubenfeld synergy[®] method, shiatsu, sotai, Tibetan pulsing, Touch for Health, Trager psychophysical integration[®], and Chinese Qigong massage—including amma, *tui na* (Taoist healing acupressure), and *dian xue*.

The Bottom Line

Practitioners of alternative healthcare do not conform to current scientific standards. Many pay lip service to science, but some of these hypocrites—and many proponents who forthrightly poo-hoo science—talk up religion, spiritualism, or occultism as indispensable to the practice of medicine. Such systems, on the contrary, contribute nothing to sane healthcare.

BRIEFS

Linus Pauling (1901–1994). Linus Carl Pauling, Ph.D., died of cancer on August 19. Dr. Pauling won the Nobel Prize for chemistry in 1954, for his research on the nature of the chemical bond, and the Nobel Peace Prize in 1962. His books include *Vitamin C and the Common Cold* (1970), *Vitamin C and Cancer* (1979), and *How to Live Longer and Feel Better* (1986). Pauling, who reportedly ingested well over ten grams of vitamin C daily, proposed that massive doses of the nutrient could prevent the common cold and might benefit cancer patients. Research has not borne out these ideas. In *Vitamin C and the Common Cold*, he attacked the health food industry for jargonizing and thereby misleading consumers. Later, however, he soured toward similar critics after they criticized him, and he became one of the health food industry's standard-bearers.

Pauling's wife died of stomach cancer. In the May 1985 issue of this newsletter, James Lowell, Ph.D., conveyed the observations of Arthur B. Robinson, Ph.D., a former Pauling collaborator: Pauling had claimed that, because he and his wife took ten grams of vitamin C daily, they never had colds. Actually, Pauling had come down with the cold "frequently." Pauling had also claimed that his wife had stopped taking vitamin C by the time of her cancer diagnosis. Actually, she had taken teaspoonfuls with orange juice regularly.

GNC expands. General Nutrition Companies, Inc., has paid \$62 million to acquire the 204 stores operated by Nature Food Centres, previously the nation's second-largest chain of health food stores. About sixty-five percent of the stores will assume the GNC name. GNCI predicts that by the end of the year, it will operate 2,100 stores (about twenty-five percent of all U.S. health food stores).

GNC penalized \$2.4 million. The Federal Trade Commission (FTC) has reached a consent agreement under which General Nutrition Corporation would pay \$2.4 million to settle charges that it had falsely advertised 41 products, most of which had been packaged by other manufacturers. Many of the products were phony ergogenic aids.

Mail-order weight-loss scheme attacked. The Vermont Attorney General has filed a consumer fraud lawsuit against Lowensen International Inc., a Canadian company doing business as the "National Medical Research Institute" (reportedly in Swanton, Vermont). The lawsuit alleges that Lowensen had disseminated promotional matter throughout the United States with weight-loss claims endorsed by "Dr. Alan Lacey, M.D."—the pen name of a nonphysician. The promotional matter claimed that *Panderyl* capsules "normalized dietary thermogenesis" and had enabled one user to shed 35 pounds in six weeks "while eating normally."

New FTC guidelines for health claims. The 28-page "Enforcement Policy Statement for Food Advertising" provides guidelines for labeling similar to those of the FDA. The FTC will disallow health claims not supported by "significant scientific agreement."

BST report. An excellent 18-page report on "The Efficacy, Safety and Benefits of Bovine Somatotropin and Porcine Somatotropin" is available for \$3.85 from the American Council on Science and Health, 1995 Broadway, 2nd Floor, New York, NY 10023.

NEW ANTIQUACKERY BOOK

The Vitamin Pushers: How the Health Food Industry Is Selling America a Bill of Goods is an investigative report that convincingly portrays the health food industry as a form of organized crime. Written by Stephen Barrett, M.D., and Victor Herbert, M.D., J.D., the 548-page book covers propaganda techniques, "nutrition insurance," "stress vitamins," the pharmacy connection, so-called ergogenic aids, dubious diagnostic methods, fad diagnoses, nutrition cultism, the endless parade of gurus, the multi-level-marketing mirage, "chiropractic nutrition," homeopathic fakery, nutrition and the media, "vitamin wars," and companies that have marketed illegally. It includes a glossary of supplements and health foods. A hundred illustrations bring home the industry's marketing tactics. Copies are available to readers of *Nutrition Forum* at the reduced prices of \$26.00 (U.S.) and \$28.30 (Canada). (Regular prices are \$29 and \$31 respectively.) Order from: LVCAHF Books, P.O. Box 1747, Allentown, PA 18105.

F O R U M

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QUESTIONABLE HERBAL PRODUCTS

Varro E. Tyler

Americans are bombarded almost daily with propaganda concerning the alleged effectiveness of certain herbal preparations—"cures" for everything from AIDS to cancer. Thinking persons must often wonder how much herbal-product "information" is factual and how much is promotional hyperbole. Many such preparations may be sold legally as dietary supplements (foods) in the United States as long as no indications of therapeutic use appear on the package label or in accompanying literature. Some manufacturers circumvent this restriction by pointing to claims made in literature not directly associated with the "supplement." Moreover, there are no enforced standards of quality for such products sold in the United States. Consequently, the actual contents of the preparation may differ from the listed contents. Below I discuss some of the products about which readers have inquired.

Putting on Hairs?

Question: Does *101 Formula*, manufactured in Beijing by the Zhangguang Pilatory General Factory, really cure baldness? The package insert suggests that it can turn Kojaks into young Beatles. [Editor's note: I bought a bottle of "101" in Beijing in September and mailed the box and insert to Dr. Tyler.—J.R.]

Response: This "Hair Regrowth Liniment" consists of an extract of nine herbs in aqueous alcohol: angelica, astragalus, ginger, ginseng, hickory nuts, lovage, safflower, sage, and an ingredient that could not be identified (its English name on the

package is probably a misspelling). The generic name of safflower is misspelled. There is no substantial clinical evidence to support the effectiveness of any of the formula's identifiable ingredients as hair regrowth stimulants. Even if there were, the action of this preparation would be uncertain because the quantities of the constituents are not declared. This is a common shortcoming with herbal products.

Without specific information on the quantities of component herbs, it is impossible to state with certainty whether the herbs will have any therapeutic effect. This preparation is especially suspect because the stated names of two of the ingredients are taken from the homeopathic literature (e.g., "Aralia Quinquifolia" instead of *Panax quinquefolius*). This raises the question of whether at least some of the ingredients are present in minute amounts.

Another Wrinkle?

Question: Kombucha, or tea fungus, is said to eliminate wrinkles, prevent cancer, lower cholesterol, help with allergies, stop infectious diarrhea, recolor gray hair, and do many other wonderful things. Could you direct me to unbiased information about it?

Response: A beverage native to Asia, kombucha became popular in Russia, and from there its use spread to Western Europe and the United States. It is prepared by inoculating sweetened black tea with a complex mixture of yeasts and bacteria, sometimes referred to collectively as Manchurian mushroom. In addition to small amounts of alcohol, the drink usually contains about

No Male-Pattern Baldness in Zhejiang, China

As reported in the N.Y. Times 1/26/88



Dr. Zhao Zhangguang, Chinese farmer and traditional "Barefoot Doctor," developed a formula of 8 medicinal herbs that created thicker, fuller and healthier hair on men with thinning hair.

Reporter sent to investigate rumors

"He came to see me," Dr. Zhao said. "Of course he didn't believe anything." The reporter from Hangzhou, happened to be suffering from thinning hair. "I gave him some of my formula and after about 3 months he began to see hair."

Word spilled out of China. 101 FORMULA was so popular in Japan, travel agencies organized trips to China so men could order the product. A famous Japanese pop-singer said on the radio that "101 worked wonders" on his head.

101 FORMULA wins world acclaim

The King of Belgium issued the top award to 101 FORMULA at the *Brussels Eureka World Fair* in 1987. Other laurels include the *Industrial & Commercial Golden Cup* in Paris and in 1989 the *Oscar Top Prize* at the 16th New Science & Tech Exposition in Geneva.

Introducing 101A

Dr. Zhao has now improved 101 FORMULA. The new 101A scored a 84% effective rate in test conducted on 395 men. It also rated 95% effective in controlling hair loss.* 101A is now available in the U.S. Cost is \$89 for a 2 months supply and includes shipping and handling. Send your check or money order to Stevens 101 Int'l, 444 Brickell Ave., #51G, Miami, FL 33131.

30 day money back guarantee

*Granted No. (89) Guang An Men Hospital, China. Technical appraisal passed 11/26/88

Ad in the December 1991 issue of *Longevity*

3% of acetic acid and additional quantities of gluconic, lactic, tartaric, and other plant acids. Also usually present are such compounds as invertase, amylase, and a proteolytic enzyme.

Unfortunately, reliable scientific and clinical studies of kombucha apparently have not been published—not in the English-language literature, at least. Unbiased printed information is, therefore, not readily available. Nearly all of the evidence for the efficacy of kombucha is anecdotal, consisting of testimonials from patients and physicians who found it useful in treating various diseases or syndromes. Recent studies have shown that placebos work about 35% of the time and that up to 70% of patients claim relief from treatments known to be ineffective. In light of these findings, it is obvious that little confidence should be placed in anecdotal information.

As a refreshing drink, kombucha probably has merit, but it would be unwise to expect more. It may not be in the best interests of consumers to ingest habitually a drink containing large amounts of plant acids.

Pine Solution?

Question: I am looking for information on the herb Pycnogenol. Does it really help to lower high blood pressure and relieve arthritic pain?

Response: Commercial Pycnogenol is not an herb but a concentrate of 85% oligomeric proanthocyanidins extracted from the bark of *Pinus pinaster* Soland. growing in France. Here it is marketed by M.W. International, Inc., of Hillside, New Jersey. The proanthocyanidins (a type of bioflavonoid) in Pycnogenol are active free-radical scavengers. Because of their collagen-protecting properties, they are thought to have some favorable effects, including lessening of capillary fragility and improvement of peripheral circulation. However, substantial clinical evidence to support the use of Pycnogenol for hypertension or arthritic pain is lacking.

OTC Cure for BPH?

Question: My husband responded to an advertisement and received the attached brochure about *Prostata*. What do you think about the product?

Response: In 1990, the FDA banned the sale in the U.S. of all over-the-counter products for treating benign prostatic hypertrophy (BPH). The agency said it had taken this

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BEWARE of Counterfeits

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Ad in the November/December 1994 issue of *Natural Health*

action because: (1) it had not received data proving the alleged effectiveness of such products, and (2) use of such products might delay proper medical treatment. In view of this, I think it strange that Life Force Laboratories, of Marina Del Rey, California, says in their brochure that *Prostata* will “protect or restore the health of the prostate gland.”

Prostata contains pygeum, ginseng, horsetail, hydrangea, saw palmetto, and zinc. The product literature does not make known the amounts of these ingredients. Both pygeum and saw palmetto, if they are present in therapeutic quantities, are probably effective for BPH. Such efficacy is supported by numerous clinical trials carried out in several European countries. There is no reliable evidence that the other ingredients are either effective for BPH or harmful. Finally, in one clinical study, 13% of the patients given pygeum developed gastric symptoms.

Cancer Remedy?

Question: Literature on Essiac[®] tea, an herbal formula that originated in Canada, describes it as a “beneficial treatment for cancer.” What is your opinion?

Response: *Essiac* consists of burdock root, Turkish rhubarb, slippery elm, and cress in quantities undisclosed on the label. None of these ingredients has been clinically proven to be of value in the treatment of cancer. Rhubarb, if it is present in a therapeutic amount, would act as a laxative.

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Manuscripts and all editorial correspondence should be directed to: Jack Raso, P.O. Box 740045, Rego Park, N.Y. 11374.

In 1983, Food and Drug Canada examined case reports submitted on 87 cancer patients who had used the product. Of these, 78 showed no benefit, four saw worsening cancer, and two had died. Three patients had stabilized, but they had also received conventional cancer therapy. After this review, the Preclinical New Drug Submission for *Essiac* was revoked. A year later, the U.S. National Cancer Institute studied *Essiac* and concluded that it was ineffective against tumors. Still, it is sold as food in both the United States and Canada.

“Unnatural” (and Unspecified) Conditions

Question: *Km*, manufactured by Matol Botanical International, purportedly will “enable your body to rid itself of many unnatural conditions.” What are these conditions?

Response: The conditions are not specified in print, and the label does not make known the amounts of the 14 herbs that *Km* contains. So it is impossible to determine whether any of them is present in a therapeutic amount. If cascara and dandelion root are present in therapeutic quantities, the preparation would act as a laxative. The promotional literature states that the 585 mg. of potassium in one serving is equivalent to that found in one banana. Small amounts of calcium, iron, and iodine are also present. Available information compels us to conclude that *Km* is principally a potassium supplement.

Editor’s note: For further information on *Km* and Matol, see my article in the September/October 1991 issue of *NF* or Chapter 10 of *Mystical Diets*.—J.R.

“Rite” for Obesity?

Question: I received an advertisement for *Lite & Rite*, a 100% herbal product that contains epitonin, weidewinde, and fucus vesiculosus. The manufacturer claims that it is “a virtual elixir that produces unbounded energy, a feeling and appearance of

youth and a slimmer, healthier body.” Have you any idea what these herbs can do? Is the product effective against obesity?

Response: “Epitonin” is a fanciful name for ephedra, the Chinese herb containing ephedrine. “Weidewinde” is a misspelling of “Weidenrinde,” the German name for willow bark. “Fucus vesiculosus” is the scientific name of a brown alga that yields kelp products. Because ingredient quantities are not disclosed, it is impossible to determine whether the product has any significant physiologic effects.

Some people have advocated the use of kelp to control obesity, but probably only an iodine deficiency would warrant such use. Willow bark contains salicin, a compound converted to salicylic acid in the body. It might act as an analgesic but would not effect weight loss. Ephedra might produce a short-term decrease in appetite, but there is no substantial clinical evidence that it is a safe or effective facilitator of weight loss in the obese. In any case, it is a central nervous system stimulant and increases blood pressure and heart rate. Such side effects make the indiscriminate use of ephedra products highly inadvisable.



Jack Raso in Beijing herbal apothecary, September 1994. The drawers in the background contain herbs. The store’s prepackaged offerings included *Growth Granule* and *Oolong Anti-Obesity Tea*.

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Many other herbal products on the American market are alleged to induce weight loss. None has been found by the FDA to be effective for this purpose. Most such products contain diuretics and laxatives; together, these cause losses of water and fecal matter and, thus, a superficial,

temporary loss of weight. Herbs are poor remedies for obesity.

Varro E. Tyler, Ph.D., Sc.D., is professor of pharmacognosy at Purdue University and author of *The Honest Herbal: A Sensible Guide to the Use of Herbs and Related Remedies/Third Edition* (1993). Copies are obtainable for \$22 postpaid from LVCAHF Books, P.O. Box 1747, Allentown, PA 18105.

The Nitty-Gritty of Nutritional Health Fraud

A Review of The Vitamin Pushers

Jack Raso

Stephen Barrett, M.D., and Victor Herbert, M.D., J.D., are standouts in the anti-health-fraud movement, probably the most knowledgeable and effective critics of alternative medicine in the country. Their latest joint literary effort is *The Vitamin Pushers: How the "Health Food" Industry is Selling America a Bill of Goods* (Prometheus Books, 1994).

Three books were pivotal during my bumpy conversion from manic pill-popping to nutrition skepticism in the 1980s: (1) *Nutrition Cultism: Facts and Fictions*, by Dr. Herbert; (2) the second edition of *The Health Robbers* (1980), edited by Dr. Barrett; and (3) *The New Nuts Among the Berries* (1977), by Ronald Deutsch. Also helpful were John Fried's *The Vitamin Conspiracy* (1975)—Prometheus Books published the 1984 edition, *Vitamin Politics*—and *Vitamins and "Health" Foods: The Great American Hustle* (1981), by Drs. Herbert and Barrett. *Nutrition Cultism* stands on my desk, a subtle daily reminder of my former credulity; for example, regarding so-called vitamin B₁₅. This was the subject of a curiosity-provoking cover story in the March 13, 1978, issue of *New York*. Above a shiny tablet, the words "WONDER DRUG" spanned the cover.

And I believed.

Many people still seek magic bullets, pick-me-ups, panaceas, and sacraments in the form of food supplements and charmingly marketed placebos. In keeping with its complete title, *The Vitamin Pushers*

pertains less to supplements of any kind than to:

- promoters of medical irrationalism;
- their training schools;
- the ploys and sales tactics that promote their methods, programs, and wares;
- their run-ins with authorities; and
- the exaltation of their claims and practices by the media.

This hardcover is well over five hundred pages long and amply illustrated. Although the man in the street is its apparent target audience, the book contains a wealth of particulars for seasoned adversaries of health fraud. Below I paraphrase some of the conclusions and information in the book.

- A sure sign that a treatment is ineffective is a political campaign to legalize it. (P. 35)
- Unlike scientists and scientific practitioners, quacks rarely criticize their own methodology or that of other quacks. (P. 71)
- In 1993, sales of books in health food stores exceeded \$130 million. (P. 80)
- "Medical Poll Reveals 8 Out of 10 Doctors Take an Antioxidant for Good Health." Or so claims a 1994 ad from KAL,[®] Inc., of Woodland Hills, California. The ad cites "1992 Medical Tribune." However, *Medical Tribune*, a newspaper for physicians, conducted no such survey. Its editor merely asked doctors to report their experiences with vitamin E. Eighty percent of the responses were positive. (Pp. 141–142) [This ad is on page 63 of the November 1994 issue of *Longevity* and depicts free radicals as "out-of-control 'pac-men.'"]
- "Set-N-Me-Free," of Portland, Oregon, markets an "inch-loss program" that allegedly slenderness people by "cleansing" them of "toxins that hold cellulite in place." (P. 164)
- In 1989, there was an outbreak of eosinophilia-myalgia syndrome (EMS) among users of L-tryptophan supplements. EMS is marked by muscular pain (myalgia) and an increase in eosinophils (a type of white blood cell). The outbreak was due to specific manufacturing conditions at a Japanese company called Showa Denko K.K. Although Showa Denko maintained that L-tryptophan was being marketed as a "dietary supplement," company memos and a brochure represented it as a drug.



Free Radicals Attacking a Human Cell

Segment of "medical poll" ad in the November 1994 issue of *Longevity*

Other documents revealed that, in 1998, the company had become aware of unidentified impurities in its L-tryptophan. Then it began using a new strain of bacteria to produce the amino acid, a bioengineered modification of previous strains. Showa Denko *did not* inform the FDA of the impurities, *did not* inform the agency of the modification, *did not* test the modified product for safety in humans, and *did not* increase filtration to remove the impurities (a measure that would have slowed production). (Pp. 404–409)

I particularly enjoyed the partial account of a 1992 question-and-answer session between attorney David L. Suggs and GNC board chairman Jerry D. Horn (pp. 410–412), for example:

Suggs: Wouldn't you agree that your company shouldn't sell pills to people to take unless the pills provide some benefit and the pills are safe?

Horn: The latter part. We shouldn't sell pills that are not safe.

Suggs: Okay. How about the benefit part?

Horn: The benefit to each individual is up to them. We don't tell them what kind of groceries to buy in the grocery store.

Suggs: Well, you weren't selling groceries in your stores, were you?

Horn: We were selling food. Food products.

Suggs: People weren't taking your products for food purposes, were they?

Horn: I would say many of them are. You know, like broccoli. You might buy broccoli in pill form.

Incidentally, "GNC" stands for both General Nutrition Corporation and General Nutrition Centers (the stores). Today, the parent corporation is General Nutrition Companies, Inc. (GNCI).

In the second week of October, through Compu-Serve's "Holistic Health Forum," John Hammell, political coordinator of The Life Extension Foundation, urged "forum" members to phone Prometheus Books' toll-free line for "free" review copies of *The Vitamin Pushers*, which he described as a laughable "piece of trash." On October 27, Michael Powers, the advertising and promotion manager at Prometheus, told me that three callers who had requested review copies had "invented bogus newspapers." However, he said he doubted that there had been a significant number of fraudulent requests.

It is no wonder that healthcare "holists" and their sympathizers are concerned about this book: (1) Nutritional alternativism is the main engine of the alternative-medicine movement, a yawning gateway to healthcare's "Emerald City." (2) *The Vitamin Pushers* is the most up-to-date and comprehensive exposé of nutritional alternativism. (3) It is bound to cause cognitive dissonance in any reader who is not a rational skeptic or true believer. In the 1980s, I was such a reader, and I remain grateful to Drs. Barrett and Herbert.

Books, Lies, & Audiotape

This occasional section lists those books, audiocassettes, and other products received gratis from publishers or distributors that meet one or both of the following criteria. (1) The work or its subject matter interests me. (2) The work deals with food, nutrition, physical fitness, and/or alternative healthcare—authoritatively, propagandistically, inexpertly, or nonsensically. Comments follow most listings.—*J.R.*

The Alexander Technique: Natural Poise for Health

By Richard Brennan. Rockport, MA: Element Inc., 1991. Softcover. Pp. 114. Price \$8.95.

My book *Alternative Healthcare: A Comprehensive Guide* deals almost exclusively with supernaturalistic and quasi-supernaturalistic methods. Methods arguably on the borderline between quasi-supernaturalism and naturalism include aroma behavior conditioning (ABC), firewalking, and three forms of bodywork: the Alexander technique, Aston-patterning®, and rolfling. Of all the modes of bodywork I experienced during the development of *Alternative Healthcare*, the Alexander technique seemed the most useful, but it is also the most demanding of clients. Brennan defines the technique as "a method of becoming more aware of ourselves as we go about our everyday activities" (p. 2). Its focus is improvement of posture: maintaining alignment of the head, neck, and back supposedly leads to optimal overall physical functioning. Teachers of the technique convey it by manually pressing on various parts of the student's body and repeatedly uttering "directions" such as "Allow the neck to be free." I concluded that it "may, with perseverance, improve posture." On pages 30–31,

Brennan states: "[T]he habitual way of being that so many of us are encouraged to fall into from a very early age is bound to affect our physical, mental and even our spiritual well-being....[T]he Alexander Technique not only helps posture and coordination, it also balances emotions and helps to bring us peace of mind." It might also make one excessively conscious of one's carriage.

Alternative Medicine: The Definitive Guide

Compiled by The Burton Goldberg Group. Puyallup, WA: Future Medicine Publishing™, Inc., 1993. Hardcover. Pp. 1,068. Price \$59.95.

This propagandistic tome is neither definitive nor much of a guide. Indeed, it hardly deserves to be called comprehensive. Future Medicine styles itself "The Voice of Alternative Medicine." In the preface, businessman Burton Goldberg states: "Conventional medicine is superb when it comes to surgery, emergency, and trauma. But there's no question that alternative medicine works better for just about everything else...." The chapter titled "Mind/Body Medicine" quotes *Proverbs*, prominently and without comment. On the other hand, the book is a conversation piece, and anti-health-fraud activists may find the recurrent "Where to Find Help" and recommended-reading sections useful.

Alternative Medicine Yellow Pages: The Comprehensive Guide to the New World of Health

Compiled and edited by Melinda Bonk. Puyallup, WA: Future Medicine Publishing™, Inc., 1994. Softcover. Price \$12.95.

The companion to *Alternative Medicine: The Definitive Guide*, this book lists practitioners of alternative healthcare in the U.S. and Canada. The pages do not have identifying numbers.

American Heart Association Cookbook/Fifth Edition

By the American Heart AssociationSM. New York: Ballantine Books, 1994. Softcover. Pp. 500. Price \$6.99.

Ancient Inventions

By Peter James and Nick Thorpe. New York: Ballantine Books, 1994. Hardcover. Pp. 672. Price \$29.95.

One of the twelve chapters deals with medicine and includes a section on acupuncture. Another deals with diet and drugs. The authors pronounce so-called acupuncture anesthesia one of the "crowning glories" of the revival of acupuncture in modern China. They state, incorrectly: "It played a crucial role in convincing Western scientists beyond any doubt that acupuncture works."

Choices: Realistic Alternatives in Cancer Treatment/Second Revised Edition

By Marion Morra and Eve Potts. New York: Avon Books, 1994. Softcover. Pp. 921. Price \$15.00.

This is an excellent, comprehensive reference book. Following a chapter on investigational (experimental) cancer treatments is one on unproven (scientifically footless) methods. Unproven "remedies" include: Gerson therapy (see *Mystical Diets* and *NF*, Vol. 3, No. 2), Hoxsey treatment (see *NF*, Vol. 4, No. 12), immunoaugmentative therapy (IAT), laetrile (see *NF*, Vol. 5, No. 5), Livingston-Wheeler therapy, macrobiotic diets (see *NF*, Vol. 7, Nos. 2 and 3), metabolic therapy (see *NF*, Vol. 5 No. 8), psychic surgery, shark cartilage treatment (see *The Vitamin Pushers*), and the Simonton method (see *"Alternative" Healthcare: A Comprehensive Guide*). Of the 26 chapters, all except three have a question-and-answer format.

The Complete Vitamin Book

By Carl Lowe. New York: The Berkley Publishing Group, 1994. Softcover. Pp. 310. Price \$5.99.

On pages 11-14, the author relates the story of his turnarounds regarding vitamin supplements: When he was in his twenties and thirties, he took vitamin pills, but he later stopped. As a health writer specializing in nutrition, Lowe believed that eating a wide variety of fruits and vegetables, consuming meat only in moderation, exercising reasonably, and maintaining a desirable weight rendered vitamin supplementation a waste of money. When he was 42 years old, he began getting chest discomfort during his daily three-mile runs. At age 43, he underwent two angioplasties for the same artery.

Lowe states:

Why did this heart problem happen to me after years of exercising, eating right, and watching my weight and cholesterol? Aside from the fact that heart disease runs in my family, I firmly believe that the fact that I didn't take extra vitamins—particularly the antioxidant vitamins C and E and beta-carotene—influenced the development of my disease....The conventional medical wisdom claims that my becoming a victim of heart disease at the age of forty-three had nothing to do with vitamins. I don't believe it, because I do know that following all of the approved methods of preventing heart disease didn't work for me.

On page 25, he states: "The standard position that a balanced diet will supply all the vitamins that a healthy person needs does not adequately acknowledge the latest scientific findings....Since you can take vitamin supplements at levels that certainly will do no harm, it's a smart bet to take them and try to reap the benefits....[T]he possible good you will be doing yourself makes vitamins a good bet." Although this stance is problematic, the book is largely reliable.

The Consumer's Good Chemical Guide: A Jargon-free Guide to the Chemicals of Everyday Life

By John Emsley. New York: W.H. Freeman and Company Limited, 1994. Hardcover. Pp. 347. Price \$24.95.

Deadly Doctrine: Health, Illness, and Christian God-Talk

By Wendell W. Watters. Amherst, NY: Prometheus Books, 1992. Hardcover. Pp. 198. Price \$24.95.

Dr. Watters is Professor Emeritus in Psychiatry at McMaster University, Hamilton, Ontario. His thesis, in a sound bite, is that Christian indoctrination "may be hazardous to your health." The same, according to Watters, goes for Christianity as a movement. *Deadly Doctrine* is readable and insightful, but I have a quibble: In the introduction, Watters asserts, cryptically: "...many of the foods we eat contain additives that are harmful to human health in a variety of ways." I consider this, generously, an exaggeration. Below are excerpts.

- Under the influence of a belief system that promotes...hostility and distrust between two "parts" [body and soul] of the indivisible whole human being, it requires almost superhuman effort for an individual to develop any sense of unity or wholeness. Without integration of the whole person, there can be no real self, no self-esteem, and no self-mastery. (P. 38)
- The most destructive aspect of both prayer and [mystical religious] meditation is that they discourage the development of human-to-human communication skills as well as the formation of human support groups to aid in solving those problems that can be solved and coping adaptively with those existential problems that cannot. (P. 70)
- For Christians, guilt is a desirable feeling since it is meant to bring people to Jesus through conversion, confession of sins, and alms-giving....[However,] guilt, rather than leading to behavioral change, in fact may reinforce the maladaptive behavior patterns....The Christian Church, the House that Guilt Built, behaves very much like the firms that manufacture body soaps and deodorants....[T]he true Christian has been brain-washed into believing that he was born wicked, that he should suffer as Christ suffered in order to please God, and that he should aspire to a humanly impossible level of perfection....The church essentially makes people feel guilty for being alive.... (Pp. 80-85)
- Some of the more devastating teachings of Christianity might play a part in the genesis of schizophrenia and depressive disorders. (P. 150)
- Being religious is quite definitely not associated with greater mental health when compared to a scientific, questing approach to life. (P. 157)
- Many physicians are either religious themselves or are still very much affected by the fallout from Christianity's emphasis on the human-to-god bond over the human-to-human bond....[The] band-aid brand of medicine allows them to remain at a comfortable distance from their patients and their human problems....[P]atients expect a magic pill to make them feel better, thus enabling them to avoid confronting deeper issues in their lives. (P. 169)

Emotional Healing with Homeopathy: A Self-Help Manual

By Peter Chappell. Rockport, MA: Element, Inc., 1994. Softcover. Pp. 245. Price \$13.95.

The book is also subtitled *A Practical Guide*. Chappell is Director of Overseas Training for the London College of Classical Homeopathy. In Chapter Five, he outlines several "vitaly important" homeopathic principles, including the following.

Like cures like: A substance with specific effects in a healthy person can cure similar symptoms in an unhealthy person.

Potentiation: The process of repeated dilution and vigorous shaking of harmful substances renders them "medically active" yet "free of side effects."

The single remedy: Since there is "one soul in one body," there is only "one core problem at any time"; therefore, only one remedy is necessary "to create a curative action."

The whole picture: "The single remedy is selected to cover the whole picture of the person....every aspect of their personal situation, from the widest possible aspects and issues to the smallest and oddest details...."

Hierarchy of symptoms: "Mind symptoms" are usually more important than physical symptoms.

Dynamic vitality: Humans consist of a "soul energy" and a so-called physical body in which this vibrates. The "physical body" is actually an "energy pattern"—"a vibrational body of energy, vitality." The soul "sends out messages" to the mind. These messages "activate energetic feelings and actions of speech, movement, etc."

Direction of cure: Cures involve: (1) the soul, (2) thoughts and feelings, and (3) physical processes. Usually, "inner peace" is the first response to a remedy, "better energy" the second, and "physical" cure the last.

The Encyclopedia of Eastern Philosophy and Religion

By Ingrid Fischer-Schreiber, Franz-Karl Ehrhard, Kurt Friedrichs, and Michael Diener. Boston: Shambhala Publications, Inc., 1989. Softcover. Pp. 468. Price \$22.50.

The authors state in the introduction that their work "ventures into an area where, as far as the presentation of the material to Western readers is concerned, no fixed standards of form or content have yet been achieved—and indeed, perhaps none can be set." Headwords range from alternative standbys—such as *asana*, *ayurveda*, *chakra*, *ch'i*, *ch'i-kung*, *maharishi*, *mantra*, *meditation*, and *yoga*—to the subtler concepts of alternative healthcare—e.g., *akasha*, *Brahman*, *do*, *guna*, *kundalini*, *mandala*, *mindfulness*, *nadi*, *nirvana*, *samadhi*, and *satori*. Symbols for the doctrines that are the book's subject matter—Buddhism, Hinduism, Taoism, and Zen—correspondingly precede the definitions of terms that have different doctrinal meanings. For example, the word "samadhi" has one meaning in Hinduism and another in Buddhism and Zen; the two definitions are separate (preceded by symbols), but they share one heading.

In the introduction, the authors seem advocates of mysticism. I imagine that believers will find this book supportive of their faith and that those critics of supernaturalistic "healing" who are sticklers for detail will find it enlightening.

The Harvest Collection: A Vegetarian Cookbook for All Seasons

By Gardner Merchant. Garden City Park, NY: Avery Publishing Group, 1994. Softcover. Pp. 106. Price \$12.95.

This oversize book is attractive and well organized. Each main recipe has an illustrative color photo and does not exceed one page.

The Healing Cuisine: India's Art of Ayurvedic Cooking

By Harish Johari. Rochester, VT: Healing Arts Press, 1994. Softcover. Pp. 264. Price \$16.95.

Health Risks of Weight Loss

By Frances M. Berg. Hettinger, ND: *Healthy Weight Journal*, 1994. Softcover. Pp. 193. Price \$19.95.

Frances M. Berg, M.S., L.N., is editor and publisher of *Healthy Weight Journal* (formerly *Obesity & Health*), an excellent

bimonthly in its 9th year of publication that covers the gamut of issues pertaining to human body weight. According to the journal's mission statement, Ms. Berg and the members of her advisory board (including Stephen Barrett, M.D.) are "committed to exposing fraud and deception, to promoting the acceptance of a wider range of sizes, and to encouraging healthful living." To order the book or to subscribe to the journal, call 1-800-633-0023.

Health Through Balance: An Introduction to Tibetan Medicine

By Yeshe Donden. Edited and translated by Jeffrey Hopkins. Co-translated by Lobsang Rabgay and Alan Wallace. Ithaca, NY: Snow Lion Publications, 1986. Softcover. Pp. 252. Price \$14.95.

At the outset of the first chapter, the author states: "In the Tibetan system we believe that whether we are physically healthy or not, basically all of us are sick."

Heinerman's Encyclopedia of Fruits, Vegetables and Herbs

By John Heinerman. Foreword by Lendon H. Smith, M.D. West Nyack, NY: Parker Publishing Company, Inc., 1988. Softcover. Pp. 400. Price \$10.95.

Hidden Treasure: Discovering the God Within

By Thomas Ehrhardt. Virginia Beach, VA: A.R.E. Press, 1994. Hardcover. Pp. 118. Price \$14.95.

According to the back matter, Ehrhardt "abandoned a lifetime of atheism after undergoing a series of conversion experiences" and eventually became a minister. On page 16, he states: "Religion originally drew its knowledge from a source far higher than mere human thought...[T]he universe is the physical expression of a spiritual reality....Science...can't really tell us with certainty where the universe comes from—but religion can." If there is treasure in this eye-catching book, it is hidden indeed. (See the entry *A Physician's Diary*, below.)

How and Why We Age

By Leonard Hayflick. New York: Ballantine Books, 1994. Hardcover. Pp. 377. Price \$24.00.

Prof. Hayflick is an award-winning gerontologist and microbiologist. His name may ring a bell because of the Hayflick Limit—his finding that normal human embryonic fibroblasts double in vitro 40 to 60 times (in about two years). On page 289, Dr. Hayflick states:

In view of the overwhelming evidence that it will postpone disease and prolong life, why has there not been a mass movement to adopt the caloric restriction regimen? Aside from the fact that dietary restriction has not been proven conclusively to work in humans, I think the answer is that, for most people, the quality of their lives is more important than the quantity. I believe that a change in lifestyle, especially reducing daily caloric intake to levels of borderline hunger or near starvation, is too high a price for most people to pay for postponing disease and achieving greater longevity. Furthermore, we do not know what the long-term effects of caloric restriction might be on cognition.

The Joy of Health: A Doctor's Guide to Nutrition and Alternative Medicine

By Zoltan P. Rona. St. Paul, MN: Llewellyn Publications, 1994. Softcover. Pp. 262. Price \$12.95.

Not Milk...Nut Milks! 40 of the Most Original Dairy-Free Milk Recipes Ever!

By Candia Lea Cole. Santa Barbara, CA: Woodbridge Press Publishing Company, 1992. Softcover. Pp. 125. Price \$7.95.

On pages 15–16, the author states: "I found that I had often naively savored foods in incompatible combinations

(as many people do) and indulged in them at times of the year when they offered unsuitable kinds of fuel for the body's changing needs....As I gradually grew more in tune with the kinds of whole foods that Nature provides in seasonal order for the body to sustain balance and regenerate itself (versus foods that cause imbalance and degeneration), a more loving appreciation of my body and Nature began to take root in me." Ms. Cole is also the author of *Super Smoothies!* (see below).

A Physician's Diary: Case Histories of Hope and Healing with Edgar Cayce's and Other Natural Remedies

By Dana Myatt. Virginia Beach, VA: A.R.E. Press, 1994. Softcover. Pp. 233. Price \$13.95.

The author received her N.D. (doctor of naturopathy) degree from the National College of Naturopathic Medicine, in Portland, Oregon. A.R.E. Press is the publishing arm of the Association for Research and Enlightenment, Inc. (A.R.E.®), the chief disseminator of the "psychic" teachings of Edgar Cayce. For further information on A.R.E. and the Edgar Cayce tradition, see my article in the January/February 1991 issue of *NF*, Chapter 5 of *Mystical Diets*, or Chapter 7 of *"Alternative" Healthcare: A Comprehensive Guide*.

Pranic Psychotherapy

By Choa Kok Sui. York Beach, ME: Samuel Weiser, Inc., 1993. Softcover. Pp. 159. Price \$14.95.

According to its cover, this book is "an invaluable contribution to the field of holistic health." Considering the field, this may be true. Under the heading "Drawing In Ground, Air and Tree Prana," Sui tells would-be absorbers of "earth ki" to remove their shoes, stating that leather and rubber shoes "reduce the drawing in of prana by 30-50 percent"—a claim he does not reference. (For a description of pranic psychotherapy and other supernaturalistic methods, see the previous issue of *NF*.)

The Singing Cure: An Introduction to Voice Movement Therapy

By Paul Newham. Boston: Shambhala Publications, Inc., 1994. Softcover. Pp. 256. Price \$15.00.

Staying Young: How to Prevent, Slow or Reverse More Than 60 Signs of Aging

By Tom Monte and the editors of *Prevention* magazine. Emmaus, PA: Rodale Press, Inc., 1994. Hardcover. Pp. 342. Price \$24.95.

Thomas J. Monte is the coauthor of *Recalled by Life* (1982) and its mainly nuts-and-bolts sequel, *Living Well Naturally* (1984). He is the author of *The Way of Hope: Michio Kushi's Anti-AIDS Program* (1989). *Recalled by Life* and *The Way of Hope* are paeans to macrobiotics. The former is dedicated "To the Lamb of God...." (Regarding these three books, see *Mystical Diets*.) On page 314 of *Staying Young*, Monte and associates endorse religious praying as an efficient way of improving health.

Super Smoothies! Taste the Nectar of Life

By Candia Lea Cole. Santa Barbara, CA: Woodbridge Press Publishing Company, 1993. Softcover. Pp. 192. Price \$11.95.

This is principally a book of recipes for blenderized combos, almost exclusively of various plant foods (primarily fruits). The front matter quotes the author: "After a personal history of ill-health that was ineffectively medicated by prescription drugs, there was nowhere else to turn for help except back to nature" (p. 11). It further states that her recipes honor "creation (the life essence)." On page 29, Ms. Cole states: "Sometimes in our haste to appease the appetite, the flavors on our palates all but cause us to remember what food really is. Flavor, fiber, vitamins and minerals, yes; but I prefer to consider food also as containing the

seeds of divine intelligence." Ms. Cole is also the author of *Not Milk...Nut Milks!* (see above).

Taming the Diet Dragon: Using Language and Imagery for Weight Control and Body Transformation/Second Edition

By Constance C. Kirk. St. Paul, MN: Llewellyn Publications, 1994. Softcover. Pp. 235. Price \$4.99.

In the chapter titled "Imagery: The Power Source," Dr. Kirk describes imagery as "the most creative force innately available to human beings" (p. 81). She claims that people can learn to "unleash the power of imagination by transforming images into positive energy" and to use imagery to "literally change" their physiology "in order to...burn fat faster...and establish a lower biological weight naturally" (p. 82).

The Twelve Stages of Healing: A Network Approach to Wholeness

By Donald M. Epstein, with Nathaniel Altman. San Rafael, CA: Co-published by Amber-Allen Publishing and New World Library, 1994. Softcover. Pp. 225. Price \$12.95.

See the entry "Twelve stages of healing" in this issue's "Nutrition Nonsense and Healthcare Esoterica."

Audiocassettes Received

Sacred Verses, Healing Sounds. Volume I: Commentary and Selected Verses from The Bhagavad Gita

By Deepak Chopra. San Rafael, CA: New World Library, 1994. Running time: 128 min. Price \$16.95.

The *Bhagavad Gita* is an influential Hindu poetry book of unknown authorship composed between 500 and 200 B.C.E. See *NF*, Vol. 11, No. 4.

Understanding Alternative Medicine

Introduced by Peter Graves. Puyallup, WA: Future Medicine Publishing™, Inc., 1993. Running time: approx. 94 min. No price given.

The cover states in boldface: "One out of three Americans uses some sort of alternative medical treatment." Let me lay this myth of pseudovalidation to rest: It traces to a national telephone survey conducted in 1991 by David M. Eisenberg, M.D., et al. and published in the January 28, 1993, issue of *The New England Journal of Medicine*. Eisenberg is the primary author of *Encounters with Qi: Exploring Chinese Medicine*, first published in 1985. Reportedly, one of the focal questions to which the researchers had sought answers was: "What is the extent of use of unconventional therapy in the United States?" In the abstract, they stated: "One in three respondents (34 percent) reported using at least one unconventional therapy in the past year, and a third of these saw providers for unconventional therapy." (If this is so, only about 11 percent of the respondents visited such practitioners.) The researchers' working definition of "unconventional therapies" was: "medical interventions not taught widely at U.S. medical schools or generally available at U.S. hospitals." The trouble is, they included as "unconventional": relaxation techniques, chiropractic, massage, commercial weight-loss programs, "lifestyle diets," self-help groups, biofeedback, and hypnosis. These practices do not necessarily evoke (or correspond to) the label "alternative." All of them have scientific, naturalistic, or nearly naturalistic forms that are acceptable adjuncts to standard treatment, including: autogenic training (AT, or autogenics) and autogenic therapy (hypnotic relaxation techniques); orthopractic (a system involving massage); the Pritikin program; Swedish massage; and Weight Watchers.

The researchers stated: "Relaxation techniques, chiropractic, and massage were the unconventional therapies used most often in 1990." This did not surprise me in the least. (For further details, see Chapter 4 of my book *"Alternative" Healthcare: A Comprehensive Guide*.)

Nutrition Nonsense & Healthcare Esoterica

This occasional section will contain: (1) brief descriptions of mystical health-related methods I have not described elsewhere and (2) revisions of such descriptions. References are within brackets.—J.R.

Aura imaging photography (aura imaging): Variant of Kirlian photography—the basis of Kirlian diagnosis, which supposedly involves indirect analysis of the human “energy field” (“aura”). Aura imaging is a purported means of reading the “true character” of individuals. It is promoted in the U.S. by Johannes R. Fisslinger, the German author of *Aura Visions* and *Aura Imaging Photography*. It “pretty much” hinges on the *Aura Camera 3000*, also called the *Aura Image Camera 3000*, a computer system that produces instant photos. The “aura” colors in such photos purportedly “reflect your emotional-psychological health and spiritual well being.” A flyer titled “Aura Consciousness” provides examples: “Red in the heart center may mean courage. The same red seen in the left [energy] field may mean a change to a more energetic life coming in the near future.” A black-and-white ad features alleged photos of an aura “before and after a therapy session and healing.” The camera is the centerpiece of the *Aura Imaging System*, which includes a printout device and a video device. [“Pre-Registration Catalog of Workshops” for the New York, November 18–20, 1994, Whole Life Expo, pp. 6 and 8; personal phone conversation on November 2, 1994, with Paul, representing the Progen Company, in Redwood City, California; mailing from Progen Company post-marked November 2, 1994]

Beyond TherapySM: Variant of dreamwork promoted by psychotherapist Ken Costello, M.A. “Dreamwork” refers to any systematic inquiry into or use of dreams for the purported purpose of healing or self-development. The premise of Beyond Therapy is that everyone is a “Spiritual Being” with a whispering “Inner Self.” [Display on p. 27 of the November/December issue of *Newlife*]

Black Hat tantric Buddhist feng shui: Form of *feng shui* (see below) promoted by Nancy SantoPietro, a psychotherapist specializing in the “psycho-spiritual healing process.” According to her flyer, *feng shui* “was initially used to site auspicious locations for ancestral burial plots” in ancient Asia. *Mademoiselle* quotes SantoPietro: “When your environment is aligned, your chi can flow and all things are possible.” The Black Hat Sect is an “esoteric” school of *feng shui* that emphasizes *YI*—“the powerful use of blessings.” [Ad on page 86 of the October/November 1994 issue of *Free Spirit*; flyer received from Nancy SantoPietro, of Brooklyn, New York, on October 21, 1994; *Mademoiselle*, November 1994, p. 168]

Feng shui (pronounced “foong shway” or “fung schway”): “A kind of ‘acupuncture for spaces,’” according to Martin Wright. *Feng shui* is the ancient Chinese art of situating or orienting material structures and towns to increase the inflow of “good” energy and restrain “bad” energy. Well-being of the residents allegedly results. The premise is that all areas, large and small, have a distinctive “energy” that is guidable by changing the area’s configuration (e.g., removing an ornament from an apartment, or adding one to a particular corner of a room). No-noes include clutter, dark corners, gloomy colors, low ceilings, and sharp, pointed objects. “Feng shui” literally means “wind water.” [*Gulliver’s Macrocasm*, Fall 1994, pp. 16–17. This magazine/class schedule, also called *Macrocasm*, is published by Gulliver’s Living & Learning Center, in New York City.]

Future life progression: Form of “hypnotherapy” provided by Chet B. Snow, Ph.D., the author of *Mass Dreams of the Future* and a reputed expert on Edgar Cayce (see *NF*, Vol. 8, No. 1). It is an alleged means of viewing the life of a future incarnation of oneself. To accomplish this, one must “step into” space-time. [Edition of the syndicated newsmagazine “Sightings” broadcast twice on WNYW (Fox) on October 9, 1994; “Pre-Registration Catalog of Workshops” for the New York, November 18–20, 1994, Whole Life Expo, p. 13]

Holoenergetic healing® (holoenergetics®): Quasi-psychotherapeutic form of “energy healing” christened and promoted by Leonard Laskow, M.D., author of *Healing With Love* (Harper, 1992). In an interview for *Yoga Journal*, Laskow described the first of a series of alleged revelatory experiences that had led to his development of holoenergetics:

It was about two o’clock in the morning [at a meditation retreat], and I was in deep meditation. Suddenly, there was this incredible presence, and a voice that said, “Your work is to heal with love.” As soon as I heard it, I knew that it was telling the truth.

The following ideas underlie Laskow’s method. (1) Separation is illusory. (2) Maintenance of this illusion requires “energy.” (3) Often, physical or mental illness or stress is symptomatic of such consumption of “energy.” (4) Releasing oneself from the illusion of separation liberates tremendous “energy.” (5) Healing is the gradual elimination of the illusion of separation. Holoenergetics comprises four stages: (1) the recognition phase, wherein the patient purportedly identifies the source of his or her illness; (2) the resonance phase, wherein the patient allegedly comes to terms with the aforesaid source; (3) release, wherein the patient supposedly releases the “disharmonious energetic pattern” associated with the source; and (4) the reformation phase, wherein, according to Laskow, the patient replaces the “dysfunctional” pattern with an image symbolizing “the positive life-force intent...the energy that’s aligned with the natural order and harmony of the inherent healing process of the body.”

[Flyer received in November 1994 from Dr. Laskow’s office in Mill Valley, California; *Yoga Journal*, March/April 1991, pp. 43–49]

Motherhand shiatsu: Form of shiatsu whose main distinction appears to be that the “giver” and the “receiver” are “equally clothed” during sessions. [Ad on page 67 of the October/November 1994 issue of *Free Spirit*]

Network spinal analysis (network chiropractic, network chiropractic spinal analysis, Network): Distinctly vitalistic form of chiropractic developed by Donald Epstein, D.C. It embraces the following postulates. (1) An innate or “resident” intelligence, defined as inborn wisdom, governs all human biological processes through the nervous system. (2) This “intelligence” directs the “life force” (“vital life energy” or “vital life force”), which bestirs every cell. (3) Malposition of the spinal cord, nerves, and vertebrae can cause mechanical tension that may impede the “vital life force.” (4) Mental and chemical stress can cause such mechanical tension. (5) Removing mechanical impediments to the “vital life force” heightens the operation of “innate intelligence” naturally. (6) “The universe and society are intrinsically good.” A 1992 *Los Angeles Times* article quoted Epstein: “[T]he body’s innate intelligence will never do anything to harm the body.... The body will choose when to release material it doesn’t need, be it emotionally, physically or chemically. A person may cry, shake,

sneeze or even vomit." (See "Twelve stages of healing," below.) [Mailing postmarked November 3, 1994, from the Association for Network Chiropractic, in Longmont, Colorado. This mailing included: *Network Chiropractic Alignment for Growth*, Vol. 1, No. 4, ©1993 Innate Intelligence, Inc.; and a reprint of an article in the April 9, 1992, issue of the *Los Angeles Times*, titled "A Lighter Touch."]

Open Mind™ programming (Open Mind advanced programming): Use of Open Mind™ "soundtracks," a group of musical audiocassettes, to (for example) attract love or wealth, maximize one's creativity, build one's self-esteem, reduce stress, take charge of illness, overcome shyness, and expand one's "psychic powers." The tapes reportedly contain "success affirmations." [*SuperLife™*, Fall 1994, page 23. This catalog is published by Zygon International, Inc., in Redmond, Washington.]

Osteokinetics®: Nonmassage mode of bodywork involving: (1) nonmechanical traction and (2) "palpation" of bones, purportedly by "vital life force energy." It supposedly addresses pain, flexibility problems, and somatizations of emotionality and "psychology." [Display on p. 32 of November/December 1994 issue of *NewLife*]

Passion-for-life psychotherapy: Shamanistic method promoted by Batya D. Winninger, M.A., C.S.W. It posits "past lives." [Ad on page 92 of the October/November 1994 issue of *Free Spirit*]

Self expression therapy: "Holistic" form of "psychotherapy" promoted by Ralph Gray, C.S.W. It purportedly involves listening carefully to one's "true inner self," reconnecting thoughts and feelings, "releasing" physical and emotional "blockages," and recovering one's "authenticity." [Display on p. 30 of the November/December 1994 issue of *NewLife*]

Sound energetics: Invention of Helena Reilly, M.A., that purportedly involves analysis of vocal "frequencies" and the use of "personalized" tones to remove "blockages" and "negative energy patterns." [Ad on page 57 of the October/November 1994 issue of *Free Spirit*]

Spirit releasement therapy: Supposedly complementary method developed by William Baldwin, author of *Spirit Releasement Therapy: A Technique Manual/Second Edition* (Human Potential Foundation Press, 1992). It is a treatment for demonization (possession), which Baldwin terms "spirit attachment." [*Re-Source*, Autumn 1994, Vol. 5, No. 3, p. 33. This "resource guide" is published by the Institute of Noetic Sciences, in Sausalito, California.]

SuperShape psychological conditioning system: Audio subsidiary to the SuperShape permanent weight control system, a 4-audiocassette course for weight loss, "body shaping," and

maintenance of "ideal body size." The "conditioning system" consists of two audiocassettes whose "soundtracks" allegedly "implant high self-esteem and 'thin within' mental conditioning" into one's "inner mind." [*SuperLife™*, Fall 1994, page H8. This catalog is published by Zygon International, Inc., in Redmond, Washington.]

Thai massage: Mode of bodywork that borrows from acupressure, reflexology, and "passive" yoga therapy (a variant of hatha yoga). [Fall 1994–Spring 1995 Schedule of Events, Heartwood Institute, Garberville, California]

Twelve stages of healing: Alleged extraordinary approach to healing physical, mental, and spiritual ills. In 1983, the method's "discoverer," chiropractor Donald M. Epstein, invented a mode of chiropractic called network chiropractic. (A new term for the latter method is "network spinal analysis"; see above. It is also called network chiropractic spinal analysis.) Supposedly, 12 "stages of consciousness" are common to all humanity. Nearly all of Epstein's stages involve both: (1) yoga- or Qigong-like exercises and (2) declarations. For example, the first stage ("Suffering") involves declaring: "Right now, I am helpless" and "Nothing works at this time." On page 19 of *The Twelve Stages of Healing*, Epstein states: "The most appropriate response to Suffering is to stop thinking about its causes." (See this issue's "Books, Lies, & Audiotape.") The 7th stage involves "declaring": "Oooh," "Ahhh," and "Whoosh." The 9th stage involves declaring, "I experience my vital force"; and the 11th stage, "May it be on Earth as it is in Heaven." [*The Twelve Stages of Healing: A Network Approach to Wholeness* (1994); personal phone conversation on November 3, 1994, with representative of The Association for Network Chiropractic, in Longmont, Colorado; press release from New World Library, San Rafael, California]

UltraVit 7-day juice slimming program: "Mild fasting" program involving vegetable juice, sauerkraut juice, and dietary supplements. By drinking only the *UltraVit* juices and avoiding intake of solid foods for one week, one supposedly cleanses one's digestive tract. Through the program, one allegedly also "selectively burn[s] up damaged and dead cell tissue" and frees amino acids from "old cells" for recycling into healthy cells. [*SuperLife™*, Fall 1994, page 60. This catalog is published by Zygon International, Inc., in Redmond, Washington.]

UN system: Form of chakra healing whereby seminar-trained individuals purportedly access an "energy" capable of helping in, for example: activation of the immune system, stabilization of "planetary influences," and terrestrial "anchoring" of light. [Ad on p. 65 of the October/November issue of *Free Spirit*]

READERS' FORUM

Doctor of Philosophy...or Nutrition?

Dear Mr. Raso:

In the recent edition of *Forum*, Vol. 11, No. 3, May/June 1994, a question was raised regarding availability of a doctoral degree in nutrition. A number of doctoral degrees in nutrition are available in the U.S. A listing of these programs is available from several sources, including The American Institute of Nutrition. This office publishes a listing of doctoral programs in nutrition in the U.S. You may wish to contact: Dr. Richard G. Allison, Ph.D., 9650 Rockville Pike, Bethesda, MD 20814.

Especially those doctoral programs in nutrition that are affiliated with medical centers are likely to have more clinically related programs. Most doctoral degree programs provide options as to a dissertation versus other clinically oriented options. These programs also provide very strong background courses in health sciences, thus preparing graduates to be very effective in the medical setting. This would be ideal as academic preparation for a strong leadership role in clinical dietetics.

Eleanor A. Young, Ph.D., R.D., L.D.
Professor, The University of Texas Health Science Center
at San Antonio

Thanks for the information. However, you may have missed the point I tried to make in both the March/April and May/June issues: It is not that clinical R.D.s lack sources of clinical nutrition-related doctorates; it is that no unmistakably nutrition-related doctorate (e.g., "NutritionD") is available. It is high time that the definition for "clinician" included clinical dietitians. I would like to see institutions of higher learning with nutrition-related doctoral programs adopt an open-door policy toward clinical dietitians with a health-related master's degree. Indeed, I would like to see them roll out the red carpet to such dietitians, in the manner of "distant learning" institutions.



**Emblem of the Chicago
National College of
Nnaprapathy**

"Diploma Mill Bill" → Kentucky-Fried Quacks?

Dear Nutrition Forum:

Regarding your article "The Color of Quackery?" [NF, Vol. 11, No. 3], I would like to commend to health professionals a solution we have found in Kentucky. In 1988 our General Assembly passed a fraudulent degree act, also called the diploma mill bill. This act prohibits any person from holding himself out as a bona fide practitioner in any health profession unless his degree was issued by an institution accredited by a regional or professional accrediting agency recognized by the U.S. Department of Education [USDE] or the Council on Postsecondary Accreditation [COPA]. Any professional health group or consortium could seek this law. In our case it was the Kentucky Dietetic Association and the Attorney General's Health Fraud Task Force.

This bill is difficult to testify against in legislative committees. Few persons are willing to step forward to defend their diploma-mill degree. In our case there was no opposition.

Another benefit is that bona fide professionals who have advertised in the [Yellow Pages] section of another professional group have been required to remove their ads from that section and place it in a more appropriate Yellow Pages category. For example, a physician advertising himself as an expert in weight control placed his ad under "Dietitians." The attorney general's office informed him that his ad must henceforth appear in a physician category. This would also apply if a masseur/masseuse place an ad under "Physical Therapists," etc.

Formerly, some dietitians had complained to the Yellow Pages people about a health food store listing under "Dietitians," but the Yellow Pages will place an ad wherever anyone wants it, without investigation. Dietetic associations, which have so recently attained credentials in many states, have members educated in the legislative process. They should take the lead in seeking this valuable legislation.

Nancy C. Tullis, R.D., C.N., Louisville, Kentucky

On October 24, I spoke with Tess Kirsch, of the Commission on Recognition of Postsecondary Accreditation (CORPA).

Ms. Kirsch informed me that on January 1, 1994, CORPA became the "successor organization" to the defunct COPA. She further stated that CORPA "has continued the recognition process that COPA had done previously."

Note: Healthcare-related professional accrediting agencies recognized by both the USDE and CORPA include: the American Dental Association, The American Dietetic Association, the American Medical Association, the Association of American Medical Colleges, the Council on Naturopathic Medical Education, the American Osteopathic Association, the American Optometric Association, the American Physical Therapy Association, the American Psychological Association, and others.

Coming to Grips with Naprapathy

Dear Mr. Raso:

I am a member of the NCAHF [National Council Against Health Fraud] and a subscriber to *Nutrition Forum*....The purpose of my writing...is to commend you on your new book "*Alternative Healthcare*," which arrived yesterday; I have just about finished reading it. Although I am familiar with some of the material from *Forum*, I am finding much that is new. The format allows me to have a huge amount of information at my fingertips. This will be of value when I lecture—with the alphabetically arranged reference material, which I can use to deal with questions about some of the modalities with which I am less familiar....

I would like to share with you an experience of [seven or eight years] ago involving a "therapy" that you didn't include in your book: naprapathy. Our high school extension program listed a course called "Nutrition for People on the Go" taught by a naprapath....I maintained my "cool" fairly well until he claimed that Linus Pauling had received a Nobel Prize for...vitamin C research! His approach seemed basically the Natural Hygiene nuttiness with some applied kinesiology thrown in for good measure. At one point he asked me if I was a "sugar person"....I responded that I do indeed ingest refined sugar. (Have you ever noticed that, if there is one thing that all the fringe people are psychotic about, it's sugar?) And he invited me to participate in an experiment. First, he had me extend an arm and told me to resist the pressure he applied. Then, when I was able to move him away, he produced a restaurant-size packet of sugar and told me to pour half of it under my tongue without swallowing. To prove the weakening effect of that evil substance, he had me extend my arm again and resist his pressure. Naturally, he was stronger than I this time around. Also, naturally, he changed the fulcrum.... He told us that he ingests forty supplements daily (where does he have room for dinner?), that eating melons along with other types of fruit was unhealthy ("We don't know why; it just is"), and that he and other "alternative healers" are more interested

in philosophy than in science ("If it seems like a good idea, it probably works").

Since one of the world's only two "colleges" of naprapathy is in Chicago, I am disappointed that you didn't include the modality [in *"Alternative" Healthcare*]. I have been to their headquarters, a dismal, dreary old building on Chicago's northwest side....I find them interesting in a repugnant sort of way, like viewing a bad accident that you don't want to look at but can't keep yourself from watching.

Kurt Youngmann, Highland Park, Illinois

Mystical Diets (1993) deals with naprapathy in three places. *"Alternative" Healthcare's* working title was "Mystical Healing"—a term I use to refer to the vast assortment of health-related systems and methods that posit, or at least point to, supernatural "phenomena." I did not describe naprapathy in the latter book because I did not (and do not) discern supernaturalism either in the system or in related claims.

Comments: Naprapathy is a system of bodywork that originated with chiropractic professor Dr. Oakley G. Smith, author of *Modernized Chiropractic* (1906). The 1987–1989 catalog of the Chicago National College of Naprapathy quotes Smith, who described his system as originally a "reaction" to medicinal, osteopathic, and chiropractic principles. According to the 1994–95 catalog, naprapathy: (1) is a professional healthcare system; (2) is based partly on the principle that soft connective tissue in a state of contraction can cause "neurovascular interference," which may cause "circulatory congestion" and "nerve irritation"; (3) contends that reducing this "interference" (primarily by hand) paves the way for optimal homeostasis; and (4) in practice, includes "noninvasive modalities" such as nutrition counseling. The 36-month program is accredited by the Council of Colleges of the American Naprapathic Association, which is not a nationally recognized accrediting agency. Recently, school representatives told me that the only other school of naprapathy in the world is in Sweden.

A flyer I received from the school in September states: "An irregular and stressful lifestyle imposes additional 'silent' nutritional needs that the patient may not be aware of. Your Naprapath is well qualified to assess and advise concerning the adequacy of your nutritional intake." Well qualified? According to the school's current catalog, only three of the school's "degree" courses deal expressly with nutrition: "Science of Nutrition and Diet" I and II (SND 501 and SND 601) and "Clinical Nutrition Approach to Wellness" (NCN 603). Another course, "Naprapathic Therapeutics," includes the topic "diet and exercise counseling." SND 501 reportedly covers the "basic principles" of human nutrition. SND 601, a "continuation" of the former course, reportedly emphasizes current issues in diet and nutrition. NCN 603 covers the relationship of food and food supplements to health.

(Linus Pauling, who died of prostate cancer in August at 93, received two Nobel Prizes, both unshared: the first for his research on how atoms coalesce into molecules,

the second for campaigning against nuclear testing. According to the September 5, 1994, issue of *People*, he did not become a high school diplomate until after he had won the Nobel Peace Prize.)

"Religious Connections": Hidden Agenda?

Dear Mr. Raso:

I have enjoyed reading *Nutrition Forum* for some years now and wanted to applaud your recent issue about Ayurveda. You very clearly and correctly identified these questionable healing practices as religious in nature. I have found that most participants in such practices are unaware of the religious connections and that many so-called alternative methods are based entirely on a particular religious philosophy.

As you can see by the enclosed book [*The Hidden Agenda: A Critical View of Alternative Medical Therapies*], written by my wife [registered dietitian Sharon Sneed], who has a Ph.D. in nutrition, and myself, I have a substantial interest in the subject. The religious connections of these practices are by and large either ignored or unknown by the public. It is shocking to see public institutions and even the government be unwitting participants in what are in essence religious rituals.

Those promoting such health cults have clearly recognized the value of what [meditation researcher] Herbert Benson [M.D.] calls the "faith factor" in furthering their cause. It is particularly disturbing to see large, well-respected health organizations such as Sharp HealthCare in San Diego embrace such practices. I spoke on this very subject at a national Family Practice meeting in San Diego two years ago. Afterwards I was introduced to one of the medical directors for Sharp and we discussed Chopra's Ayurvedic scheme. From our discussion and the supporting papers I sent, they knew very clearly what they were buying into.

While I think it possible we may differ about spiritual matters, I wholeheartedly concur that "many are pushing religion but calling it medicine." Whether that occurs within or [outside] of any particular religious belief is irrelevant....[It is] a disservice to both science and soul. If I can ever be of service in this area, please call.

David L. Sneed, D.O., Austin, Texas

Thanks for your vote of support and for the copy of your book. *The Hidden Agenda* (Thomas Nelson Publishers, 1991) is readable, but it implicitly promotes an imagined alliance of science and Christianity as the superior alternative to New Age medicine and "Eastern religions." (I would prefer New Age eclecticism, which tends toward hedonism, to Christianity, which tends toward masochism. I'm glad I need not choose.) "Trouble spots" in your book include the following. On page 4, you cite "natural foods" as a "scientifically proven beneficial technique." On page 162, you claim that the Holy Spirit brought a naturopath to the "understanding" that New Age methods are unchristian attempts at sorcery. On page 217, you state: "God is sovereign and can

cure." On page 234, you describe prayer as part of the "antidote" to doctrinally "contaminated" medical practices. The appendix lists some twenty-eight "alternative health care practices" and describes them partly in terms of "spiritual concerns"—e.g., "completely unbiblical," "completely contrary to biblical warning," "a clear violation of Biblical warnings," and "invites demonic influence."

You quote Scripture in several places. Doing so to fight medical supernaturalism invites the exchange of one set of irrational beliefs for another, or the muddling of both sets. It is rather like pitting "vital energy" against the "vital force." The September/October 1994 *Bulletin Board* of the National Council Against Health Fraud includes a brief with the heading: "CHRISTIAN MINISTRIES FIND QUACKERY TOUGH TO TACKLE." According thereto, at least two Christian ministries that have dispraisingly informed their supporters about "New Age medicine" have more or less backed down because of financial concerns. The brief concludes: "Leaders have expressed dismay over the stranglehold quack practitioners have on their constituencies." This did not surprise me.

Dr. Sneed, if you believe in demons, the Holy Spirit, and the soul, let me assure you that we differ enormously on "spiritual matters." Such beliefs—no matter what the bible says, seems to say, or supposedly says—conduce to acceptance of vitalism and magic, key ingredients of the alternative-medicine and New Age movements. In *The Supernatural, the Occult, and the Bible* (Prometheus Books, 1990), Prof. Gerald A. Larue, president of the Committee for the Scientific Examination of Religion, illustrates biblical recognition of astrology, clairvoyance, levitation, magical healing, and giants relative to whom the ancient Jews were like insects. I also recommend *Deadly Doctrine: Health, Illness, and Christian God-Talk* (see this issue's "Books, Lies, & Audiotape").

I would venture to say that blind or inhumane greed is our mutual target, Dr. Sneed. But I have an additional target: the organized irrationalism that lulls the desperate and the disadvantaged, empowers the greedy, and supernaturalizes evil.

Note: So-called Christian skeptics are the most ardent "religious skeptics," but the primary objects of their half-baked skepticism are New Age practices, which they treat as corrosive to Christianity. Some Christians are pushing religion but calling it skepticism.

The Haunting

Dear Jack Raso,

Thought you might be interested in this flyer I recently received. It brings back memories of your article "Out on a Limb" [NF, Vol. 11, No. 1]. Do you suppose the ADA [The American Dietetic Association] is going to award CEUs [continuing education units] for this program? It doesn't look like a balanced program to me.

It saddens and embarrasses me to see the profession of dietetics going in this direction. Awareness of "alternative

weirdness" is one thing; supporting and sponsoring a program is another. Is it me who's crazy, or the rest of the ADA?

You summed it up beautifully in your article's concluding remarks: "...the doublespeak of semi-approval: it is one thing for practitioners to discuss questionable methods; it is another to encourage, albeit tacitly, desperate people to use them." The Western Colorado Dietetic Association is inviting big problems.

Gayl Easter, Denver, Colorado

P.S. I am an R.D., too. But the "body snatchers" haven't gotten me yet!

I became aware of the November 1993 "alternative nutrition" conference when I received a flyer in the mail. I deemed it more or less unnewsworthy and eventually decided not to attend. I changed my mind after *NF* associate editor Ira Milner, R.D., urged me to go. It seems to me that dietitians, once notable holdouts and even pariahs to alternativists, are increasingly coming out in favor of alternative healthcare.

Comments: Ms. Easter is the Denver Dietetic Association's Consumer Issues Chairperson. The title of the prospective seminar to which she alluded is "Exploring Controversial Therapies in Nutrition." The following information derives from the flyer. The seminar has two sponsors: (1) the Western Colorado Dietetic Association and (2) Valley View Hospital, in Colorado's Glenwood Springs (the seminar site). Six CEUs "have been applied for with ADA." The speakers total four: (1) Jackie Nielsen, M.S., R.D., Colorado's area network coordinator for the National Council Against Health Fraud; (2) Tara Skye Goldin, a "Naturopathic Physician"; (3) Bing Lee, an "Acupuncturist" who graduated from the "College of Acupuncture and Oriental Medicine in San Francisco"; and (4) Brigitte Mars, an "Herbalist" who owns Unity Herbs, in Boulder. The title of Mars' talk is "Herbal Nutrition and Healing." Math is not my forte, but I count three alternativists and one critic.

On October 19, the day I received Ms. Easter's letter, I phoned ADA, the Colorado Dietetic Association (CDA), seminar contact Cindy Krisinger, and Ms. Easter, in that order. I also attempted to call the "College of Acupuncture and Oriental Medicine." In the office of the Commission on Dietetic Registration (the credentialing agency for ADA), someone who identified herself as Carla told me that the state of Colorado is responsible for dietetic CEU approvals for programs within the state. She further said that ADA does not review Colorado programs for the state but simply enters such approvals "into the C.E. database system." Carla referred me to the CDA. There, Beth answered the phone and told me that the CDA "has nothing to do with" the Controversial Therapies seminar. She suggested that I call the contact whose phone number was on the flyer. So I phoned Cindy Krisinger and asked her if any agency had authorized dietetic CEUs for the seminar. Ms. Krisinger stated: "We put this together kind of quick." She said that the sponsors thus had not yet applied to ADA for CEUs, but she added that she very much expected approval. Ms. Easter

told me that she had called the CDA that day and that a spokeswoman had indicated unfamiliarity with the seminar.

I called the directory assistance line for area code 415 to get the number of the "College of Acupuncture and Oriental Medicine." Evidently, both the operator and a supervisor looked for such a listing in San Francisco but did not find even a "long shot," except for the "United Acupuncturists of California"—whose phone went unanswered.

On the following day, I phoned the American College of Traditional Chinese Medicine, in San Francisco, the only such institution in San Francisco listed in the 1992–1993 *Holistic Health Directory*. Victoria answered the phone and told me she thought that the "College of Acupuncture and Oriental Medicine" had closed down several years ago. Next, I turned to *Alternative Medicine: The Definitive Guide* (1993)—see this issue's "Books, Lies, & Audiotape"—and phoned the number therein for the American Association of Acupuncture and Oriental Medicine (AAAOM), in Raleigh, North Carolina. I contacted a management company that used to represent AAAOM, which is in Pennsylvania. Joy answered AAAOM's phone and told me that AAAOM did not have a listing for the "College of Acupuncture and Oriental Medicine." Then, for the third time in two days, I tried to

reach the United Acupuncturists of California, to no avail.

On October 21, Cindy Krisinger stated on my answering device that the "Controversial Therapies" conference had been "approved for six [C.E.] hours with ADA."

Incidentally, Ms. Easter and I also exchanged dim views of NBC's "The Other Side," a paranormal-promoting morning talk show that purports to take "an objective look at psychic phenomena, ESP, ghosts, alternative healing, and more." The show's name refers to "the other side of everyday existence." Recent editions of the show had focused on near-death experiences (NDEs) and "miraculous healing" (including vibrational medicine). Later topics have included: angels ("divine bodyguards"), contact with "departed loved ones," "full moon madness," Ouija, so-called out-of-body experiences (OBEs or OOBs), unearthly aliens "breeding" with humans, "the violent world of the poltergeist," and "unfriendly ghosts....hauntings." I have noticed much more credulity (true or false) than objectivity. The host is Dr. Will Miller, a licensed psychotherapist and Baptist minister. In the October 22–28 issue of *TV Guide*, freelancer Mark Nollinger called "reality-based programming targeting unreality" TV's hottest trend. He quoted the executive producer of "Sightings": "It's 20/20 meets *The Twilight Zone*."

Loose Ends

Jack Raso

With our last issue, *Nutrition Forum* entered its 10th year of continuous publication. In the 1980s, *NF* was my foremost beacon of skepticism in nutritional matters, amidst a vast swampland of disinformation and "health porn." By "health porn," I mean titillating misrepresentations of opinions or limited findings as grounds for the general use or disuse of a method, product, or substance. During the development of this issue, I told *NF*'s originator, Dr. Stephen Barrett, that it would be offbeat. He responded that all of the recent issues were offbeat.

But *NF*, in my view, has always been offbeat. My twist has been to foster rational skepticism explicitly and to explain unscientific dietary and nutritional practices in the context of *medical alternativism*—my term for the movement whose goal is to undermine health science.

Below I deal with three letters from nonsubscribers who expressed discontent with articles of mine published in *NF* this year.

Further "Out on a Limb"?

In a letter dated June 14, Robert Dostis, M.S., R.D., and Margaret Dziadek, C.S.W., R.D., both with the Gay Men's Health Crisis, Inc. (GMHC), stated:

Your article, "Out on a Limb," in the January/February 1994 issue of *Nutrition Forum*, paints a very distorted picture of the "Alternative Nutrition Strategies for

HIV/AIDS" conference that the Gay Men's Health Crisis cosponsored in November 1993....The purpose of November's conference was to provide a forum for the exchange of ideas and experiences in dealing with HIV-related nutrition problems. Our aim was to open dialogue among people with different approaches to the same problems, without either endorsement or dismissal, in an atmosphere of mutual respect and openness....

Despite your disparagement of much that was said as "advocacy of unscientific empiricism," you apparently do not object to anecdotal evidence when it's *your* anecdotal evidence. I refer to your efforts, described at the end of the article, to find support for your belief that megadoses of vitamin C could result in hypovolemic shock. You found interest, but no scientific verification, yet still expressed belief based on the experience of your own diarrhea and one doctor's report of having witnessed one case of hypovolemic shock....

The response of those attending has been overwhelmingly favorable, and we are proud to have opened this door....

Honestly, I am fed up with pleas for "open dialogue" in regard to alternative healthcare (see this issue's "Readers' Forum"). Carol-Jane Rand, R.D., the GMHC staff nutritionist who had designed the conference, phoned me on December 3, 1993, and claimed that the conference had had "an equal number of proponents and critics." The main speakers at the conference numbered eight. I heard very few critical statements from any of these speakers regarding specific

methods advanced at the conference: acupuncture, antioxidant "co-therapies," Chinese herbal medicine, and nutrient pharmaco-therapy (the use of specific micronutrients, e.g., vitamin C, in amounts at which they exhibit pharmacologic properties). Incidentally, the 1993 GMHC paperback *Living with AIDS: A Guide to Resources in New York City/Third Edition* includes a two-page section titled "Holistic/Alternative Therapy Services." The stated offerings of the 19 organizations listed include: acupuncture (e.g., at GMHC), ayurveda, hatha yoga, "holistic psychotherapy," homeopathy, "imagery," "IV vitamin therapies," ozone therapy, "polarity sessions," rebirthing, "spiritual healing," transcendental meditation, and "visualization."

I have never expressed a belief that "megadoses of vitamin C could result in hypovolemic shock." I stated: "Despite the lack of data, exacerbation of diarrhea due to ingestion of vitamin C seems a legitimate issue." While my mention of my apparently vitamin C-induced diarrhea was arguably misplaced, consider that, in making such mention, I was not promoting a product, a private practice, a store, or an institute. In other words, I did not (and do not) have a vested interest in unselling vitamin C supplementation. (I take dietary supplements, but not megadoses of vitamin C and not regularly.)

I do not doubt that GMHC's participation in the conference was based on good intentions. However, in my opinion, the conference was, as a whole, a disgrace to its sponsors and something of a disservice to HIV-infected persons.

The Executioner's Song?

In a letter dated July 5, Robert Crayhon, host of a radio show called "The Voice of Wellness," stated:

"Forum" comes from the Latin, meaning the outdoor meeting place where legal and political business is conducted. As chief writer, publisher and editor, [sic] your publication can hardly be considered an open discussion. You are jury, judge, and executioner, with all of the scientific objectivity of a kangaroo court. Not only is your lack of nutrition knowledge evident in your article, your style implies that anything you put in quotes is "bad." This is "fake" investigative journalism of the worst kind.

In a letter, I asked Mr. Crayhon to specify both the article to which he had referred and the statements therein that, in his opinion, evidenced a lack of nutrition knowledge. In a two-page reply mailed later that month, Mr. Crayhon stated: "Your lack of nutrition knowledge shines through in many areas, notably in your dismissal of higher doses of vitamins as merely something that 'can have adverse effects.'" He did not specify the article to which he had referred; and, despite his allusion to "many areas" of knowledge deficit, he specified only one instance that supposedly demonstrates the alleged deficit.

This newsletter is not a free-for-all arena. At least three members of the editorial board perform a prepublication review of each article I write. Nonmembers have also participated in the review process. Way too many publications provide a platform for true believers, irrationalists, and exploiters of the wide-eyed. *Nutrition Forum*, as I see it, is primarily a forum of and for skeptical health professionals.

In the sense that I consider claims and methods and develop critiques for publication, I am a judge. If I merely conveyed claims and described methods uncritically, I would be a funnel for misinformation and disinformation. In his reply, Mr. Crayhon stated that he considered me an executioner because (he said) I was trying to undermine the career of a particular health professional. This was (and is) not so; but, in any case, such an endeavor does not warrant calling the attempter an executioner.

Finally, I *sometimes* use quotation marks under the following circumstances.

- I don't know the meaning (or intended meaning) of a term.
- A term refers to something ill-defined, or the existence of the referent is unproven, unlikely, or untestable.
- A phrase or statement is ambiguous, outlandish, or incomprehensible.
- A designation is (1) ambiguous, (2) misleading, or (3) both nonstandard and self-applied.
- Without quotation marks, a term would lend unmerited credibility to a method, system, or product.

Case closed?

BRIEFS

Cranberry juice against UTI. In a double-blind trial, elderly women who drank cranberry juice daily over a six-month period had lower bacterial counts and a lower incidence of urinary tract infection [JAMA 271:751-754, 1994]. The benefits apparently are unrelated to changes in the acidity of urine. (The median pH of the cranberry juice group was higher than that of the placebo group.) The authors cautioned that further research is necessary to determine whether these findings are useful to the prevention or treatment of urinary tract infections. Reprints are obtainable from: Jerry Avorn, M.D., Program for the Analysis of

Clinical Strategies, Brigham and Women's Hospital, 221 Longwood Ave., Boston, MA 02115.

Free sample. Readers have phoned to inquire about *The Diet Business Bulletin*, the quarterly newsletter cited in the brief on Susan Powter [NF, Vol. 11, No. 1]. To obtain a free sample of the *Bulletin*, edited and published by John S. LaRosa, call (516) 791-6579. Mr. LaRosa is president of Marketdata Enterprises, Inc., which offers diet industry-related mailing lists, market research reports, and custom research.

FTC trims Cybergenuics. L&S Research and its founder and CEO Scott Chinery have agreed to pay \$1.45 million to settle charges that they made numerous false and unsubstantiated claims in the advertising and sale of *Cybergenuics Total Body Building System*, *Cybergenuics for Hard Gainers*, *Cybertrim*, *Quicktrim*, and *Mega-Fat Burner Tablet* (also called *SuperFat-Loss Tablet*). The FTC had also charged that "before-and-after" photos used in the ads were deceptive because they did not reflect the typical or usual experience of users. The consent agreement prohibits claims that use of these or similar products can cause more muscle gain or fat loss than nonuse, unless there is reliable scientific evidence to support such an assertion. The agreement also bans unsubstantiated claims that the inclusion of chromium picolinate in a product or program can cause muscle-building, weight loss, or a reduction in blood cholesterol.

"Hatch bill" enacted. On October 25, President Clinton signed the Dietary Supplement Health and Education Act of 1994 (DSHEA), whose spearhead was Republican Utah senator Orrin Hatch. The law impairs the FDA's ability to regulate the supplement industry. For example, in matters of safety, the agency now has the burden of proof. DSHEA also charges the FDA with developing label standards specific to dietary supplements before 1997, and the Secretary of Health and Human Services with establishing an Office of Dietary Supplements within the National Institutes of Health. Dr. Stephen Barrett will explore relevant questions in the next issue of *NF*.

Health-fraud opponents petition FDA. Forty-two critics of quackery and pseudoscience have jointly asked the Food and Drug Administration: (1) to require that all over-the-counter "homeopathic drugs meet the same standards of safety and effectiveness as nonhomeopathic OTC drugs" and (2) to issue a warning to the effect that the FDA does not recognize homeopathic "remedies" as effective. (See the entry *Emotional Healing with Homoeopathy: A Self-Help Manual* in this issue's "Books, Lies, & Audiotape.")

Hypnotists restrained. The Oregon Attorney General has obtained consent agreements halting schemes by two hypnotists who had promised high success rates for weight reduction and smoking cessation. Bob Dean had claimed in ads that women who attend his seminars typically reduce their dress size and that men would reduce their waists by 2-3 inches in only four weeks. Those who attended his "free" seminar were told that weight-loss success required buying a series of tapes and following a stringent diet and lifetime maintenance rules. Bobbie Lee Chaffin, operating under the names Roberto Di Silva and Doctor Michael LaSalle, claimed a 96% success rate that was unsubstantiated. Dean was assessed \$500 and ordered to comply with refund requests from any Oregonian who had purchased tapes during the previous two years. Chaffin was assessed \$2,400. Neither is permitted to continue doing business in Oregon.

Lieberman's name absent from CBNS mailing. A mailing received in October from the Certification Board for Nutrition Specialists (CBNS), source of the credential styled C.N.S. (Certified Nutrition Specialist), lists Penelope Edwards, M.P.H., C.N.S., as secretary. A mailing dated Fall 1993 had listed Shari Lieberman, Ph.D., C.N.S., as secretary. (Lieberman was the subject of two *NF* articles this year.) In the 1994 cover letter, CBNS president Stanley Wallach, M.D., stated that CBNS had grandfathered more than four hundred nutrition professionals into Certified Nutrition Specialists. He further stated: "The C.N.S. credential is the result of several years of study by a committee convened by the American College of Nutrition. Once it was decided to create this credential, the committee was incorporated separately. It is now independent of any existing board or professional society."

Nutrition Forum gets new publisher. Prometheus Books Publishers, Inc., Journals Division, has replaced the partnership of Jack Raso and David Xu as publisher of *NF*, which is in its tenth year of continuous publication. Paul Kurtz, Ph.D., founded Prometheus in 1969. It is the world's preeminent publisher of books on freethinking and skepticism. Its Consumer Health Library® includes *A Consumer's Guide to "Alternative Medicine," Examining Holistic Medicine, The Faith Healers, The Health Robbers, Vitamin Politics, The Vitamin Pushers* (see review in this issue), and Jack Raso's *Mystical Diets* and *"Alternative" Healthcare: A Comprehensive Guide*. (To order any of these books or to request a catalog, call 1-800-421-0351.) The Journals Division is responsible for printing, mailing, and marketing *NF*, while Jack Raso continues to function as editor in chief and "desktop publisher." (Associate editor David Xu has commenced employment with General Media Publishing Group, which publishes *Longevity*, *Omni*, and *Penthouse*.)

Sara Lee sees the "lite"? Sara Lee Corporation has agreed to pay \$130,000 to settle charges brought by 13 state attorney generals. The company had designated several of its sausage products "lite" or "light" despite the products' high fat content. (For example, over 76% of the calories in *Hillshire Farm's Lite Smoked Sausage* came from fat.) The settlement also requires Sara Lee to disclose the percentage of fat reduction for "lite" sausage products and prohibits "percent fat-free" claims unless the product is low in fat.

Skeptic spotlights alternative healthcare. An article by Jack Raso heads up the current issue of *Skeptic* (Vol. 2, No. 4). Published by the Skeptics Society, a membership-based organization, *Skeptic* is an absorbing, well-illustrated quarterly whose specialty is dissecting claims related to cults, health, history, and religion. Each issue is about a hundred pages long and revolves around a theme. The current issue is available for \$8 (which covers shipping and handling) from: Skeptics Society, 2761 N. Marengo Ave., Altadena, CA 91001. For further information, call (818) 794-3119.

FORUM

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Wholly, Holy, Holy Pills, Magic, and Religion at the Whole Life Expo

Jack Raso

Alternative healthcare is but one division of a motley collection of movements whose central thesis seems to be: Faith, based on common sense, subjective experience, and/or revelation, preempts rational understanding. I call this accumulation of movements *alternativism*. Alternativism includes: semibiblicism (e.g., millennialism), conspiracy-theorizing, the Fortean movement, parapsychology, pseudoscientific historical revisionism, pseudoscientific multiculturalism, UFO abductionism, unconventional religions, and socioeconomic alternativism. Socioeconomic alternativism includes communalism, "natural" lifestyles, naturism (nudism), multilevel (network) marketing, and organic farming. Such movements converge at dozens of "human potential" or "personal growth" fairs around the country every year. Most alternative movements manifest a laissez-faire disposition toward most antiestablishment movements and religious underdogs; the result is that all manner of poppycock and humbug goes uncriticized (at least publicly) by insiders at large.

Earth vs. the Flying Saucers

On November 18, I attended the eighth

New York Whole Life Expo, at the Roosevelt Hotel in midtown Manhattan. As I waited for a friend at the hotel's main entrance, I spoke with a smoker whose "badge" indicated he was an exhibitor. He told me he was an old hand at health expos. The general information section of the official program guide described the three-day affair as "the largest showcase in the world for holistic health and New Age awareness, with a commitment to healing ourselves and healing the planet." According to this section, the expo included more than a hundred 30-minute lectures,

more than seventy-five 1½-hour workshops, 150 exhibits, a bookstore, "psychic readings," and massage sessions. The "psychic readings" were available in "The Intuitive Arts Environment," where astrologers, clairvoyants, numerologists, "psychometrists," and "readers" of palms, "runestones," and tarot cards carried on their trades. ("Runestones" are stones, or stony objects, that bear runes—magical characters, e.g., ancient Germanic letters.) In short, the expo was an "amusement park" for dietary-supplement poppers and soul-seekers (who apparently deal with their "mortal coil" by taking "natural" supplements, meditating, and



Centerpiece (shown at actual size) of *New Frontier* cover

assuming yogic postures). The cover of the November/December 1994 issue of *New Frontier*, the "Magazine of Transformation," may have captured the spirit, so to speak, of the event. Complimentary copies of this issue were available at the expo.

On November 22, I spoke by phone with Michael C. Luckman, the New York expo's public relations director. At the expo, Mr. Luckman had lectured on "UFOs as the New Religion" and conducted a workshop titled "Earth vs. The Flying Saucers—Only This Time It's for Real." ("Earth vs. the Flying Saucers" is a 1956 sci-fi flick.) The program guide stated that his workshop would include reportage of "unprecedented changes in the world political landscape that appear to be directly related to coming UFO contact." Luckman told me that the Whole Life Expo had originated about ten years ago and that the expos take place annually in at least eight major cities across the U.S., including Los Angeles. He referred me to an article about the expo in the "Metro Section" of the November 20, 1994, issue of *The New York Times*. A photo of exhibitors wearing "head pyramids" accompanied Douglas Martin's uncritical article, which started: "Believers in an afterlife have always operated pretty much on faith. But as more and more people are revived from what appears to be death, the view from the other side is becoming clearer." According to Martin, Paul Andrews, the expo's executive producer, had had a near-death experience in 1976 that left him cocksure he was a "spiritual entity."

The "Brainy" Naturopath

Karen Purcell, "N.D.," who practices a form of "naturopathic health care," reportedly of her own invention, in Manhattan, ran the first exhibit we visited. There, with the help of her husband, she proffered iridology exams and "herb supplements" marketed by Nature's Sunshine Products, Inc. (NSP), a multilevel marketing company [see NF 9:17-23, 1993]. A flyer, a checklist form, and a questionnaire described Purcell as an "N.D.," a "Doctor of Naturopathy," and a "One Brain Facilitator." Another flyer, titled "Optimum Health," appends the initials "B.M." and "M.M." to her name. (On November 22, Purcell told me that these initials stand for "Bachelor of Music" and "Master of Music.") A business card stapled to a Nature's Sunshine leaflet designated Purcell a "Doctor of Naturopathy," a "Master Herbalist," an iridologist, and a "One Brain' Emotional Stress Defusion [sic] Facilitator." The "Optimum Health" flyer states:

For years health problems prevented Dr. Karen Purcell from continuing a promising operatic career and left her frustrated, stressed and depressed....

During the 1980's, Dr. Purcell was introduced to holistic health disciplines. She began applying these to her life and found them to be quite effective. As her health improved Dr. Purcell began

training in holistic health. She became a Master Herbalist, an Iridologist, and a Doctor of Naturopathy. In addition, she has added the *ONE BRAIN* method of psychological wellness, and *CONTACT REFLEX ANALYSIS* [see NF 11:47, 1994] to her credentials.

However, Purcell matter-of-factly described the source of her naturopathy "degree" as a "short-lived" correspondence school, the Natural Health Academy, which she said had been in Teaneck (a township of northeast New Jersey). She added that, to practice naturopathy in New York State, an N.D. degree was superfluous.

Back to the Future?

Purcell virtually equated One Brain™ with applied kinesiology. I submitted to a complimentary "kinesiology test." Facing me as we both stood, "Dr." Purcell gently held my wrists and moved my arms in unison for several minutes. While she moved my arms, she articulated ranges of numbers (e.g., "one to ten, ten to twenty"). During pauses, she "homed in" on a number, articulating identical numbers repeatedly. "This is present, past, future," she said as she began manipulating my arms. She stated:

[It's] very gentle muscle testing....It's real gentle....[I]t just sort of goes by itself. It's, like, very happy to bring up some of your, you know, past traumas and hopefully dump them....When I'm touching you, you know what I know [I didn't] and I know what you know. So—hah! Interesting. Inner energy transfer makes life real interesting, then, doesn't it? Okay. So, um, we're looking for three priorities ["top three areas of negative emotional charge," according to her "Issues Evaluation" form], in order of priority—what your body is dealing with that it would like to have released....

Nineteen. [The nineteenth item on the aforementioned form was "Relationship issue."] Is it nineteen? Is it anything else? Okay. It comes up: A relationship issue would be [the] number one [priority] that your body is disturbed about, and it's—it's stressful....

[I'll] show you the one's that come up...somewhere in your little brain.

"Okay, that's what your conscious is talkin' about," Purcell told me, alluding to three items on the "Issues Evaluation" form. In descending order of alleged importance, these were: "relationship issue," "unresolved grief," and "guilt or shame." "If you want to play it further,"

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Manuscripts and all editorial correspondence should be directed to: Jack Raso, P.O. Box 740045, Rego Park, N.Y. 11374.

she stated, "you can take this other questionnaire, and you can go and fill it out; and we have yet to know the answers. And then we see how much is—is—is true. [It's a] truth and lie game, you know?" The 31 items on her One Brain questionnaire included: "I never seem to have enough money," "I have high blood pressure," "I have a serious degenerative illness," and "I often feel very restless, and I don't know why." Purcell said of One Brain: "It's totally noninvasive, and it's your body....I'm not interjecting any of my own self onto you....All I'm doing is, like, steering the ship." Later, she demonstrated patterned eye movements as an example of a corrective measure, offered "iris analysis" at a cost of \$10 per exam, and claimed she could trace some problems to a "past life" of individuals.

Purcell was in San Diego when I interviewed her by phone on November 22. She stated that she often uses herbs initially and that NSP "has extraordinary quality control." "When the emotional issues are being addressed," she said, "then the nutritionals [sic]...work better, because the emotional issues are probably what made the person sick in the first place." Purcell summed up her philosophy: "The person is a whole person when the mind and the body and the emotions and the spirit are dealt with effectively."

Unjuicy "Juice"

Next, I conversed with Jerome M. Dano, an independent distributor who ran one of the two *Juice Plus*+™ exhibits at the expo. A flyer describes the product as:

"A HOLISTIC APPROACH TO
NUTRITION AND ENERGY"

JUICE IN A CAPSULE:

Another flyer states:

A daily dose of Juice Plus+™ gel caps [i.e., 2 "Orchard Blend" capsules and 2 "Garden Blend" capsules] actually exceeds the benefits of juicing by providing higher levels of enzymes and keeping important fiber. It's like eating pounds and pounds of raw vegetables and fruits! (Without the hassle of shopping, chopping and cleanup!)

According to this flyer, the "Garden Blend" variety consists of "cell builders," including the following vegetables.

- Carrots, which allegedly clean the walls of blood cells
- Barley, which supposedly "rejuvenates nerves"

- Beets, which supposedly remove fat and prevent sterility
- Kale, which "contains 40 times more calcium than milk"
- Spinach, which "contains 10 times more calcium than milk"

Stapled to the latter flyer was another, titled "COMMON SIGNS TO LOOK FOR," which features a list of 34 "benefits found by people taking Juice PLUS+." These include the following.

- General sense of well-being
- More energy
- Less craving for sweets
- Crave fruit, vegetables & salad
- Weight loss
- Weight gain (if desired)
- Loss of inches from waist & hips
- Look better
- Easier to quit smoking
- Easier to start exercise program

The other side of this flyer bears a list of athletes and sport teams "using" *Juice Plus*. On this list is "Smokey Santillo." A multicolor leaflet describes "Dr. Humbart Santillo" as an author, a *Juice Plus* pioneer, a "leading naturopathic physician," and an "enzyme specialist." The text of another multicolor flyer begins:

Most significantly, each ORCHARD BLEND and GARDEN BLEND capsule contains natural food enzymes....The natural food enzymes found in fruits and vegetables release the food components in the food you eat and make them "bio-available" to you. With these natural food enzymes, the food you eat is broken down more effectively so your body can absorb proteins, complex carbohydrates, vitamins, minerals, electrolytes and other necessary nutrients....[I]t would be nearly impossible to eat the large quantities of fresh produce each day to obtain all the enzymes found in JUICE PLUS+™.

A follow-up mailing from Dano postmarked December 5 included a flyer that quoted Santillo: "Aging correlates perfectly with the enzyme reserve in the body. However, there are only two ways to preserve and replenish our enzyme level: by eating raw food and by taking enzyme supplements."

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Paperback Writer

I have paged through four of Santillo's books, all paperbacks published by Hohm Press, in Prescott, Arizona: (1) *Food Enzymes: The Missing Link to Radiant Health* (1987), also subtitled *The Key to Radiant Health*; (2) the expanded edition of *Food Enzymes* (1993), which, according to the cover, "CONTAINS NEW INFORMATION ON JUICES PLUS ENZYMES"; (3) *Intuitive Eating* (1993), and (4) *Natural Healing with Herbs* (1984) [see NF 8:32, 1991]. In the introduction to *Intuitive Eating*, Santillo favorably cites Prof. Arnold Ehret's *Mucusless Diet Healing System*. Therein, Ehret, a Christian naturopath who died in 1922, stated that venereal disease was easily curable by diet and fasting, that gonorrhoea was "simply an elimination through this natural elimination organ," that drugs and extreme meat consumption were the principal causes of venereal disease, and that the "mucusless" diet "eliminated" masturbation, nocturnal emissions, and prostitution.

The cover of the first edition of *Food Enzymes* appends the initials "B.S., M.H." to Santillo's name. It also states he holds several "degrees," including: "Doctor of Naturopathy," "Health Practitioner," "Iridology Certificate of Merit," "Master Herbalist," and a "Doctor's degree from the Concept-Therapy Institute" that he allegedly earned after eight years of study. In September 1993, I phoned the Concept-Therapy Institute to inquire about his "Doctor's degree." A representative told me that Santillo had received an "honorary degree" for attending all of the institute's courses. She emphasized that the "degree" was an "honorary certificate." (For information on concept-therapy®, see *"Alternative" Healthcare: A Comprehensive Guide.*)

On the cover of the second edition of *Food Enzymes*, the initials "MH, N.D." (sic) adorn Santillo's name; the covers of *Intuitive Eating* and *Natural Healing with Herbs* designate him "N.D."

Santillo has made the following unfounded claims about food enzymes.

- [The belief] that enzymes are protein molecules...is incorrect...Once we cook food at high temperatures...the enzyme is destroyed...Although the physical protein molecule is still present, it has lost its life force. [*Food Enzymes*, 2nd ed., p. 2, and *Intuitive Eating*, p. 93]
- The difference between live (raw) and dead food is enzymatic activity. [*Food Enzymes*, 2nd ed., p. 6]
- [T]he enzymes in raw food actually digest 5 to 75 percent of the food itself *without* the help of the enzymes secreted by the body. [*Food Enzymes*, 2nd ed., p. 11]
- [Food enzymes are] something that every person could use during therapy, or as a health supplement, that could act as foundation and adjunct to both medical and non-medical therapies. [*Intuitive Eating*, p. 91]

On November 25, I called Hohm Press to ascertain the source of Santillo's apparent N.D. degree. The person who answered the phone did not declare the organization I had reached but, upon my asking, said her name was Tina.

Tina asked me to wait a moment and then said that no one there had the information I wanted. I asked her to convey my request to "Dr. Santillo." On the morning of November 29, Tina called and told me that the source of "Smokey's" naturopathy "degree" is the Anglo-American Institute of Drugless Therapy. I asked the location of the school, but Tina said she didn't have any idea about that. I further inquired if the word "Hohm" in "Hohm Press" was a euphemism for "home." "Kind of," she replied.

I discuss the Anglo-American Institute of Drugless Therapy in the section following the next.

Requiem for an Enzyme

Mr. Dano, the *Juice Plus* distributor from Huntington, New York, told us:

Juice Plus is a good alternative if you're not eating...[the recommended number of] servings each day....They get the fruits and vegetables when they're fully ripe, okay? In fact, other people might be throwing them away by now....So, you get them when they're richest; [then] they juice it. Okay? So they convert it to a juice, and then you go through a process called flash drying....It's a process, like, at 60°, which dries it out. When you dry it out, when you take the liquid and other waste products out, you take the sugar and the sodium out. That's why you see so little sugar and sodium—and calories. There's like one or two calories per capsule, okay?...Now you gotta reconstitute it with the water. You don't drink it with coffee or anything hot because heat kills enzymes. At 49° F, all enzymes are killed.

"Why wouldn't you want to kill the enzymes?" I asked Dano. He replied: "Enzymes are an integral, important part of helping the body, the chemical reactions in your body, break down everything else and get it absorbed." I inquired whether the enzymes in the product entered the bloodstream. He had said so during his introduction but now said he was not "a hundred percent sure." (Why would anyone without suicidal impulses want assorted plant enzymes to enter his bloodstream, anyway?) Dano stated that four *Juice Plus* capsules were the "equivalent of more than five servings" of fruits and vegetables. My companion remarked that \$50 for a month's supply was a little steep. Dano responded: "If you buy it by the four-month supply, that's \$1.25 a day. And, for the equivalent of all of eight pounds of fruits and vegetables a day, that's cheap." (A daily intake of eight pounds of fruits and vegetables is not prudent.) According to a lab report I received from Dano on December 6, two "Orchard Blend" capsules contained 22 percent more fiber than 8 ounces of fresh squeezed fruit juice, and two "Garden Blend" capsules contained a little less than that in 8 ounces of fresh squeezed vegetable juice. The fiber content of eight pounds of fruits and vegetables far exceeds that of four capsules of *Juice Plus*. To furnish fiber in rival amounts, each of the four capsules would have to be too large to swallow whole.

Abunda Life

At the table designated "Abunda Life Times," information was available on the Abunda Life Holistic Retreat and Clinic, in Asbury Park, New Jersey. The establishment is also known as Abunda Life, the Abunda Life Health Hotel and Clinic, the Abunda Life Holistic Hotel and Clinic, and the Abunda Life Holistic Healing Retreat. According to a brochure titled "The Vacation with a Purpose," which I received several years ago, founder and "Holistic Director" Robert H. Sorge (pronounced "Sorj") holds a "doctorate of philosophy in naturopathic medicine from the United States School of Naturopathic Medicine and applied sciences [sic]." An ad in the "Profiles" section of the November/December 1989 issue of *NewLife* magazine stated that Sorge had graduated magna cum laude from the "U.S. School of Naturopathy." Around that time, I phoned Abunda Life at least twice and requested information about this supposed school, to no avail. On May 9, 1994, I spoke by phone with Sandy Voit, Bastyr University's Dean of Students. Voit said that, although he had worked at Bastyr for 12 years, he had never heard of the U.S. School of Naturopathy. I called Abunda Life's "wellness clinic" on the afternoon of November 28. The woman who answered the phone said that Sorge was not in the office and offered her assistance. However, she told me she didn't know anything about the school.

The "Vacation" brochure also states that, in 1964, Sorge "received his doctorate in naturopathic medicine from the Anglo American Institute Of Drugless Therapy in Great Britain." According to the 11th edition of *Bear's Guide to Earning College Degrees Non-Traditionally* (1992), the Anglo-American Institute of Drugless Therapy is an unaccredited correspondence school in Renfrew, Scotland, founded in 1911. After my call to the clinic, William T. Jarvis, Ph.D., founder and president of the National Council Against Health Fraud, told me he had never heard of the U.S. School of Naturopathy. However, he said he had obtained a "Doctor of Naturopathy" degree from the Anglo-American Institute (then in Bournemouth, England) in the late 1970s. It had cost \$51. The course had consisted of a loose-leaf book, about 1½ inches thick, that contained 45 lessons ranging from 1 to 7 pages. Among other subjects, the lessons covered chiropractic, color therapy, iridology, and naprapathy [see NF 11: 63-64, 1994]. Jarvis's "thesis," dated January 1977, is a poetic but simplistic work 2½ pages long and double-spaced. It concludes:

Mother Earth is alive and well and she wants us to be too. If we'll just give her half a chance she'll give us even more than that. Let us therefore listen to her voice and live happy and healthy lives.

After my chat with Dr. Jarvis, I received a call from Marcus Antonius of Abunda Life, who said of the U.S. School of Naturopathy: "I think it's in Illinois." He stated that Sorge had been at the expo on November 19 and that Abunda Life had "gotten a lot of business" as a result of distributing free literature there. On December 3, I received a 33-page

brochure from Abunda Life titled "Nutritional Testing & Personal Health Evaluation." Twenty-four pages include at least one affirmation of God, Jesus Christ, or the Bible. Page 16 states:

Today they [i.e., the "immoral" people who constitute the "Medical Establishment"] want to claim Naturopathy, Nutrition, Herbs, Natural Vitamins, Colon Hydrotherapy, Massage and Natural Healing is the practice of medicine. We say clearly, emphatically and absolutely, it is not and to attempt to stop the teaching and practice of principles that God has given us for our health and healing is not only repressive and immoral, but those who attempt to prevent this gospel from getting to "we the people" may be in jeopardy of the plagues and curses of God soon to come upon the earth.... No force can prevent the gospel of our King.

According to the brochure, the offerings at Abunda Life include "The Bach Flower Emotional Profile Test," "Basil [sic] Metabolism," "Cybernetic Command Therapy," foot reflexology, "Iridology Analysis," and "Radionic Scanning."

Sorge is also editor of *The Abundant Life Times*, a bimonthly magazine that purportedly is "committed to proclaim the Glory of Our Great Creator God" and "distributed free to health minded individuals seeking an alternative to both establishment drug medicine and the New Age form of holism steeped in Eastern philosophy." The June 1993 issue included three ads for the Abunda Life Church, which shares the hotel's address and offers such "services" as Christian hypnotherapy, Christian meditation ("C.M."), and "spiritual healing" (including the laying on of hands).

The Pit and the Pendulum

One exhibit promoted dietary supplements marketed by Kroeger Herb Products, in Boulder, Colorado. The "product guide" states that founder Hanna Kroeger was born in Turkey to German Christian missionaries, opened one of the first American health food stores (New Age Foods) in 1958, and began Kroeger Herb Products in 1978. According to the guide, Ms. Kroeger "believes that God can heal any ailment, at any time, and that it is up to us to seek and apply an action that will provide an avenue of healing, such as nutrition, herbs or spiritual methods." The guide describes 17 books and booklets by Kroeger, including: "Alzheimer's Science and God," *Cookbook for Electro-Chemical Energies*, "The Pendulum, the Bible and Your Survival," and *The Seven Spiritual Causes of Ill Health*. The dozens of supplements described in the guide include:

- **Bio Pep:** "A subtle combination of herbs to stimulate and balance the aura and rejuvenate in a way unlike ordinary 'pep' products."
- **Circu Flow:** "When unobstructed, the blood carries vital cargo to cells in need and removes wastes."
- **Female Balance:** "Formulated to provide natural estrogen to women that need hormonal balancing."

- **Spiro Kete:** "Helps promote conditions unfavorable to spiral tailed bacteria."

A woman at the exhibit told us that *Circu Flow* is also referred to as "Herbal Chelation" and was formerly called "Our Lord's Formula." In her booklet "Arteriosclerosis and Herbal Chelation" (1984), Kroeger states:

The word from the Bible comes to me as I write about how arteriosclerosis can be healed....

In my life I learned that everything Our Lord does, works. So, the Herbal Chelation (which I never claimed it was my formula,) [sic] works. It is Our Lord's formula.

It was in the rush hour of the day when a man approached me asking how he could avoid a bypass operation....I had to say "No, I have nothing to offer."..."Jesus, help," I murmured and here the heavens opened. "Take Equisitum, concentrate [sic], Hawthorne, Aloe Vera gel." I listened and that was Our Lord's instruction....Our Lord had given the formula for him....Again He in His Mercy reached down to us mortals to heal us....

Kroeger concludes:

My advice:

**CLEAN YOUR ARTERIES
WITH HERBAL CHELATION**

Just "Sei/No"

Free literature at the Seicho-No-Ie exhibit described this sect as a "supradenominational truth movement" and wonderful philosophy of life founded in Japan in 1930 by Dr. Masaharu Taniguchi. A glossy flyer titled "You are a Child of God!" says of him:

[O]ne day, while in deep meditation, he received the divine inspirations that were to form the basis for the Truth of Life Movement. After receiving these inspirations, Dr. Taniguchi began spreading the teachings to others. Many miraculous healings took place; people recovered from various diseases, including cancer and tuberculosis.

The flyer further states: that humans possess all the "creative powers of God"; that Seicho-No-Ie incorporates the teachings of Christianity, Buddhism, and Shinto; that there is no sin and, therefore, no need for redemption; and that the "physical world" is a "reflection of the mind."

Women at the exhibit, apparently Japanese, solicitously asked us to take paper signs bearing such statements as "Become a Person Who is Loved and a Person who Loves" and "Discard your critical Nature and you Liberate your Mind." The "fine print" on each card states: "Repeat these words 20 times a day to impress your subconscious mind. Words have power."

YECK! More "Ancient Wisdom"

"Do you believe in dreams?" a stranger asked me as I neared the Eckankar exhibit. Recent issues of the newsletter of the New York Satsang Society, a chartered affiliate, state: "Eckankar is a religion that teaches there is a spiritual essence, known as the ECK, that connects each of us with the Heart of God. We can experience the ECK as inner Light and Sound." *Eckankar: Ancient Wisdom for Today* (1993) includes the following definitions.

ECK—The Divine, or Holy, Spirit; the Audible Life Stream; the essence of God which supports and sustains all life; the Life Force.

Light and Sound of God—The Holy Spirit. The two aspects through which God appears in the lower worlds.

Eckankar was founded in 1965 by Kentucky-born Paul Twitchell (also known as Peddar Zaskq), a former Scientologist who died in 1971. *Harper's Encyclopedia of Mystical and Paranormal Experience* (1991) states: "In 1944, while Twitchell was serving aboard a Navy ship...a Tibetan master named Rebazar Tarzs appeared to him in his soul body. Tarzs, who claimed to be about five hundred years old, introduced Twitchell to...ECKANKAR." *The Fringes of Reason* (1989), an entertaining, skeptical "field guide" to New Age beliefs, describes this international religion as:

The Stupidest Cult. A coloring-book occult/oriental philosophy in which daydreaming and wishful thinking become "the ancient science of soul travel." Learn to project your astral body *while driving!!* Strange astral-world cosmology reminiscent of 1940s pulp science fiction. Proof that you can't go broke underestimating the intelligence of the American seeker.

Tales from the "Dark Side"

Seichim reiki (pronounced "say-keem RAY-key") is a composite of seichim and "traditional" reiki. A leaflet titled "Living Light Energy" describes seichim as an ancient Egyptian healing art that was "rediscovered" recently in New York. Reiki is largely a variant of aura balancing and the laying on of hands. Another leaflet, titled "Seichim Reiki—The Unifying Force," distinguishes seichim reiki from reiki: "Seichim Reiki aligns the complete chakra system with the seven fold nature of universal life energy. Traditional Reiki aligns only the upper four chakras with the three fold nature of universal life energy."

The **shadow sound therapy**© (SST) exhibit promoted the work of the method's originator, Jungian psychoanalyst and "sound healer" Elidé M. Solomont, Ph.D. Solomont is the author of the spiral-bound *You Are Who You Hate* (1993), according to which SST is a union of "music and talk therapies" whose philosophy is: People who listen to unfamiliar, unstructured, or inharmonic music face their own "shadow"; interpreting unconscious images can effect

healing. In a classified ad in the December 1994/January 1995 issue of *Free Spirit*, Solomont defined "shadow" as the "dark side that creates disappointments." On page 2 of her book, she defines her method as "a variation of guided imagery and music" that "involves listening in a relaxed state to selected abstract music, in order to elicit mental imagery, symbols, and deep feelings." She holds that "the creator" made the first sounds and that sound gave birth to the earth and human beings.

The **Multy-Tranz** is a wandlike, plug-in, acoustical "probe" invented by Brian David Andersen. It allegedly improves the quality and taste of any liquid, relieves headaches and tension in pets and animals, prevents hang-over from intake of beer or wine, stimulates and balances "chakra and acupuncture systems," and triples the "use" of any razor. I sampled treated and untreated water and preferred the latter. During a long-distance conversation with me on December 2, Andersen said he hoped that a battery-operated version would be available within two months.

Nu Energy Magnetics, of Ontario, Canada, markets a variety of "bio-magnetic" products, including the *SERENITY "2000" Weigh-Less Earrings*. These allegedly "combine the ancient science of acupressure with magnetism for a drug-free effective weight loss." A flyer states that magnets "supply the compatible magnetic energy which stimulates the body to heal itself."

Is the "therapeutic magnetism" promoted by Nu Energy passé? **Tachyon Energy Research, Inc.** markets *Takionic™* products, which allegedly combine Optimum Resonance Materials™ (ORMs) and "tachyon energy." These "enchanting," "State-of-the-Heart" products include *Takionic Water*, *Takionic Insoles*, the *Takionic Headband*, and the *Takionic Belt*. A leaflet defines ORM as

"special materials that emit photons (light) energy of a specific (4–16 millimicron) wavelength." This wavelength, according to the flyer, heightens "receptivity to Tachyon energy." The leaflet describes tachyons as: "particles that travel faster than light.... *The Most Abundant, Natural Source of Energy in the Universe*.... associated with... 'chi.'... the vital energy." It claims that "tachyon energy.... helps to promote greater harmony of spirit, mind and body." The very existence of tachyons is doubtful.

The Bottom Line

Apparently, the primary business of the Whole Life Expo is to increase the irrationality on which supplement "pushers," crackpot gadgeteers, and assorted religionists feed. Many intelligent people allege that some practices are worthwhile because they are at least subjectively beneficial—for example, dietary supplementation, hatha yoga, Qigong, religious observances, and trying to think positively with the help of pop-psychology books. However, implicit in this viewpoint is the position that the personal, superficial "end" justifies the means. Alternativists thus seem to imply that such practices should arouse no more skepticism than any art form. To be sure, some alternativist methods—e.g., aikido, aromatherapy, hatha yoga, *kum nye*, Qigong, tai chi, and Tragerwork—are *viewable* as art forms. But, while people may create watercolors, dance, play a musical instrument, or tend a garden for the sake of their health, they do not undertake such generic activities on the basis of extravagant claims and/or seductive theories that are full of holes. Such claims and theories are the stuff of alternativism—and define the allure of Whole Life Expos and the like.

Healthcare Esoterica

Here is another installment of the never-ending story of hard-to-swallow health-related methods.

References are within brackets.—J.R.

Alternative 12 Steps: Nontheistic and purportedly secular derivative of the Twelve Steps. The Twelve Steps—e.g., "[We] came to believe that a Power greater than ourselves could restore us to sanity"—are the variable basis of such programs as Alcoholics Anonymous. In *The Alternative 12 Steps* (1991), Martha Cleveland, Ph.D., a self-styled atheist/agnostic, and Arlys G., a longtime atheist, define the Twelve Steps as "a program for living, a program of action fueled by spiritual energy" that suggests "a system of holistic healing—a practical system of action" integrating "mind, body and spirit" (p. 5). Three of the authors' "Steps" affirmatively mention "spiritual resources" or "spiritual energy." [1]

Atlantean healing ray training: Instruction in an alleged prototypal healing system (including "Healing at a Distance"), provided by Michael E. Morgan. Morgan is a trance channeler for Yokar, the "Atlantean Scientist-priest." [2]

Biofeedback without machines: "Modality" for relatively stressless living and for using inner resources to discover

one's identity and potential, according to George E. Soroka in his book of the same name (p. 5). The term "biofeedback" refers to any method involving electronic devices wherewith individuals attempt to influence autonomic or muscular activities. Soroka's method joins biofeedback and a form of counseling that includes transactional analysis (TA).

TA is a system of psychotherapy created by psychiatrist Eric Berne, M.D. (who died in 1970), and the subject of two bestsellers that remain in print: *Games People Play: The Psychology of Human Relationships* (1964) and *I'm OK—You're OK* (1967). Fundamental to TA is the hypothesis that "ego states"—attitudes during transactions and corresponding sets of behavior patterns—fall into three categories: parental (preceptive or didactic, admonitory), adult (evaluative), and child-like (emotional and creative).

In his book, Soroka states that everyone is "plugged into the universe at large" (p. 4), that this (alleged) connection is a transcendent source of awesome power (*ibid.*), and that biofeedback enables people to begin an exploration of

"the cosmic energy force" (pp. 155–156). He also suggests that God is immanent in human beings (p. 144). [3, 4, 5, 6]

BodyWisdom (BodyWisdom therapy): Yogic form of body-oriented psychotherapy (see *"Alternative Healthcare: A Comprehensive Guide"*) promoted by Margo G. Steinfeld, M.A. One of its premises is that, as the body "aligns," physical and emotional blockages and the "life force" become free [7]

Chi-Therapy™ (Gestalt energy work): Apparent mixture of bioenergetics, Ericksonian hypnotherapy, Gestalt psychotherapy, inner child work, neuro-linguistic programming (NLP), and tai chi promoted by John Mastro, C.S.W., and Robin Mastro, M.F.A. (See "Meta-Therapy™," below.)

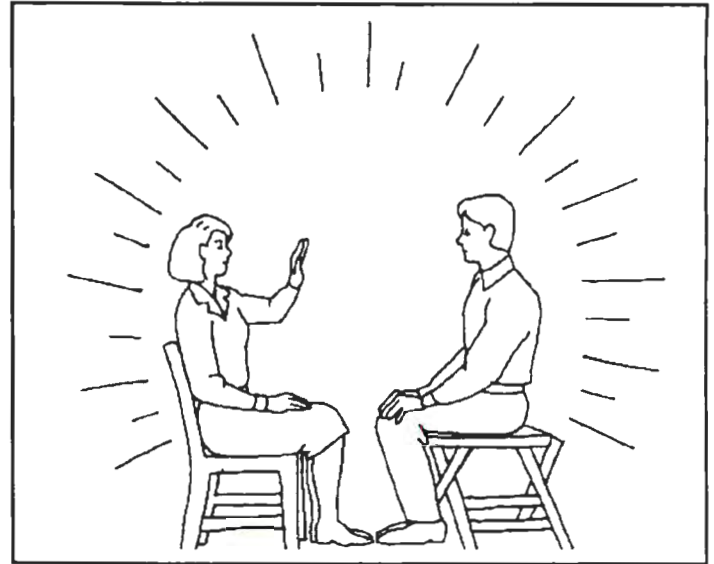
- **Bioenergetics** is an offshoot of Reichian therapy [see NF 11: 48–50, 1994].
- **Gestalt therapy** (which shares little with Gestalt psychology) is the brainchild of psychiatrist Frederick (Fritz) Perls (1893–1970), who posited five "personality layers." Supposedly, one reaches the "death layer" when "blocked feelings" and "psychic energy" condense and knot, and the "life layer" with the release of "blocked energies." [4, 8]
- **Inner child work** is a form of "psychotherapy" popularized by author and theologian John Bradshaw. Its main target is shame. [9]
- **NLP** is a quasi-spiritual "performance psychology" technique whose crux is "NLP modelling"—imitating the behavior of high achievers. [10]
- **Tai chi** is an ancient Chinese system of ballet-like exercises. Practice thereof purportedly facilitates the movement of *chi* ("life energy") through the body by dissolving blockages both within the body and between the body and the environment.

Chi-Therapy allegedly softens "frozen or constricted areas" of one's "energy field." [11]

Craniosacral-visceral balancing: Apparent spinoff of craniosacral balancing (see *"Alternative Healthcare: A Comprehensive Guide"*) practiced by Barbara Chang of New York City. Its postulates include the following. (1) One's body is a mirror of one's soul. (2) "When your Soul-Will is aligned with your Ego-Will, your inborn intuitive and artistic genius gloriously expresses its creativity!" (3) "People are extremely tender inside." Chang recommends the method for asthma, chronic pain, depression, migraines, whiplash, trauma due to incest, and TMJ (temporomandibular joint syndrome). [12, 13]

Emotional-kinesthetic psychotherapy (EKP): Mode of bodywork among whose three foci is "psychospiritual development." [14]

Hug therapy (therapeutic hugging): Variant of therapeutic touch put forward by Kathleen Keating Schloessinger, R.N., M.A., in the bestseller *The Hug Therapy Book* (1983) and a companion volume. It is a set of "techniques" based on the "friendly science" and "art" of "nonsexual" hugging. The "advanced techniques" include "Zen hugging" and guided imagery (e.g., imagining being hugged by a favorite friend who is a good hugger). The author posits a "spirit," a "life energy that heals," and a "place" at everyone's "center" where unadulterated love is discoverable. [15, 16]



Depiction of session in Johrei Fellowship flyer

Intuitive energy healing: Variant of shiatsu practiced by Linda Moskowitz, who recommends it especially for postpartum and postoperative conditions. [17]

Johrei: Supposedly purificatory method that defines the Johrei Fellowship, a worldwide interfaith association with a center in Manhattan. Purportedly, sessions take about twenty minutes, do not entail physical contact, and are always free of charge. Besides the method, the term "Johrei" denotes a paradisiacal doctrine and an alleged something that, through the focusing of "Divine Light," naturally eases physical and mental distress. Japanese businessman Mokichi Okada founded the movement in 1935. Okada allegedly had learned "God's Divine Plan" for the "New Age" through a series of divine revelations. Johrei's principles include the "Law of Purification," which holds that sickness is simply "Nature's" way of restoring health, and the "Law of Spiritual Affinity," which holds that innumerable "spiritual cords" dominate human existence. Another principle is that one's health and material resources are functions of one's "spiritual condition." [18, 19, 20]

Jungian past-life therapy: Combination of Jungian psychology and past-life therapy promoted by Roger J. Woolger. Jungian psychology embraces all quasi-psychological practices based on the theories of psychoanalyst Carl Gustav Jung (1875–1961), who held that studying the (alleged) "racial unconscious" could enhance understanding of the individual unconscious. "Past-life therapy" refers to any mode of "psychotherapy" centering on alleged previous humanoid incarnations of individual patients. [21, 22]

Meta-Therapy™: Reputed synthesis of Gestalt psychotherapy and "T'ai Chi energy work" originated by John Mastro, C.S.W. (See "Chi-Therapy™," above.) [23]

Pesso Boyden System/Psychomotor (psychomotor therapy, Pesso system): Form of "group therapy" involving bodywork, founded in 1961 by Albert and Diane Pesso. The method allegedly permits clients to discharge "energy held from past events." [14]

Shandra-chi: Mode of bodywork allegedly developed by Nancy Deutsch, C.S.W., Mitch Klicka, M.A., and "beings of light," including "Archangel Michael." The method supposedly releases the "energies" of stressful events from the cells of the human body. [24]

SHENSM (Specific Human Energy Nexus Therapy, SHEN therapy): Psychological form of so-called touch therapy. One of its premises is that an "emotional energy field" (also called the *chi field* and the *biofield*) permeates and surrounds the "physical body." [14]

Somasynthesis: Form of body-oriented psychotherapy (see "Alternative" Healthcare: A Comprehensive Guide) developed by chiropractor Clyde W. Ford and based partly on theories set forth by Carl Jung, Wilhelm Reich, and Roberto Assagioli (1888–1974), the originator of psychosynthesis. It supposedly promotes "spiritual health." [14]

Taoist healing imagery: Set of Chinese "healing techniques" advanced by Kenneth Cohen in his audiocassette of the same name. The "techniques" include: Tan Tien Breathing, which supposedly "stimulates the internal reservoir of energy"; Dragon and Tiger Meditation, whose purported purpose is to increase vitality; Golden Light Solar Meditation, whereby one allegedly absorbs "life energy from nature"; and "Spirit Goes on a Distant Journey." [25]

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15. K. Keating. *The Hug Therapy Book*. Minneapolis: CompCare® Publishers, 1983.

16. K. Keating. *Hug Therapy 2: The Wonderful Language of Hugs*. Minneapolis: CompCare® Publishers, 1987.

17. Ad on page 29 of the October/November 1994 issue of *To Your Health!* ("The Magazine of Healing And Hope").

18. Classified ad on page 98 of the October/November 1994 issue of *Free Spirit*.

19. Flyer (© 1992) received from the Johrei Fellowship in New York City on December 7, 1994.

20. A. Jack, ed. *The New Age Dictionary*. New York: Japan Publications, 1990.

21. 1994 gift catalog of the New York Open Center Bookstore, p. 3.

22. J.P. Chaplin. *Dictionary of Psychology/Second Revised Edition*. New York: Dell Publishing, 1985.

23. Display on page 23 of the October/November 1994 issue of *Free Spirit*.

24. Classified ad on page 20 of *Creations*, Vol. 8, No. 6

25. Winter 1995 "Sounds True Catalog" (Boulder, Colorado), page 13.

Supplement Bill Passes

Stephen Barrett

The Dietary Supplement Health and Education Act (DSHEA) of 1994, purported to "assure consumers access to all supplements on the market as long as they are not unsafe," was signed by President Clinton on October 25. Passage capped an aggressive three-year lobbying campaign by the health food industry, whose intention had been to cripple FDA regulation of its products. Senator Orrin Hatch (R-UT) had championed the bill, an early version of which *The New York Times* had described as "The 1993 Snake Oil Protection Act."

Three industry-related groups led the drive for passage: (1) the Nutritional Health Alliance (NHA), an umbrella organization formed early in 1992, which coordinated all segments of the supplement industry; (2) the National Nutritional Foods Association (NNFA), the major trade association of supplement manufacturers, distributors, and retailers; and (3) Citizens for Health (CFH), a "consumer" group organized by Alexander Schauss.

The most active opposing force was the Center for Science in the Public Interest (CSPI), a consumer-protection group concerned with accurate labeling of nutritional products.

To support their legislative agenda, proponents generated mail and phone calls from manufacturers, retailers, and distributors of health foods; patrons of health food stores; customers of mail-order companies; multilevel-marketing distributors; "natural health" practitioners; and bodybuilding and fitness enthusiasts who use supplements. This outpouring of messages was represented as a grassroots effort by consumers who wished to preserve "freedom of choice." Most of the barrage, however, came from supplement sellers and their confused customers.

To mobilize their troops, NHA and its allies harped on two themes: (1) if sellers don't act, most of them will be put out of business; and (2) if consumers don't protest, the FDA will deprive them of their right to buy vitamins.

To fire up consumers, the coalition portrayed the FDA as a Gestapo-like agency and urged supplement users to "write to Congress today or kiss your vitamins goodbye!" NHA even claimed, falsely, that "if the FDA has its way, you will have to go to a doctor for prescriptions for many supplements and then pay \$80 for a supplement which presently costs \$10 at a health food store." Many stores set up a "political action center" that displayed sample letters and stationery with which customers could write their own letters. Some stores offered discounts as an incentive to potential letter-writers. Many held a "blackout day," during which they exhibited empty shelves, draped "endangered" products in black and refused to sell them, or conducted other publicity stunts to reinforce their message. Virtually every periodical philosophically aligned with the health food industry published articles and editorials urging readers to write their legislators on this issue. Hundreds of radio talk shows, many with supplement companies among their sponsors, served as vehicles for health food industry propaganda. Several groups organized fax campaigns as well. As pressure from constituents mounted, a majority of Congressional representatives became co-sponsors of Hatch's bill or a similar one in the House.

The Senate passed a version of Hatch's bill on August 13, but Representative Henry Waxman (D-CA) prevented consideration by the House until Hatch agreed to make certain concessions. According to *Health Foods Business*, during the final two weeks of the Congressional session, CFH set up a toll-free number whereby members could call the Capitol switchboard. According to Alexander Schauss, House majority leader Richard Gephardt received over ten thousand phone calls on the issue and "other Congressmen complained that constituents were jamming their confidential fax machines with letters imploring them to pass the bill." The final "compromise" still favors the supplement industry.

Pandora's Pillbox?

DSHEA defines the term "dietary supplement," places the burden of proof of safety on the FDA, sets standards for the distribution of third-party literature, allows statements regarding "nutritional support" under certain circumstances, gives specifications for label information on ingredients and nutrients, and requires good manufacturing practices. It also mandates the establishment of an advisory commission and an office within the National Institutes of Health (NIH), both of which are discussed below. DSHEA's main provisions are:

- DSHEA defines "dietary supplement" as any product except tobacco that contains at least one of the following: (1) a vitamin, (2) a mineral, (3) an herb or botanical, (4) an amino acid, (5) a dietary substance "for use to supplement the diet by increasing total dietary intake," or (6) any concentrate, metabolite, constituent, extract,

or combination of any of the aforementioned ingredients. Products that meet this definition are excluded from regulation as a drug or food additive. (Drugs and food additives require premarket approval.) The 5th category apparently includes virtually any substance a manufacturer chooses to call a supplement. This provision is bad because it enables manufacturers to market large numbers of worthless substances as long as no direct health claims are made for them. (The claims, of course, will reach consumers through other channels.)

- The burden of proving safety is shifted from the manufacturers to the FDA. The FDA can object only if a product or ingredient presents a "significant and unreasonable risk of illness or injury" or poses an imminent safety hazard. DSHEA does not define "unreasonable risk"; defining it might require lengthy litigation. Before DSHEA, the FDA could ban worthless "dietary supplements" by regulating them as "unapproved food additives."
- Third-party literature can be used to promote supplements to consumers if: (1) they are not false or misleading; (2) they do not promote a particular manufacturer or brand; (3) they are presented with other items on the same subject, so as to provide "a balanced view of the available scientific information"; and (4) they are physically separated from supplement products when displayed in a store. In any proceeding to establish that such material is misleading, the FDA would bear the burden of proof. The terms "misleading" and "balanced" are not defined. Even if they were, there is no provision for enforcing the requirement that the information meet any standard. Nor does the FDA have the resources to monitor what takes place in individual stores. This provision greatly weakens the ability of the FDA to protect consumers from unsubstantiated claims used to sell products. In the past, promotional literature was considered a form of labeling, and therapeutic claims in such literature would render the product a "drug" subject to enforcement. If a dispute arose, it was the manufacturer's obligation to prove that experts generally considered the product safe and effective for its intended purposes.
- A claim may be made for a dietary supplement in the following forms: (1) a claim of benefit related to a classical nutrient deficiency that discloses the prevalence of such disease in the United States, (2) an accurate description of how a nutrient affects the structure or function of the human body, and (3) a general description of well-being resulting from consumption of a dietary ingredient. The statement must be truthful, not misleading, and accompanied by a prominently displayed disclaimer: "This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease."

This provision may enable manufacturers to flood the market with misleading statements about the function of nutrients in the body. (For example, a statement about the role of vitamin A in eye function, even if it is literally true, would be misleading if it implies that taking vitamin A supplements improves the vision of well-nourished persons.) DSHEA requires that manufacturers submit "structure/function" statements to the FDA within 30 days after first using them for marketing, but substantiation is not required. The FDA probably won't have the resources to challenge misleading claims of this type, and even if misleading claims are withdrawn, they will have been permitted to influence consumer purchases for significant periods of time.

DSHEA requires an independent Commission on Dietary Supplement Labels, composed of seven members with expertise and experience in the manufacture, regulation, distribution, and use of dietary supplements. At least three members must be "qualified by scientific training and experience to evaluate the benefits to health of the use of dietary supplements." However, members and staff of the Commission must be "without bias in the issue of dietary supplements." According to DSHEA, the Commission will review claims and statements about dietary supplements and make nonbinding recommendations for regulating the claims and statements, including those in marketing literature. The Commission's report is due in two years, and subsequent rule-making must be completed within two

years after the report is made. If it is not, the FDA dietary supplement regulations published on January 4, 1994, would be nullified.

DSHEA further calls for the establishment of an Office of Dietary Supplements within the NIH to: (1) explore the potential role of dietary supplements in the improvement of healthcare; (2) promote the scientific study of supplements for maintaining health and preventing chronic disease and other health-related conditions; (3) advise other federal agencies; (4) compile a database of scientific research related to dietary supplements and individual nutrients; and (5) coordinate NIH funding related to research on dietary supplements. The Act authorizes \$5 million for fiscal year 1994 to enable the Office to carry out its functions. Proponents of alternative healthcare have trumpeted the establishment of the NIH Office of Alternative Medicine as "government and scientific recognition" of their methods. Undoubtedly, the NIH supplement office will be abused in the same way by supplement promoters. And it appears that Senators Hatch and Tom Harkin (D-IA) are planning to promote additional pro-quackery legislation when Congress reconvenes.

Stephen Barrett, M.D., is the founder of *Nutrition Forum* and a board member of the National Council Against Health Fraud. The drive for DSHEA passage is described in more detail in *The Vitamin Pushers* (Prometheus Books, 1994), which was reviewed in the previous issue of *NF*. A copy of the Act plus the Congressional Research Service's 14-page report on DSHEA are available for \$5 from LVCAHF, P.O. Box 1747, Allentown, PA 18105.

BRIEFS

Alfalfa toxicity suspected. Victor Herbert, M.D., J.D., has warned that alfalfa tablets may contain l-canavanine, an amino acid capable of triggering autoimmune disease in susceptible individuals [*American Journal of Clinical Nutrition* 60:639-40, 1994].

Alternativist funding schemes proposed. According to a report in *Natural Foods Merchandiser*, a healthcare reform bill introduced in Vermont would permit people to establish a tax-deductible personal savings account to cover expenses not included by typical healthcare plans. These would include "vitamins and dietary supplements intended to remedy dietary deficiencies and promote wellness" and "subscriptions to publications whose primary purpose is to assist consumers to make well informed choices regarding their wellness and health-care." A proposal on the national level includes similar medical expense accounts that include coverage of dietary supplements and "alternative" practitioners.

Iron warning proposed. The FDA has proposed that oral products containing at least 30 mg iron per dose bear a warning. Since 1938, more than 110,000 incidents of iron ingestion by children have been reported to poison control centers, with at least 33 deaths.

Another marketing tool. The mission statement of *Better Nutrition for Today's Living* (BNTL) declares: "[Our] mission is to educate our readers on natural products carried in retail stores. This education process will move products off the store shelf via editorials designed to enhance the appropriateness and usefulness of health nutrition products....In the end, everybody wins: Consumers, Retailers, Manufacturers and BNTL." Many stores purchase copies of the magazine in large quantities for free distribution to customers. Its articles and editorials make unsubstantiated claims that would not be legal on product labels. Manufacturers wishing to capitalize on this can time their ads with the help of BNTL's editorial calendar, which indicates when the various categories of supplement ingredients will be featured. The publisher also recommends using BNTL "as part of your staff training program" and creating a special display each month with the products featured in the current issue. A recent mailing to health food retailers included the assertions: "60.3% of BNTL readers state that magazine education is their number one influence on new product purchasing" and "\$91.97 is the average amount each BNTL reader spends in natural food stores each month."

Chelation therapy update. A double-blind study has demonstrated that chelation therapy has no value in the treatment of intermittent claudication, a condition of impaired blood circulation to the legs [Circulation 90:1194–1199, 1994]. The study, conducted in New Zealand, involved 15 patients who received intravenous infusions of EDTA (a synthetic amino acid, purportedly the essential ingredient) plus vitamins, and 17 patients who received similar infusions without EDTA. The proportion of patients showing improvement in pain-free walking was similar in both groups.

FDA pesticide report. In 1993, the FDA checked 5,703 samples of domestic food and 6,463 samples of imported foods for which there was no reason to suspect problems and found that 64% of domestic foods and 69% of imported foods had no pesticide residues and only 1% of both groups foods had violative levels. The agency also checked pesticide levels in foods in which a problem was suspected and found violative levels in 17% of 223 domestic samples and in 11% of 362 imported samples. The FDA's annual Total Diet Study, based on an analysis of 1,556 food items representing the diets of American consumers, has concluded that dietary intakes of pesticides are well within accepted safety standards. Copies of the report, "Residue Monitoring—1993," are available from: Norma J. Yess, FDA, HFS-308, 200 "C" St., S.W., Washington, DC 20204.

Pharmacists attack homeopathy. District 7 of the National Association of Boards of Pharmacy (NABP), which includes Alaska, Idaho, Montana, Oregon, and Washington, has resolved that "homeopathy not become part of pharmacy's standard of practice until it is proven scientifically." The resolution was developed in response to increases in the number of pharmacies (especially chain pharmacies) that actively sell homeopathic products. NABP will consider the resolution at its national meeting in May 1995. The American Pharmaceutical Association's recently revised code of ethics does not consider whether it is ethical to sell products that don't work.

"Primetime" blasts "health" products. A segment titled "All Natural?" headed up the pre-recorded Thanksgiving Day edition of ABC's "Primetime Live." Its message was that some products for sale in health food stores "may be dangerous, even fatal." The segment featured an undercover investigation of a health food trade show in Baltimore. One vendor there cast oxygen as "vitamin O," the "most vital nutrient." Another stated that her products, liquid supplements styled "Herbs for Kids," do not cause "toxic buildups" and that it is impossible to overdose on them. The narrator, incidentally, categorized niacin as a mineral.

rBGH bill introduced. H.R. 4618, introduced by Congressman Bernard Sanders (I-VT), would require: (1) labeling of all milk and dairy products derived from cows injected with recombinant bovine growth hormone (rBGH), (2) government development of a test to detect synthetic rBGH in milk, and (3) a tax on farmers who use rBGH to indemnify farmers and communities economically hurt by the hormone's use. The FDA does not require labeling of these products because rBGH does not change the character of the milk but merely increases the amount of milk produced. H.R. 4618 is being spearheaded by the Pure Food Campaign ("an international boycott of genetically engineered foods"), a project of Jeremy Rifkin's Foundation on Economic Trends. Opponents of rBGH are framing their case as a consumer "right-to-know" issue. However, Rifkin's real agenda is to stop all forms of biotechnology. A recent mailing from the Pure Food Campaign states that H.R. 4618, "if passed, will mean the end of rBGH."

Sugar-hyperactivity claim squashed. The National Advertising Division (NAD) of the Council of Better Business Bureaus has upheld a complaint by the Sugar Association about a television ad for *Gobble Stix* turkey snacks. The ad had depicted a child bouncing erratically around a room, off the ceiling, walls, and furniture, as if he were a pinball. The visual was accompanied by the sounds of a pinball machine and breaking glass, and the question: "Too much sugar and junk in your kid's snacks?" The Association charged that the ad exploited the myth that eating sugar causes or contributes to behavioral disorders in children. After reviewing extensive scientific documentation, NAD agreed and noted: "The greater weight of evidence does not support the implied claim in the commercial that sugary snacks will or even may induce overly active or disruptive behavior in otherwise normal children." The manufacturer (Jerome Foods) contended that the ad was intended to be funny and was not an attack on sugar. But NAD felt that "since the notion of a 'sugar high' is a common parental belief...it would not be unreasonable to interpret the commercial's visual in this way."

Weight cycling downplayed. The National Task Force on the Prevention and Treatment of Obesity has come to the following conclusions. (1) There is no convincing evidence that human weight cycling ("yo-yo dieting") adversely affects body composition, energy expenditure, risk factors for cardiovascular disease, or future attempts to lose weight. (2) Obese persons should not allow concerns about weight cycling to deter them from trying to control their body weight [JAMA 272:1196–1202, 1994]. Reprints of the report are available from: Susan Zelitch Yanovski, M.D., Division of Digestive Diseases and Nutrition, National Institutes of Health, Building 31, Room 9A23, Bethesda, MD 20892.

FORUM

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School Daze

The Fast Track to Nutrition "Credentials"

Jack Raso

In early 1994, I began mapping out a study of unconventional sources of nutrition-related "credentials," especially correspondence courses. I launched the study on July 17. The American Council on Science and Health (ACSH) has scheduled publication of my report thereof for June, in its magazine, *Priorities*. In this article, I describe 16 of the 50 "credentialing" organizations I tried to contact.

I Was a Would-be Herbologist/Natural Hygienist/Naturopath/Theologian/Yogi

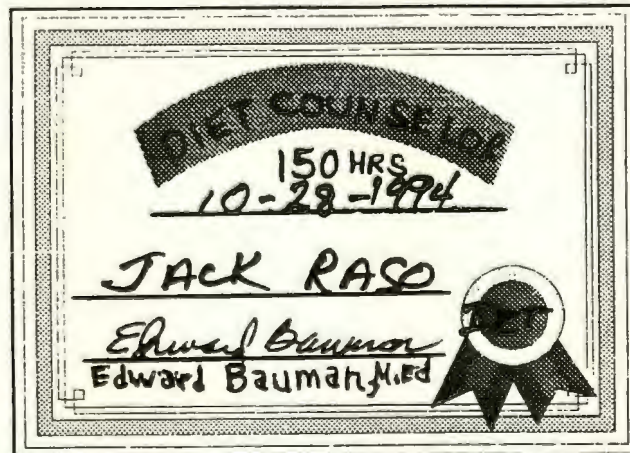
My study of nutrition-related "credentialing" organizations followed a long personal investigation of alternative health education. By "alternative health education," I mean: (1) indoctrination in alternative healthcare, (2) nontraditional didactic programs that afford such indoctrination, and (3) nontraditional didactic programs in science-oriented healthcare.

Education is a subject close to my heart, as I love learning but hate red tape and academic politics. I prize my self-orchestrated learning above the entirety of my formal education. Originally a humanities major, I studied at three vocational schools before I returned to college in 1981 to become a nutritionist. In 1985, I entered graduate school, where my focus was exercise physiology. Though I excelled as a student, overall my experiences with formal education, especially graduate education,

left me profoundly dissatisfied. Causes included favoritism and other forms of unfairness, inefficiency (e.g., busywork and soporific lectures), and professorial wheeling and dealing.

Such discontent, combined with occupational burnout (why be a "clerical dietitian" in a revolving-door "repair shop" when you can become a "healthcare holist" and buck, or chuck, the system?), spurred my seeking a suitable offbeat path to credentials between early 1989 and late 1992. During this period, I formally applied to an M.A. degree program in theology and to 10 unconventional didactic programs. I completed the admissions process for seven of the unconventional programs and obtained admission. (Admission to two of the three programs for which I had not completed the admissions process seemed well within reach.) The nine health-related program providers included: (1) the California Institute of Integral Studies, in San Francisco ("bridging Eastern and Western traditions of knowledge...joining the transpersonal and spiritual

dimensions of life with community service," according to its 1988-1990 catalog); (2) Emerson College of Herbology Ltd., a correspondence school in Ontario, Canada (see my book *Mystical Diets*); (3) the Himalayan International Institute of Yoga Science and Philosophy, in Honesdale, Pennsylvania; (4) Lesley College Graduate School (see below); (5) the Life Science Institute (see below); (6) the National College of Naturopathic Medicine, in Portland, Oregon; (7) The Union Institute (see *Mystical Diets*),



My potential certificate, depicted in an October 1994 mailing from the Institute for Educational Therapy (IET)

whose alumni include Shari Lieberman and Gary Null; (8) the University of Bridgeport, in Connecticut; and (9) Walden University (see below).

Disillusionment was the principal benefit of this pursuit. At its beginning, I felt that conventional healthcare was in need of a spiritual dimension. For most of the 4-year period, I was at once skeptical of and hopeful about alternative healthcare, which seemed to me commonsensical, humane, patient-centered, health-minded, nutrition-based, and acceptant of spirituality. Proponents take pains to nurture this image. In contrast, establishmentarian healthcare appears labyrinthine, inhuman, machine-centered, disease-minded, drug-based, and dismissive toward spirituality. To be sure, some of the shortcomings and overkills of conventional healthcare in the U.S. lie along these lines.

However, I concluded: (1) that conventional healthcare does not need spirituality but more reasonableness and a better connection with science, and (2) that alternative health education, on the whole, has a very poor connection with science. Indeed, some of the methods into which organizations indoctrinate would-be practitioners have a plainer connection with religion. (For examples of such methods, see this issue's "Healthcare Esoterica.")

Who's Minding the (Academic Department) Store?

Accreditation is an especially thorny matter as regards alternative health education. Academic accreditation is recognition, by an agency or association, that an educational institution, university school, academic department, or didactic program meets the reviewing body's administrative, organizational, and fiscal criteria. The many "accrediting bodies" or "accrediting groups" in the United States range from the spurious to the reputable. The U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation (CORPA), a non-governmental organization, autonomously "recognize" (validate) some sources of accreditation; i.e., they accredit some of the "accreditors." Accreditation by a recognized entity indicates only relative organizational soundness and intra-disciplinary programmatic soundness. It nonetheless at least weeds out fly-by-night and financially shaky organizations. Thus, absence of recognition by either the Secretary of Education or CORPA is grounds for suspicion. However, by no means does accreditation by a recognized entity import that the teachings of an organization have a scientific basis. Recognized accrediting entities comprise: (1) six regional accrediting bodies, which have the authority to accredit colleges and universities in respective regions of the U.S.; and (2) a motley group of more than fifty "national, professional and specialized" accrediting bodies. The latter group includes accrediting entities for schools that specialize in and endorse Christianity, Judaism, chiropractic, naturopathy, and traditional Chinese medicine.

Unconventional Nutrition Education: The Good, the Bad, and the Abysmal

Below are descriptions of some of the organizations from which my associates and I have received printed material. Except for comments, the descriptions: (1) merely convey questionnaire responses and/or representations made in promotional literature we received since mid-July 1994, (2) do not cover undergraduate degree programs, and (3) do not cover programs without a distinct, alleged, or optional relation to nutrition. In the "comments" sections, the term "accredited" means "possessing accreditation by an entity recognized by the U.S. Secretary of Education or CORPA"; and "unaccredited" indicates lack of such accreditation. An asterisk preceding an organization's name indicates receipt of questionnaire responses from that organization. Information on prerequisites for admission and requirements for completion of programs is not exhaustive but includes all important nonfinancial matters.

- **AMERICAN COLLEGE OF NATURAL HEALTH.** Divisions include The Clayton School of Natural Healing (TCS), founded in 1980, and The American Holistic College of Nutrition (AHCN). TCS and AHCN share a toll-free number, a fax number, and an address in Birmingham, Alabama. Both are "members" of the World Association of Universities and Colleges (W.A.U.C.), a "global accreditation association" founded in 1991. TCS offers "home study" programs leading to the degrees of Doctor of Naturopathy (N.D.), Doctor of Holistic Health (H.H.D.), and Doctor of Science (D.Sc.). AHCN's correspondence programs include an M.S./Ph.D. program and a B.S./M.S./Ph.D. program. Completion of either Ph.D. program requires a nutrition-related "dissertation" of 7,500 to 10,000 words. Prerequisites for admission: *at most*, a high school diploma or equivalent.

Comments: The American College of Natural Health, TCS, and AHCN are unaccredited. A mailing from TCS and AHCN postmarked November 2, 1994, included an undated memo from Dr. Maxine Asher, president of the W.A.U.C. (which recently moved from Gretna, Louisiana, to Las Vegas, Nevada). It stated: "The W.A.U.C. is at this time seeking approval from numerous ministries abroad as well as from the United States Office [sic] of Education....By the end of 1994, many such approvals will be secured." On January 13, I called the W.A.U.C. to inquire if the "Office of Education" had granted approval. The woman who answered the phone asked me to convey my question through Dr. Asher's voice mail. I did so and provided

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my phone and fax numbers and my address. I have not received a response from Asher. Later that day, I called TCS/AHCN and asked the woman who had answered the phone if the W.A.U.C. accredits TCS. She replied that the association accredits both TCS and AHCN. According to *Bear's Guide to Earning College Degrees Non-Traditionally* (1992), AHCN was founded in the 1980s.

- ***AMERICAN COLLEGE OF NUTRIPATHY (ACN)**, Scottsdale, Arizona. Founded in 1976, ACN offers three certificate programs by correspondence, designated "Basic Nutripathy," "Advanced Nutripathy," and "Nutripathic Practitioner." These are accredited by the International Accrediting Commission for Schools, Colleges and Theological Seminaries. In late July 1994, the three programs had 1,000 enrollees and three faculty members (all full-time).

Comments: ACN is unaccredited. Nutripathy is a theistic, vitalistic "science of health" that involves "biochemical analysis" of saliva and urine, color therapy (chromotherapy), food combining, hair analysis, and a variant of Bach flower therapy. In the tenth edition of *Nutripathy...The Final Solution to Your Health Dilemma* (1978), nutripathy's founder, Gary A. Martin, D.N., D.Sc., Ph.D., Th.D., defined "chromotherapy" as "the use of color to apply appropriate healing vibrations to weak and damaged organs." The term "food combining" refers to any dietary practice whose premise is that a meal's healthfulness depends considerably on the compatibility of its macroscopic components and/or the sequence of ingestion. Bach flower therapy is a quasi-homeopathic system. Martin was the questionnaire respondent for ACN and North American University (NAU; see below). His title at both organizations is "Exec. Trustee." ACN and NAU share a toll-free number with HealthWatchers System®, which markets dietary supplements by mail. ACN and HealthWatchers also share a P.O. box.

- **AMERICAN INSTITUTE OF HOLISTIC THEOLOGY (AIHT)**, Youngstown, Ohio. Nutrition-related correspondence programs include Doctor of Divinity (D.D.), Doctor of Naturology (D.N.), and one of three Ph.D. curriculums in metaphysics. Prerequisites for admission: *at most*, a high school diploma or equivalent. Requirements for completion of the aforementioned programs: (1) a grade of at least 80% in all courses and (2) a 20-page dissertation that does not draw from required reading, on a "metaphysical topic" of the student's choice.

Comments: The institute is unaccredited. According to the course catalog AIHT mailed to me in November 1994, "Naturology" is a "religious science of health" whose premise is that "God created humans with certain dietary

and environmental needs, and placed the fulfillment of those needs in the natural substances and environment."

- ***BERNADEAN UNIVERSITY**, Woodland Hills, California. Founded in 1954, Bernadean offers programs leading to certificates, diplomas, and degrees in nutrition, "herbology," homeopathy, weight control, and naturopathy (including a 10-course Doctor of Naturopathy program). In late December 1994, Bernadean's nutrition-related programs had 150 enrollees and 10 faculty members (three of whom were full-time).

Comments: This is an admittedly unaccredited correspondence school that had originally operated from Las Vegas and moved to Van Nuys, California. A 1977 court order had prompted this relocation. The Doctor of Naturopathy program includes courses in acupuncture, "alternative" cancer "therapies," Bach flower therapy, homeopathy, iridology, and reflexology. The acting dean's response was sketchy. A poorly photocopied pamphlet I received from the school circa 1992 offered correspondence courses leading to designations such as: Alternative Cancer Specialist, Cancer Researcher, Certified Dietitian, Certified Nutritionist, Certified Homeopath, Homeopathic Physician, Naturopathic Physician, and Certified Iridologist. Doctoral degrees available included: Doctor of Homeopathy (H.D.), Doctor of Iridology (I.D.), Doctor of Naturopathy (N.D.), and Doctor of Preventive Medicine (P.M.D.). For the lowdown on Bernadean, see *The Vitamin Pushers* (Prometheus Books, 1994).

- **CALIFORNIA COLLEGE FOR HEALTH SCIENCES (CCHS)**, National City, California. CCHS offers an "independent study" program with an emphasis in Community Health Administration and Wellness Promotion. It leads to a Master of Science degree. CCHS is accredited by the Accrediting Commission of the Distance Education and Training Council. Prerequisites for admission: (1) a baccalaureate from an accredited college or university and (2) completion of an introductory psychology course. Requirements for completion of program: completion of 36 graduate semester credits, at least 27 through CCHS. The two nutrition-related courses in the program are optional.

Comments: CCHS is accredited. It was founded in 1976 (according to the 1994-95 "Directory of Accredited Institutions" of the Distance Education and Training Council), in 1978 (according to the *1995 Higher Education Directory*®), or in 1979 (according to *College Degrees by Mail* and the 11th edition of *Bear's Guide to Earning College Degrees Non-Traditionally*). According to the Graduate Studies Catalog I received in 1990 or 1991, the required courses included three nutrition-related courses: a 3-credit course and two 1-credit courses. The graduate program seems creditable.

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- ***GREENWICH UNIVERSITY, Hilo, Hawaii.** Founded in 1972, Greenwich offers "individualized" correspondence programs leading to master's and doctoral degrees in all fields. The university has applied for accreditation to the Pacific Association of Schools and Colleges. Basic prerequisites for admission: (1) a written self-description, and (2) letters of reference from people who know the applicant well, including at least one from a person conversant with the applicant's career. Prerequisites for admission to a master's degree program: a bachelor's degree. Prerequisites for admission to a doctoral program: earned bachelor's and master's degrees or: (1) an earned bachelor's degree, (2) considerable academic and professional experience in the field of the proposed doctorate, and (3) enrollment in a Greenwich master's degree program that largely involves writing a thesis of 40–60 pages or submitting a "comparable" collection of shorter papers. Requirements for completion of doctoral program: (1) completing "coursework" and (2) completing a dissertation or "comparable major project." In late July 1994, the university did not have any full-time faculty members.

Comments: The university is admittedly unaccredited and offers "distance education" only. Neither CORPA nor the U.S. Secretary of Education recognizes the Pacific Association of Schools and Colleges. See "National Institute of Nutritional Education," below.

- ***INSTITUTE FOR EDUCATIONAL THERAPY (IET), Cotati, California.** Founded in 1982, IET offers a 550-hour Nutrition Consultant Training Program, which comprises three certificate programs that students may pursue on-site or by correspondence: (1) a 150-hour Diet Counselor program, (2) a 150-hour Nutrition Educator program, and (3) a 250-hour Clinical Nutrition Consultant Program. The institute is accredited by the Council for Private Postsecondary and Vocational Education, in Sacramento, California. Basic prerequisites for admission: (1) age of at least 18 years, and (2) good health. Prerequisites for admission to Nutrition Educator program: completion of Diet Counselor courses. Prerequisites for admission to Nutrition Consultant program: completion of Diet Counselor and Nutrition Educator courses. Requirements for completion of programs: (1) submitting to a 15-minute telephone critique by an instructor after completion of each assignment (i.e., a total of 1½ hours of oral evaluation), and (2) obtaining a grade of at least 75% on a written final exam. Additional requirements for completion of Clinical Nutrition Consultant program: (1) a "research paper" relevant to at least one case study of a personal client, and (2) oral presentation of a case history the student has taken. The description of the required Diet Counselor course titled "Allergy and Immune Support" includes the statement: "The use of specific foods, fresh juice, herbs, broth, and cleansing aids will be introduced as well as specific programs for cleaning and healing the organs of elimination." The "required materials" in the Nutrition Educator program include a "Hair Analysis."

By mid-January 1995, IET had given Diet Counselor certificates to 120 people, Nutrition Educator certificates to 45, and Nutrition Consultant certificates to 20. Then, the program had 75 enrollees and eight faculty members (three of whom were full-time).

Comments: IET is unaccredited. I received two mailings from IET that included a program catalog, both in January. The first, postmarked January 13, was addressed to *Nutrition Forum*. The second, postmarked January 19, was addressed to a relative of mine, who had signed a check for \$4.00 for the catalog. The catalogs differed.

- **INTERNATIONAL SOCIETY OF NATUROPATHY (ISN), Los Altos, California.** Founded before 1960, this "fraternal, closed" society offers correspondence courses leading to master's and doctoral degrees in nutrition, "natural nutrition," nutritional science, and naturopathy. Prerequisites for admission: membership in ISN. Requirements for completion of programs: (1) 180 credits (master's degree) or 240 credits (doctorate), and (2) a thesis of at least 2,500 words.

Comments: On July 17, 1994, I mailed identical requests for information to ISN and its "sister college," Harmony College of Applied Science, which shares an address with ISN. I have not received a response from Harmony. In late 1989, I received a catalog from Harmony that offered a correspondence curriculum leading to a Ph.D. degree in nutrition or nutritional science. Both ISN and Harmony are unaccredited.

- **LASALLE UNIVERSITY, Mandeville, Louisiana.** LaSalle offers a Ph.D. program leading to the designation "Certified Holistic Practitioner" (CHP), a Ph.D. program in nutrition counseling, and a Doctor of Naturopathy (N.D.) program. The university, "one of the world's largest Christian Institutions," is accredited by the Council on Postsecondary Christian Education (COPCE), in Washington, D.C. Prerequisites for admission: "Sixty (60) units, the equivalent of 50% of the credit needed for a bachelors [sic] degree, or the passing of a Special Admissions Exam."

Comments: According to *Bear's Guide to Earning College Degrees Non-Traditionally* (1992), this unaccredited correspondence school was founded in 1986. LaSalle also offers "external degree" programs at the master's and doctoral levels in health services management and customizable fields, e.g., "Nutrition & Fitness." On an introductory audiocassette I received from the school before the study began, someone stated:

The extension education outreach ministry offers theocentric, nonsecular programs to enhance world solutions.... [A]t LaSalle, we assess and award credit for the competencies and skills gained through work and life experience.... But the big problem, for some students, is procrastination. These students want to get into the program.... But they keep putting it off.... [P]rocrastination causes more lost opportunities than anything.... God bless you.

• LESLEY COLLEGE, Cambridge, Massachusetts. Through its Graduate School, Lesley offers an Independent Study Degree Program that is "individually designed" and leads to an M.A. or M.Ed. degree, or to a Certificate of Advanced Graduate Study (C.A.G.S.), in customizable fields. Prerequisites for admission to a master's degree program: a bachelor's degree. Prerequisites for admission to the C.A.G.S. program: a master's degree. The program may include apprenticeships, courses, "directed" readings, fieldwork, lectures, and tutorials, and it requires completion of a "major" project, such as a thesis or book.

Comments: Founded in 1909, Lesley is accredited by a regional accrediting body. I obtained admission to its Independent Study Degree Program in 1990. My faculty advisor, a registered dietitian, said she planned to include a naturopath on my three-person faculty team. A brochure I received in February describes her as a practitioner of "clinical/holistic" nutrition who "actively pursues" interests in "cross-cultural healing," dream interpretation, "Focusing" (see this issue's "Healthcare Esoterica"), and spirituality.

• *LIFE SCIENCE INSTITUTE, Inc., Austin, Texas. Founded in 1976 or 1978, the institute offers a "Certification Course in Natural Hygiene" through a company called *Feeling Fit...for Life!*®. This 106-lesson "independent study" program in "health science" leads ultimately to a "Certificate of Completion as a Natural Hygienist." After successful completion of the first 54 lessons, students receive a "Certificate of Proficiency." Prerequisites for admission: none. Requirements for completion of program: taking 20 tests and submitting them for grading. In late August 1994, the program had 500 enrollees. In mid-January, the program had more than five hundred enrollees, over four thousand graduates, and 17 faculty members (12 of whom were full-time). In January, program accreditation was "in process" (sic).

Comments: *Feeling Fit...for Life!* and the Life Science Institute responded separately to questionnaire items, in July 1994 and January 1995 respectively. Natural Hygiene is a health-centered philosophy of "natural living" whose ideal diet consists of uncooked, unprocessed foods from the plant kingdom [see NF 7:33-36, 1990]. "Feeling Fit" is the latest incarnation of an organization whose former names, manifestations, and affiliates include: American College of Health Science (Austin, Texas), American Health Sciences Institute (Manchaca, Texas), American Wellness Retreat (Burnet, Texas), College of Life Science (Austin), Freedom Associates (Austin), Health Enterprises (Austin), Health Excellence (Manchaca), Health Excellence Systems (Manchaca), Health Watchers' Wellness Network, Life Science (Manchaca), and Life Science Institute (Austin and Manchaca). The objection of the D.A.'s office to the use of the word "college" on the school's letterhead prompted a name change in 1983, to "Life Science Institute."

In an undated form letter I received in February, the institute's president stated: that the company would soon offer the correspondence course as the "Health Facilitator, Level I certification program"; that the institute's goal was to

offer Level II by June 1995; and that the institute was also shooting for an operational degree program by early 1996. In quasi-personalized letters dated December 27, 1994, January 5, 1995, and January 17, 1995, the Director of Student Services stated: "Sections of the course have been translated into French and are part of the curriculum at the University of Paris School of Medicine...to be taught to its medical students."

On May 13, 1986, Harvey Diamond, coauthor of the bestseller *Fit for Life* (1985) and recipient of a Ph.D. degree from the American College of Health Science, appeared on ABC News' "Nightline" and stated that the "University of Paris School of Medicine" had just transcribed the "entire course" offered by his alma mater and was "using it for" its 5,500 medical students. In a letter to Ira Milner, R.D., dated February 22, 1988, T.C. Fry, today Educational Advisor at the Life Science Institute, attested to the inclusion of the course in the medical curriculum of the University of Paris. However, the director of the University of Paris Medical School had told Milner, in a letter dated November 19, 1987:

We have never heard of the so-called "American College of Health Sciences." We have no knowledge of a publication of our School which would be a transcription of the "health and nutrition course" of the so-called "American College of Health Sciences."...I will order an inquiry concerning this problem.

• NATIONAL INSTITUTE OF NUTRITIONAL EDUCATION (NINE™), Aurora, Colorado. Founded in Florida in 1980, NINE offers a 180-hour Independent Studies Program that leads to a certificate and eligibility to apply for certification as a Certified Nutritionist (CN)™. Textbooks include *Alternative Medicine: The Definitive Guide* [see NF 11:57, 1994] and *The Turning Point*. Prerequisites for admission: a college degree (waived until 1996). Requirements for graduation and certificate (prerequisites for CN certification): (1) completion of all program courses, (2) a cumulative GPA (grade point average) of 2.5 (4.0 = "A"), and (3) an average grade of at least "C+" on exams. Requirements for CN certification: (1) successful completion of 5 or 6 exams and (2) one year of experience in "dealing with the public," managing people who do so, or holding a health-related administrative position. The School Director (James R. Johnson, Ph.D.) can waive CN certification requirements. "The institute teaches about the values of fasting, detoxification, uses of nutritional supplements above the RDA, accessory nutrients and the use of herbs and herbal therapies." NINE's graduating class of 1994 comprised 36 people.

Comments: NINE is unaccredited. On page 249 of *The Turning Point: Science, Society, and the Rising Culture* (1983), physicist Fritjof Capra, Ph.D., declared: "Even more important than the detailed composition of our diet are the following three requirements: our foods should be *natural*, consisting of organic food elements in their natural, unaltered state; they should be *whole*, complete and unfragmented, neither refined nor enriched; and they should be *poison-free*, organically grown, free from poisonous chemical residues and additives."

Under the heading "Affiliations" in its 1994–1995 "Student Catalog," NINE claims an "articulation agreement" with Regis University, a prestigious Catholic institution in Denver, Colorado. However, on February 9, in a message on my answering device, Karen Weber, Assistant to the President of Regis, stated: "Actually, Regis University never had an articulation agreement with NINE." She defined "articulation agreement" as "an agreement between two institutions of higher education, typically one lower division [and] one upper division, where certain lower-division courses taken at the lower-division school will apply toward degree requirements at the senior institution."

According to *The Vitamin Pushers*, NINE's founder and president, James R. Johnson, claimed a Ph.D. degree from an unaccredited organization, "Occidental University...in St. Louis." *Bear's Guide to Earning Non-Traditional College Degrees* (1988) stated that "Occidental University of St. Louis" is the original name of the International Institute for Advanced Studies. The 11th edition of *Bear's Guide to Earning Degrees Non-Traditionally* (1992) states that "Occidental University" is the institute's original name, that the institute was "begun" in St. Louis in 1972, and that it "evolved" into Greenwich University (see above). The latter edition of *Bear's Guide* listed both the International Institute for Advanced Studies and Greenwich University as operational schools. (According to a 1989 catalog I received from the former organization, it was founded in Clayton, Missouri, in 1972; the catalog and the 10th edition of *Bear's Guide* gave the same Clayton, Missouri, address.) *Bear's College Degrees by Mail* (1992) describes the institute as Greenwich University's "predecessor."

- ***NORTH AMERICAN UNIVERSITY (NAU), Scottsdale, Arizona.** Founded in 1992, NAU offers three nutrition-related graduate programs through "off-campus study": (1) a "wellness science" program leading to an M.S. degree, (2) a "Doctor of Wellness Science" program leading to a D.Sc. degree, and (3) a "Doctor of Wellness Science Philosophy" degree program. The programs are accredited by the International Accrediting Commission for Schools, Colleges and Theological Seminaries. Prerequisites for admission: (1) a high school diploma or equivalent, (2) reaching 18 years of age by the end of the third month following admission, (3) literacy in English, (4) "good moral character," and (5) agreement with the "mind-body-spirit" philosophy of NAU. Students may receive credit for preadmission "education, life experiences, military experiences, etc." In late July 1994, NAU's nutrition-related programs had 50 enrollees and two faculty members, both full-time.

Comments: NAU is unaccredited. It also offers a "Bachelor of Wellness Science" (B.S.) degree program, which is nutrition-related. See "American College of Nutripathy," above.

- **ST. MARTIN UNIVERSITY (University of St. Martin).** The university's "External Degree Program" is "administered

from" Reynosa, Republic of Mexico. The "School Mail Center" is in Ada, Oklahoma. Founded in 1984, St. Martin is accredited by the InterAmerican Association of Postsecondary Colleges and Schools. It offers "custom tailored" degree programs as well as "off-campus" programs in nutritional science and "holistic health science" that lead to master's and doctoral degrees. For example, the university "confers" the degree of "Doctor of Nutrition." Prerequisites for admission to master's degree programs: (1) a bachelor's degree (obtainable by correspondence through St. Martin) and (2) at least 30 "major course hours" (which the applicant may pursue through St. Martin). Prerequisites for admission to doctoral programs: (1) a master's degree and (2) at least 30 "major course hours" at the master's level (which the applicant may pursue at St. Martin). Requirements for graduation: (1) a "satisfactory" grade in all required courses, and (2) a "professional thesis." Duration of programs: approximately 12–18 months per degree. Courses in the College of Nutritional Science include: Food Combinations, Hair Mineral Analysis, Herbology I and II, Macrobiotics, Natural Dietetics, and Reflexology I. Courses in the College of Holistic Health Science include: Ayurvedic Therapy, Enzyme Therapy, Juicing Therapy, Oriental Herbology, Psycho-Cybernetics (sic), Tissue Cleansing, and Zone Therapy.

Comments: Courses in the College of Health Science include Chelation Therapy, Homeopathy, Naprapathy [see NF 11:63–64, 1994], Naturopathy, Taichiology (sic), and WALTER Therapy. The School of Holistic Therapy offers a correspondence program leading to an "Associate of Science Degree in Holistic Science" and "registration as a Practitioner of Holistic Therapy." There are no prerequisites for admission. The five courses in this program are: Collateral Therapy, Herbal Therapy, Iridology, Meridian Therapy, and Zone Reflexology.

- **WALDEN UNIVERSITY, Minneapolis, Minnesota.** Through its Institute for Advanced Studies, Walden offers a customizable program leading to a Ph.D. degree in health services. Prerequisites for admission: (1) a master's degree from an accredited institution or (in exceptional cases) submission of a "prior learning portfolio," (2) at least 3 years of relevant professional experience, and (3) attendance at an admissions/orientation workshop (A/OW), which begins on a Friday evening and ends on the afternoon of the following Sunday. Requirements for completion of program: (1) fulfillment of a "learning agreement," an individualized study plan within a Walden curricular framework; (2) submission of a dissertation; (3) oral presentation thereof; (4) attendance at one 3-week summer session or two 2-week summer sessions; and (5) attendance at one 4-day "regional intensive" session per 12-month period of enrollment.

Comments: Founded in 1970, Walden is accredited by a regional accrediting body. I applied to the aforementioned doctoral program in 1992, and I received an invitation to attend an A/OW. I have not discerned any cause for concern about the program or the university.

General Comments

Later this year, *NF* will feature a detailed report of my study of nutrition-related “credentialing” organizations. A few personal remarks probably are in order here. First, during four years of seeking a suitable nontraditional path to credentials, my desire for a streamlined application process and a streamlined didactic program overrode my desire for

a spiritual dimension. Regrettably, it seems that most streamlined health-related programs with streamlined preadmission procedures harbor unscientific teachings. Second, I believe that a distinctly nutrition-related doctorate (e.g., NutritionD) would invigorate the profession of clinical dietetics and thus weaken pseudocredentialism. It seems to me that, while nutritionist licensing has merit, the public wants “nutrition doctors,” not licensees or registrants.

HEALTHCARE ESOTERICA

Here's another batch of mystical alternative “health” methods. References are in boldface within brackets.—*J.R.*

Alchemia: Form of channeling that allegedly involves activating “Universal Fifth Dimensional Energy.” [1]

Alchemia breathwork: System that allegedly transforms “karmic situations” and, through “focused use” of the “Breath” and the “Life Force,” frees “suppressed energy.” It involves alchemia® heart breath, purportedly an initial step toward discovering “energy blockages.” [2]

Alchemical synergy®: Form of “hypnotherapy” whose purported goal is to develop the “optimum potential” of individuals by connecting them with their respective “inner master.” [1]

Barbara Brennan healing science: “Spiritual” system concocted by Barbara Ann Brennan, author of the bestseller *Hands of Light: A Guide to Healing Through the Human Energy Field* and *Light Emerging: The Journey of Personal Healing*, both published by Bantam. Brennan, who holds a master’s degree in atmospheric physics, founded the Barbara Brennan School of Healing, in East Hampton, New York, in 1982. Her system is a form of so-called energy field work that involves “Core Star healing” and “Hara healing.”* According to the 1994–1995 *Holistic Health Directory & Resource Guide*, “the healer works to clear the client’s [energy] field of unhealthy and blocked energies, charge depleted areas, repair distorted patterns, and balance the entire field.” [3, 4] *Hara” is a Japanese word that some spiritualists use to denote the *tanden*—the alleged seat of *ki* (supernatural “energy”) in humans, slightly below the navel.

Barefoot shiatsu massage: Variant of shiatsu practiced by Viola M. Timbers, R.N., B.A., of New York City [5]. During a phone conversation with me on January 29, Ms. Timbers stated:

[Shiatsu]...really is acupuncture without needles. But, in barefoot shiatsu, I use my feet a little bit. I can stand on the back, but I support my weight on the chair; and I walk on my hands. I walk on certain part—I use my feet on certain parts of the body. But I also use my palms, my hands, my palms, my thumb, and my elbows and knees. I use various parts of my body to apply pressure to the, uh, what you call the meridians....

BEYOND MEDICINE: “Multi-dimensional approach” promoted by Shoshana Margolin, M.A., N.D., D.H.M. It involves “full-spectrum homeopathy,” “holographic bio-analysis,” “holistic girth control,” and “physical & nutritional re-balancing.” One of its premises is that people are “multi-dimensional Beings.” [6]

BodyMind therapy: System taught by The BodyMind Academy, in Bellevue, Washington. It comprises: (1) BodyMind breathwork, which includes rebirthing; (2) BodyMind massage; (3) BodyMind counseling hypnotherapy, which involves Jungian psychology and neuro-linguistic programming (NLP); and (4) BodyMind shiatsu, which purportedly involves pulse reading. [7]

Ching Lo (meridian therapy): Alleged external stimulation of *Qi* (*chi*) and “Blood” in diverse ways, including acupuncture, cupping, moxabustion, scraping, and application of “acu-powder,” electricity, herbs, or magnets. [8]

Choi kwang do: Modern, noncompetitive martial art whose major interests are health, human potential, and self-defense. Its basis includes “chiropractic medicine,” and its teachings encompass hatha yoga, “herbology,” “holistic” nutrition, and shiatsu. [9, 10]

The Clean-Me-Out Program™: Neo-Christian system of “self-healing” developed principally by Richard Anderson, N.D., N.M.D. Two herbal supplements constitute its backbone: *Chomper*, whose eleven herbs include cascara sagrada (a laxative) and lobelia (ingestion of which is risky); and *Herbal Nutrition*, whose ten herbs include alfalfa, comfrey (which is poisonous), horsetail (a weak diuretic), and licorice root. Besides these and other supplements, the program involves enemas and avoiding intake of meat and dairy products. In the fourth (second revised) edition of *Cleanse & Purify Thyself* (1994), Anderson states that “cooked, frozen, canned and processed foods...drain the life force from the body.” In Chapter 9, he describes a “profound Divine experience” wherein a female “Divine Being” filled him with “information.” He states that purification is a “guaranteed entrance” into heaven and that people who are willing to purify themselves “shall have the help of God’s mightiest messengers and, if necessary, legions of angelic beings.” [11, 12]

Core transformationSM (core transformation process): Ten-step “self-help” technique pioneered by Connirae Andreas, Ph.D. (with Tamara Andreas), in *Core Transformation: Reaching the Wellspring Within*. It posits an “inner being,” “inner self,” “inner essence,” or “core self.” In 1994, Advanced Communication Training, Inc., billed the technique as an amazing breakthrough in the fields of neuro-linguistic programming (NLP), psychology, and religion that is “useful with” nail-biting, trauma, and weight loss. [13]

Dimensional clearing: "Process" allegedly designed to clear the human "energy field" of "external elements" that are not part of the self, such as "Lost Souls," "Thought Forms," and "fragments" of other people. [14]

Energis™: "A profoundly intuitive yet practical 'hands-on' subtle energy process that gently and naturally stimulates the electrical systems and magnetic fields of the body," according to the Health Optimizing Institute's classified ad in the 1992-1993 *Holistic Health Directory* (p. 125). The institute is in Del Mar, California. The ad referred to "Energis™ Training & Research." On December 21, 1994, I used the institute's "800" voice mail to request printed information about the method. The next day, Gary Houston (or Huston) stated on my answering device: "That program is shelved or on the back burner, so to speak, because we're involved in some other, newer developments in energy medicine....I just don't have anything [i.e., literature on Energis] to pass along. That *Holistic Health Directory*, I think, is a couple of years old. It's a very fast-moving, fast-changing field."

Etheric release: Form of "energy work" whose premise is that restricting emotional expression can cause malfunctions in one's "physical body." [2]

Focusing (focusing-therapy): "Natural" stepwise system of "personal growth" based on the work of psychology professor Eugene (Gene) T. Gendlin, Ph.D., author of *Focusing* (1981) and *Let the Body Interpret Your Dreams* (1986). It involves dreamwork and inner child work (see "*Alternative Healthcare: A Comprehensive Guide*"). The purported effects of Focusing include: direct contact with the (allegedly palpable) "wisdom" of one's body (i.e., prenatal "bodily meaning"); the flowing of "life's energy" in "new ways of being"; discovery of one's "genuine self"; and an increase in personal "whole[ness]." [15]

Humanistic therapy: Method whose purported goal is to heal the "inner child." It posits a boundless human spirit. [16]

Human resources chi gong: Form of Qigong (*chi gong*) taught by Warner Chen, O.M.D., L.Ac. (licensed acupuncturist), Ph.D., of New York City. Chen describes *chi* as a "vital force or vital energy" similar to electricity. He recommends his "energy techniques" for alcoholism, allergies, arthritis, asthma, cancer, depression, diabetes, drug addiction, going bald, hernias, impotence, insomnia, neuralgia, sciatica, and other conditions. (See "Marrow cleansing chi gong," below.) [17]

I-Chuan (Da Cheng Chuan): Martial art modernized in the 1940s by Wang Xiang Zhai. Its ancient central practice is *Zhang Zhuang*—standing like a tree and meditating. [18]

Integrated kinesiology: Reportedly dynamic and eclectic variant of applied kinesiology (see *Mystical Diets*) taught by Dr. Craig Rubenstein. It includes the visceral meridian manipulation technique (VMM), "a mixture of classic organ manipulation, meridian therapy and kinesiology." [19]

Integrative yoga therapy: "Wellness" program developed by Joseph LePage, M.A. It involves guided imagery. [20]

Inter-light kinesiology (agape quest program): "Specialized Kinesiology" system that involves more than twenty "modalities," including acupressure, affirmations, "flower essences," "Muscle Testing," and tuning forks. These "powerfully integrated techniques" allegedly "unlock blockages." [21]

Kelley/Radix® work (Kelley/Radix personal growth work): Brand of Radix taught by Kelley/Radix, an organization in Vancouver, Washington, founded by Charles R. Kelley, Ph.D. Kelly, an author and psychologist, developed Radix in the 1960s and early 1970s. (The 1994 Kelly/Radix Schedule described "Chuck" and "Erica" as the "two founders" of Radix.) Alternate names for Radix include "neo-Reichian therapy" and the "Radix neo-Reichian program of personal growth." Radix borrows from Reichian therapy, another form of body-oriented psychotherapy, the concepts of "life energy" and "muscular armor." It postulates that muscle tension is the mechanism of volition and an access to one's "life force." In Radix terminology, "radix" means "life force" or "life energy." Kelley's organization offers a correspondence course titled "Science and the Life Force," which includes such topics as "radix = God = ether?" [22]

Kriya massage (kriya bodywork): Mode of bodywork that allegedly uses "universal, life-affirming energy." [1]

Life span nutrition (limbic eating): Dietetic philosophy expounded by its formulator, Majid Ali, M.D., in *The Butterfly and Life Span Nutrition* (1992). On page 214, Ali describes enzymes as the "LIFE FORCE OF FOODS...the life in foods." He states that enzymes give "foods in Nature their life" and distinguish "living organisms from nonliving objects" (p. 214). Ali further states: "I consider the wisdom of the ancients in matters of human nutrition the bedrock of all strategies for sound nutrition for the life span" (p. 221). The four "critical aspects" of life span nutrition (pp. 256-258) include the following. (1) "We are what we observe." Therefore, one should learn to observe how one responds to food and vice versa. (2) "Bowel is the most important defense organ of the body." Therefore, one should understand the "ecology" of one's bowel. (3) "Injured foods injure tissues." Fertilizers, pesticides, preservatives, processing, and spoilage are injurious. (4) "We must respect our food if our food is to respect us....The acid test of common sense must be accepted as the true test of what is right and what is not in nutrition." [23]

Marrow cleansing chi gong: Form of Qigong (*chi gong*) taught by Warner Chen, O.M.D., L.Ac., Ph.D., of New York City. (See "Human resources chi gong," above.) [17]

Mentalphysics: Purported practical, wholistic, futuristic science and "super yoga" founded in 1927 by Rev. Edwin J. Dingle, an English journalist and publisher who died in 1972. Mentalphysics supposedly brings out the "hidden meaning" of the Bible and reportedly involves "astral travel," aura reading ("aura study"), chanting, *jin shin jyutsu* (a variant of shiatsu), meditation (including guided meditation), *pranayama* ("deep scientific breathing exercises"), "pranic therapy" (a variant of channeling), reflexology, shiatsu, and individualization of diet according to "chemical type." [24]

Metaphysical hypnosis (metaphysical hypnotism): "Natural" yet "spiritual" method that, purportedly, involves autohypnosis, speeds healing, and can even effect "miraculous" healing. Dorothy H. McCrary, Ms.D. ("Doctor of Metaphysics"), trains "professionals" in this form of "suggestive therapy" in Manhattan. In a mailing postmarked January 9, "Dr." McCrary stated: "I am able to take a subject into any portion of our Universal Creative System....able to take a patient into...other solar systems....to his or her Mother Planet...[which] will converse with It's [sic] child and give healing instructions. I have taken subjects back millions of years before they became humans...." [25, 26]

Ortho-bionomy™ (OB): The bodywork field's answer to homeopathy, according to the Society of Ortho-Bionomy International. OB is a "complete system" of "natural manipulative therapy" and "self-healing" developed by Dr. Arthur Lincoln Pauls, a British osteopath who introduced it in the U.S. in 1976. Pauls, who reportedly believes in a "life force" or "life energy," defines "ortho-bionomy" as "the correct application of the laws of life." His system involves touching, dialogue, and instruction in common movements. Sessions may also include so-called energy field work. [27, 28]

Pre-cognitive re-education: Process that allegedly releases the "energetic thought forms" of "negativity." It posits a "HIGHER SELF"—a "place" of infinite wisdom. [29]

Process acupressure: Combination of "traditional" acupressure, "psychological process work," and zero balancing. Zero balancing is a reportedly adaptable mode of bodywork founded and named by Fritz Frederick Smith, an acupuncturist, medical doctor, and osteopath. Aminah Raheem, Ph.D., author of *Soul Return*, developed process acupressure, which involves the "body energy" theories of acupuncture, tai chi, and yoga, and posits "energy systems" consisting of "meridians" and chakras. [30, 31]

Psychic self-defense: Five-cassette audiotape program whose premise is that "negative forces," "negative influences," or "negative thought-forms"—a usually imperceptible form of "subtle energy"—are often the source of addictions, "bad luck," depression, and other problems. It is a form of so-called aura balancing. [32]

Psychic shield: Six-cassette purported complement to psychic self-defense (see above). It is a form of so-called chakra balancing. [32]

Reiki-alchemy®: Union of alchemia (see above) and reiki. Reiki is a variant of the laying on of hands that posits "Universal Life Force Energy." [1]

Reimprinting with divine intervention: "Powerful therapeutic process" developed by Gerry Schmidt. Supposedly, it involves divine assistance and healthfully transforms childhood experiences. [33]

Resonant kinesiologySM (RK): Meditative form of bodywork pioneered and taught by Susan Gallagher Borg, B.A., author of *Sing Your Body*. It involves touching, bodily postures, and vocal sounds. One of RK's postulates is: "Our bodies are metaphors for what we have learned to believe." In an article, Borg stated: "When a Resonant Kinesiologist works...s/he relates to the client in a vibrational manner that is similar to the phenomenon of two similar bells hanging near each other—when one bell is struck, the other will ring also." [34]

Rosen method: "Psycho-physical" system of bodywork developed in the 1970s by San Francisco physical therapist Marion Rosen. It purportedly unlocks the unconscious and integrates mind, body, emotions, and spirit. The method involves "non-intrusive" touching, verbal interaction, and "experiencing breath as the gateway to awareness." One of its postulates is that the body protects everyone from painful past experiences by separating the person from his or her "essential self" ("true self"). Shortness of breath and chronic muscle tension supposedly manifest this alleged protection. [35, 36, 37]

Shamanic counseling: Reputed blend of shamanism and clinical psychology practiced by Leslie Gray, Ph.D. It involves "power animal retrieval" and prerecorded chanting and drumming. Gray has described it as "an approach that does not make that mind/body split." Allegedly, "power animal retrieval" is the "bringing back" of a "guardian spirit." [38]

Silva mind control (Silva method, Silva mind control method, Silva mind control system, Silva method of mind development, Silva mind control method of mental dynamics, Silva mental dynamics): Brainchild of José Silva codeveloped by Burt Goldman. Silva, an unschooled electronics engineer born in Texas in 1914, expounded his method with different coauthors in *The Silva Mind Control Method* (1978) and *The Silva Mind Control Method of Mental Dynamics* (1988), both published by Pocket Books. Silva mind control is a "positive thinking philosophy" of meditative "self-help" that purportedly effects alpha rhythm, a brain wave that occurs in humans during wakeful relaxation. Proponents have averred that the method enables telepathy. On page 123 of the latter book, Silva and Goldman stated:

What we know of as now is the past of the future and the future of the past. Because there is no now, we can work wonders when we seek to change the future by looking to the past.... Through the use of directed, dynamic thought, the past can be changed by modifying your conception of the past.

The "mighty" principles of Silva mind control ("universal rules," "immutable laws of nature") include the following.

- **Mentalism:** "*The universe is a mental creation of God. ... We are aspects of the totality of Creation. As we are relative to God, so is our universe relative to us.*" This principle appears identical with pantheistic (monistic) idealism.
- **Correspondence:** "*As above, so below; as below, so above.*" As it is on the physical plane, so it is on the mental; as it is on the mental plane, so it is on the spiritual." This seems comparable to the double-aspect (or dual aspect) theory of mind, which holds that mind and body are manifestations of an ultimate process or substance—in the case of the Silva method, "Creation" or God (the "Creator").
- **Vibration:** According to this principle, "vibration" is the root of health, illness, success, and failure. "Adjust the vibrations to the proper level and a healing takes place."
- **Gender:** "*All things have a masculine and feminine aspect.*" According to this principle, gender "manifests" on physical, mental, and spiritual planes. The masculine "force" is outgoing, positive, and instigative, while the feminine "force" is "incoming," receptive, negative, and creative.

[39, 40, 41, 42]

SomatoEmotional ReleaseSM: Mode of body-oriented psychotherapy developed by John E. Upledger, D.O., and biophysicist Dr. Zvi Karni. One of its postulates is that emotional trauma can result in the localization of "physical forces" as devitalizing "dysfunctional areas" ("energy cysts"). The method also posits spiritual "dysfunctions." [30]

Soul-centered psychology: Afrocentric mode of "psychotherapy" promoted by John Bolling, M.D. Supposedly, practitioners use "soul perception" to harmonize "the archetypal energies of the psyche." [43]

"Tap, tap" system: Part of a nameless system of "self-help" expounded by Claude M. Bristol and Harold Sherman in *TNT: The Power Within You*, first published in 1954. The larger system involves positive thinking and posits telepathy. The authors described "TNT" as a "magnetic creative power" within people, a combination of a mental image of anything reasonable that one wants plus faith in oneself and in God (the "Great Creator"). The "tap, tap system" is simply repeated visualization of whatever one desires. [44]

Theocentric psychology: Christian system of "psychology" and psychological counseling "therapies," including marriage counseling and "sex therapy." [45]

Transformational counseling: "Holistic" system of "facilitation" taught by the American Association of Alternative Therapists (ASAT). It encompasses "dream therapy," parts therapy, progression/regression therapy, and psycho-neuro integration (PNI). A purported aim of PNI (also called psychic healing) is the "recharging" and realignment of "subtle energy centers." Apparently, the chief postulate of transformational counseling is that beliefs are the "real" cause of mental, physical, emotional, and "etheric" problems. [46]

Transition method: Subject of an "incredible" correspondence course offered by The Transition Institute®, in Conifer, Colorado. The institute's president, reputed former millionaire Bob Scheinfeld, assembled and christened the method, which purportedly spawns "daily miracles." One of its postulates is that a "vast communications network" interconnects all earthlings; supposedly, this (alleged) linkage exists in humans at the level of the unconscious. [47]

Unergi© method (Unergi holistic therapy): "Self-care" system that integrates the Alexander technique [see NF 11:57, 1994], Gestalt therapy [see NF 12:8, 1995], and Rubenfeld synergy© (see *Alternative Healthcare: A Comprehensive Guide*), a form of body-oriented psychotherapy. It involves dreamwork, "healing touch," inner child work [see NF 12:8, 1995], and meditation. Apparently, "Holistic Therapist" Ute Arnold developed the method in or before 1978. [48]

Vodou (vodoun, vodun, voodoo, voodooism): Fusion of Roman Catholicism and ancient African polytheism and ancestor worship, practiced chiefly in Caribbean countries. Vodou priestess Mama Lola, of New York City, promotes the religion as "a spiritual tradition of healing." [49]

1. Mailing postmarked January 13, 1995, from the DoveStar Alchemian Institute, in Hooksett, New Hampshire.
2. 1995 catalog of the DoveStar Institute, in Hooksett, New Hampshire.
3. 1993-1994 course leaflet for the Barbara Brennan School of Healing, in East Hampton, New York.
4. 1994-1995 *Holistic Health Directory & Resource Guide*, p. 60.
5. Ad in *Gulliver's Macrococosm* (also called *Macrococosmagazine*), Winter 1995, page 80.
6. Classified ad in *Free Spirit*, February/March 1995, p. 53.
7. Mailing postmarked November 7, 1994, from The BodyMind Academy, in Bellevue, Washington.

8. Mailing received on January 3, 1995, from the East West Herb School, in Santa Cruz, California.
9. Classified ad in *Newlife*, January/February 1995, p. 45.
10. Prerecorded phone message of January 10, 1995, from The Park Slope Martial Arts Institute, in New York City.
11. Mailing postmarked November 29, 1994, from Arise & Shine Herbal Products, in Tucson, Arizona.
12. R. Anderson. *Cleanse & Purify Thyself*. R. Anderson (publisher), 1994.
13. Seminar leaflet (© 1994 NLP Comprehensive) received from Advanced Communication Training, Inc., in New York City.
14. Classified ad in *Creations™*, Vol. 9, No. 1, February/March 1995, p. 21.
15. Mailing received on January 3, 1995, from The Focusing Institute, Inc., in Chicago.
16. Classified ad in *Creations*, Vol. 7, No. 2, April/May 1993, p. 17.
17. Display in *To Your Health!*, Vol. 6, No. 7, September/October 1994, p. 32.
18. Winter/Spring 1995 catalog of the New York Open Center, p. 73.
19. Display in *Healthmap Manhattan™*, Vol. 1, No. 2, December 1994/January 1995, p. 76.
20. *Yoga International's* "1995 Guide to Yoga Teachers & Classes," p. 2.
21. Classified ad in *Free Spirit*, February/March 1995, p. 47.
22. Mailing postmarked December 22, 1994, from Kelley/Radix, in Vancouver, Washington.
23. M. Ali. *The Butterfly and Life Span Nutrition*. Denville, NJ: Institute of Preventive Medicine, 1992.
24. Two mailings received in December 1994 from the Institute of Mentalphysics, in Joshua Tree, California.
25. Mailing received from D.H. McCrary, of New York City, on January 10, 1995.
26. Display in *To Your Health!*, Vol. 6, No. 7, September/October 1994, p. 12.
27. Mailing postmarked December 30, 1994, from the Society of Ortho-Bionomy International, in Madison, Wisconsin.
28. 1994-1995 *Holistic Health Directory & Resource Guide*, p. 69.
29. Classified ad in *Creations*, Vol. 8, No. 2, April/May 1994, p. 19.
30. Mailing postmarked December 30, 1994, from The Upledger Institute, Inc., in Palm Beach Gardens, Florida.
31. C.H. Simpkinson, D.A. Wengall, and M.J.A. Casavant. *The Common Boundary Graduate Education Guide: Holistic Programs and Resources Integrating Spirituality and Psychology/Second Edition*. Bethesda, Md.: Common Boundary, Inc., 1994.
32. Page 29 of catalog received on February 8, 1995, from QuantumQuests® International, in Oak View, California.
33. Audiotape listing on page 34 of the 1995 catalog of NLP Comprehensive, in Boulder, Colorado.
34. Mailing postmarked January 20, 1995, from the Resonant Kinesiology Training Program, in Burlington, Vermont.
35. Mailing postmarked December 23, 1994, from Rosen Center East, in Oakland, California.
36. Classified ad in *To Your Health!*, Vol. 6, No. 7, September/October 1994, p. 28.
37. K.G. Olsen. *The Encyclopedia of Alternative Health Care*. New York: Pocket Books, 1989.
38. Edition of "The Other Side," a talk show on NBC, broadcast on January 27, 1995.
39. E. Campbell and J.H. Brennan. *The Aquarian Guide to the New Age*. Wellingborough, Northamptonshire, England: Thorsons Publishing Group, 1990.
40. B. Inglis and R. West. *The Alternative Health Guide*. New York: Alfred A. Knopf, 1983.

41. J. Silva and B. Goldman. *The Silva Mind Control Method of Mental Dynamics*. New York: Pocket Books, 1988.
42. 1994 mailing from Nightingale-Conant Corporation, in Niles, Illinois.
43. Winter/Spring 1995 catalog of the New York Open Center, p. 47.
44. C.M. Bristol and H. Sherman. *TNT: The Power Within You. How to Release the Forces Inside You—and Get What You Want!* New York: Simon & Schuster, 1992.
45. Mailing postmarked November 23, 1994, from LaSalle University, in Mandeville, Louisiana.

46. Mailing postmarked December 5, 1994, from the American Association of Alternative Therapists, in Rockport, Massachusetts.
47. Mailing postmarked December 28, 1994, from The Transition Institute®, in Conifer, Colorado. The mailing included a "special report" (© 1994) titled "How To Get What You Want—With A Lot Less Effort And A Lot More Fun!"
48. Classified ad in *Free Spirit*, February/March 1995, p. 45.
49. Winter/Spring 1995 catalog of the New York Open Center, p. 23.



READERS' FORUM

Don't Worry, Be Happy

Dear Mr. Raso,

I am a registered dietitian working in an outpatient clinic which provides HIV-primary care. I read *Nutrition Forum*...[because] it provides invaluable information about health care fraud, a problem often encountered by the HIV-positive population.

I am distressed that you have opted to bring religion into the discussion. In the November/December 1994 issue of *NF*, you critique three publications which appear to be primarily addressing religious beliefs. (I did not read these books.) I believe it is important to keep religion out of the discussion of health care fraud, because belief systems' benefits are highly subjective. Crossing the line into questioning faiths, revealing your personal beliefs, threatens to undermine your objectivity. Only in cases where the clear goal of an organization is to reap profits by marketing highly questionable health products or cures does it seem appropriate. It's these "fringe" groups of all religious circles that tend to get media attention. For most, however, their faiths offer, among other things, community support, assistance to those in need, spiritual relief through meditation or prayer, and a sense of well-being. Our own beliefs, Mr. Raso, are irrelevant to the original cause for preventing victimization by health care fraud. Thank you for taking this into consideration.

—**Laura F. Wilson, R.D.**, Haelen Center, New Haven, Conn.

I appreciate your speaking your piece. I assume that the publications to which you alluded are: (1) *Deadly Doctrine: Health, Illness, and Christian God-Talk*, (2) *The Encyclopedia of Eastern Philosophy and Religion*, and (3) *Hidden Treasure: Discovering the God Within*. I reviewed *Deadly Doctrine* to reinforce my response to Dr. Sneed's letter; the encyclopedia because, as a critic of alternative healthcare, I have found it helpful; and *Hidden Treasure* because it conveys the common alternativist viewpoint that spirituality is the necessary backdrop and unique generator of materiality. This worldview fosters believing that if one shapes up spiritually, one will improve physically. On page 105 of *Hidden Treasure*, author Thomas Ehrhardt states: "Many of the 'bad' things that happen in the world today do so simply because we've lost contact with God and the spiritual realms...[O]ur sinking into material reality has been the cause of many regrettable

occurrences on the earth...." The book is readable, its jacket is eye-catching, and its message, which I don't treasure, is relevant to health fraud.

My no-holds-barred, iconoclastic approach to health fraud probably rubs many readers the wrong way. But I will not repudiate it, for there is a dearth of health-fraud opponents who deal with the religious and quasi-religious notions that facilitate such victimization. It's a largely thankless task, but somebody has to do it.

I am a religious nonbeliever. However, religious unbelief per se does not comprise personal beliefs. It is a state of not having any religious beliefs. It includes atheism and unbelief in afterworlds, angels, Satan, etc. Finally, it is perfectly consistent with science. I very much doubt that religious unbelief per se impairs objectivity in matters of science; indeed, I would venture calling it almost necessary for such objectivity. "Preventing victimization by health care fraud" may be the "original cause" of many people who want to maintain blind spots. It is not mine.

By the way, because the word "Haelen" rang a bell, I called directory assistance on January 23. The operator told me there was no listing for a "Haelen Center" in New Haven.—*J.R.*

Trend or Foe?

Dear Jack,

I am writing about the letter from Gayl Easter [NF 11:65, 1994]...regarding the...seminar entitled "Exploring Controversial Therapies in Nutrition," held in Glenwood Springs, Colorado [on November 18, 1994]. I would like your readers to know that the Colorado Dietetic Association (CDA) *did not approve CEUs* [continuing education units] *for the entire program*. The only portion that was approved was my presentation. CDA is very careful about its CEU curriculum, and I am proud of its scrutiny in this area. The purpose of my talk was to provide a set of guidelines for evaluating the so-called "Controversial Therapies." In fact, I stressed the point rather strongly that desperate people are prone to exploitation by the practitioners of these therapies.

I hope this clears up any misunderstandings.

—**Jackie Nielsen, M.S., R.D.**, Colorado Area Network Coordinator, National Council Against Health Fraud

Note: The Western Colorado Dietetic Association (WCDA) and a hospital were the sponsors of the "Controversial Therapies" seminar. On February 6, I phoned the CDA and spoke with Beth, a secretary, who stated that the CDA "covers all of Colorado" and described the WCDA as one of the CDA's "district" associations. Later that day, I phoned CDA president Rosanne G. Ainscough, who confirmed Beth's statements and added that the CDA does not have jurisdiction over the "planning of the programs" in "individual districts."

However, in a letter to Gayl Easter dated November 5, 1994, Ms. Ainscough had stated:

...The fact that CDA approved the *program* [emphasis added] for continuing education credit does not constitute an endorsement of the program or any of its speakers.... We reviewed the objectives of the conference and feel that WCDA is responding to a trend that ADA [The American Dietetic Association] has identified that there will be increased use of alternative medicine in the future and dietitians need to be

informed about these alternatives. We feel there is a difference between alternative therapies and quackery....

Quackery and "alternative therapies" are indeed different; but if the word "quackery" refers to the health-related teachings and practices of pretenders to medical expertise, alternative healthcare abounds in quackery. Jackie Nielsen's anti-health fraud efforts are undeniably praiseworthy. However, the manner of trendiness exhibited by the WCDA bears scrutiny.

On February 7, I phoned Jackie Nielsen and ADA. I asked Ms. Nielsen, for how many CEUs had the CDA approved her presentation. She responded that she had requested two. However, less than a month before the seminar, seminar representative Cindy Krisinger had stated on my answering device that "Controversial Therapies" had been "approved for six [continuing education] hours with ADA."

I asked Maggie Walls at ADA if the association had published a position paper on alternative healthcare. She replied that there was none. It is overdue.—J.R.

BRIEFS

Food stamp fraud. The U.S. Secret Service estimates that \$2 billion of the \$24 billion in food stamps issued annually are redeemed illegally. According to an Associated Press report, virtually every city has an underground system for diverting food stamps, and millions of dollars in illegal profits have been transferred overseas. Most schemes involve retailers who buy them for 50 to 70 cents on the dollar and redeem the stamps for face value or pass them to wholesalers for supplies. Recipients who sell their stamps typically use the cash to buy drugs, alcohol, clothing, or other goods not covered by the food stamp program. States using electronic cards instead of stamps have discovered conspiracies between recipients and grocers to empty accounts and split the proceeds. Instances have also been reported wherein supermarket cashiers passed debit cards through the electronic scanner several times and pocketed cash equivalent to the extra amount debited to the cardholder's account. Some middlemen approach indigents at shelters to obtain their stamps or debit cards.

Lieberman sues ADA. Shari Lieberman, Ph.D., has sued The American Dietetic Association (ADA) for defamation. In January 1994, ADA suspended her R.D. (Registered Dietitian) credential for three years for not practicing "dietetics based on scientific principles and current information." Her suit charges that ADA had no right to use opinions she conveyed through publications as the basis for its conclusion. Lieberman is a board member of the American Preventive Medical Association (APMA), which describes itself as "the public policy advocate for doctors and other health care practitioners who use nutritional approaches and other progressive therapies in patient care." Licensed APMA members can participate in an insurance policy that covers expenses incurred in defending against administrative actions (such as disciplinary actions by state licensing boards). APMA, Julian M. Whitaker, M.D. (an APMA officer who edits *Health & Healing*®

newsletter), Citizens for Health (an opponent of FDA regulation of the supplement marketplace), and the National Institute of Nutritional Education (see this issue's "School Daze") have urged contributing to the Shari Lieberman Legal Defense Fund. (In the January 1995 supplement to his newsletter, Whitaker called *NF* associate editor Ira Milner, R.D., a "disgruntled member" of ADA.)

Choices: Not Choice (a re-review)

I was off guard. In the November/December 1994 issue of *NF*, I favorably reviewed the third edition of *Choices: Realistic Alternatives in Cancer Treatment* (1994). A trusted associate of mine had voiced approval of the previous edition of the book and had thus predisposed me to acceptance. In my mini-review, I called *Choices* "an excellent, comprehensive reference book." It is not excellent. Chapter 24 includes a section, titled "Relaxation Techniques," that *implicitly* recommends Silva mind control (see this issue's "Healthcare Esoterica") and the Simonton method (a mode of visualization). Moreover, the section *explicitly* recommends therapeutic touch. The subsection on therapeutic touch includes the following paragraph (p. 738).—J.R.

Everybody has the latent ability to use their own natural energy in healing. The technique is being taught at many nursing schools around the country. Scientifically, it is believed that electron-transfer resonance explains what happens when hands are used to transfer energy to another part of the body. Some people unconsciously are able to focus their natural bioenergy field and become known as "healers." But most people can learn the technique and use it on themselves.

F O R U M

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The Enchanted Forest A "Treasury" of Healthcare Esoterica

Jack Raso

Medical alternativists portray those who continually pick holes in their methods as conspirators, exalters of conventional healthcare, and would-be restrainers of discriminating consumers—in short, as underinformed and/or self-serving members in good standing of the Establishment (or worse, a totalitarian cabal). That many people would buy such assertions is understandable. I myself often wonder what motivates persevering opponents of alternative healthcare, especially since the mainstream medical and dietetic communities seem uninterested in them. For me, fighting medical alternativism has been a distinctly nonlucrative, mostly joyless activity. I do it primarily because I abhor proselytical irrationalism.

I remember one criticism of my work frequently: In late 1992, a new acquaintance of mine told me he had chronic fatigue syndrome. A conventional physician, he said, had misdiagnosed his condition and prescribed a drug that worsened it. He stated that he had later turned to an herbalist. Since conventional medicine needed vast reform, he said bitterly, opponents of alternative healthcare were barking up the wrong tree.

The harm lingers from a somewhat similar experience I had as a 17-year-old in 1972. Its chief orchestrator was a conventional physician, but I blame the experience on organized irrationalism. I submit that alternative healthcare is an especially insidious form thereof and, as such, does pervasive, though unspectacular, harm. Philosophy professor George Englebretsen voiced my sentiments pithily in the May/June 1995 issue of *Skeptical Inquirer*: "The rationalist often, and understandably, wants to say that those who live in ignorance deserve the consequences. But...all of us suffer the consequences of willful stupidity."

Fast Backward?

In the introduction to *Natural Medicine*, published in 1979 in Britain, author Brian Inglis stated:

My aim has been to trace the development of the theories and practices of natural medicine from their source in tribal communities up to the present...In [my book] *Fringe Medicine*, a journalist's eye view of the scene in the

1960s, it was easy to sort the alternative therapies out into a few well-defined categories. Today "paramedical practitioners"...are increasingly being tempted to learn and practice a variety of methods. Old forms of therapy, too, are being imported, or revived, or adapted; and so rapid is the process of transformation that what is intended as a survey takes on the complexion of a running commentary.

The major distinctions of alternative healthcare vis-à-vis science-oriented healthcare include runaway cross-pollination and a lack of constructive infighting. Since the late 1950s, well over six hundred health-related methods—i.e., freestanding methods, multimethod systems, component methods, and general "approaches"—that I consider mystical or supernaturalistic have been subjects of uncritical public discourse in English (most since 1980). Broadly, mysticism is belief in realities accessible only through subjective experience. Supernaturalism is belief in entities, or forces, that are outside of, yet affect, the universe. The vast majority of the systems and methods of alternative healthcare are mystical or supernaturalistic. It may be cavalier to judge methods solely on the basis of the theories that underlie them, the methods' contexts, their histories, and the credibility or implausibility of claims for the methods. However, such information furnishes valuable clues, especially when pertinent scientific findings are nonexistent, meager, or discrepant.

Describing alternativist methods sometimes seems an exercise in masochism. My descriptions nearly always arise from painstaking examination of the writings of proponents. I try hard not to overinterpret their descriptions. The trouble is, promoters of particular methods tend to describe them circularly and in (popular) generalities. That they do so is no wonder: Alternative healthcare is a "melting pot" of religion, occultism, folklore, parapsychology, poppsychology, pseudoscience, and medical guesswork. It abounds in theoretical rubbish of the sort that appeals to the scientifically illiterate, superstitious, more or less God-fearing everyman. In the sprawling, animistic "enchanted forest" of medical alternativism, ideas run hog-wild, words have magical power, illness ("dis-ease") is an educational opportunity, the impossible is a challenge, wishful thinking is industry, faith is the ticket, and death is a transition.

According to a recent nationwide poll of college students, 71 percent believe in ghosts. To believers in ghosts—nonentities that ultimately are friendly, since they represent an afterlife—at least some of the many other nonentities that alternativists posit (e.g., *chi*, *kundalini*, *prana*, *shakti*, Shin-ki, and Shintu-Riki) must seem scientifically acceptable.

The alternativist methods I describe below are mystical or supernaturalistic and range from the plausible to the ridiculous.

Acupuncture energetics: Practice of acupuncture with the purported intention of treating acupuncture points so that they “resonate” with “archaic pathways” of the “bodymind.” It involves acupuncture imaging (see below).¹

Acupuncture imaging: Component of acupuncture energetics (see above) according to which the practitioner simultaneously palpates an acupuncture “zone” and describes it to the client in “energetic” terms. Joint focusing on “affected” zones supposedly enables channeling of the client’s “true healing intention” to “appropriate” zones, which purportedly effects “bodymind integration.”¹

Ancient Christian magic: Group of spells (e.g., for healing), recipes, and amulet recommendations conveyed in the book of the same name. Apparently, the basis of this brand of magic is “ritual power.”²

Apitherapy (bee sting therapy): Use of bees to sting persons who have multiple sclerosis into remission. Supposedly, the “energetics” of bees and their venom is key to the method.³

Applied kinesiology (AK): System of pseudodiagnosis and pseudotherapy developed between 1964 and 1973 by Detroit chiropractor George J. Goodheart, Jr. Its centerpiece is “muscle testing.” According to AK theory, specific muscles and other specific organs are uniquely interrelated so that the resistance of a particular muscle to manual pressure indicates the condition of the associated organ. AK also includes “clinical nutrition,” “dietary management,” and “meridian therapy” (apparently acupuncture).^{4, 5, 6, 7}

Astrological counseling: “Psycho-spiritual” mode of pseudopsychotherapy practiced by author and certified social worker Laurie A. Baum, M.S.W. Its basis is astrology.⁸

Awareness Release Technique® (A.R.T.): Form of “energy healing” developed by homeopath Robert T. Jaffe, M.D., founder of the School of Energy Mastery, in Sedona, Arizona. One of its premises is that “psychological issues” alter the “human energy field” and cause disease. The method seems a variant of the laying on of hands.⁹

Bach flower therapy (Bach flower essence method, Bach flower essence system): Quasi-homeopathic system of pseudodiagnosis and pseudotherapy developed in the 1930s by British physician Edward Bach (1886–1936). Bach put forth his philosophy in *Heal Thyself: An Explanation of the Real Cause and Cure of Disease*, first published in 1931. Therein he described five

“fundamental truths,” in sum: (1) Souls, invincible and immortal sparks of the “Almighty,” are the “real,” “Higher” selves of humans. (2) Humanity’s purpose is to develop virtues and wipe out all intrapersonal wrongs. Souls know what circumstances conduce to the perfection of human nature. (3) One’s lifetime is a minuscule part of one’s evolution. (4) When one’s “Soul” and personality are “in harmony,” one is healthy and happy. The straying of the personality from the dictates of the “Soul” is the “root cause” of disease and unhappiness. (5) The “Creator of all things” is “Love,” and everything of which humans are conscious manifests the “Creator.”

Bach held that disease was essentially beneficial and that its design was to subject the personality to the “Divine will” of the “Soul.” Supposedly, he “psychically” discovered the specific “healing” effects of 38 wildflowers. The “life force” (“soul quality” or “energy wavelength”) of each of these flowers allegedly is transferable to water and thence to humans. Each of the so-called Bach flower remedies is a liquid that supposedly contains a “soul quality” with an affinity to a human “soul quality”; and each vegetable “soul quality” allegedly harmonizes its human counterpart with the “Soul.” The bases of classical “diagnosis” are conversation and intuition. Administration of the “remedies” is usually oral but may be external.^{10,11,12,13,14,15,16,17}

Balanced Health: Offshoot of applied kinesiology (see above) taught by The Academy of Systematic Kinesiology, in Britain. “Treatment” may include chakra “corrections.”⁴

Bhramari: Yogic mode of breathing that imitates the sound of the bumblebee, purportedly affects two important chakras in the meditator, and allegedly soothes the meditator’s nervous system. However, longtime yoga teacher Michael Grady has implied that the practice may not soothe the nervous systems of bystanders, writing: “It may disturb others who share your living space. Even if you are practicing in a separate room behind a closed door, the drone can cause a spouse or roommate to check on the mysterious ‘alarm clock’ or ‘motor.’” The Sanskrit word “bhramara” means bumblebee.¹⁸

Biogram therapy (biogram healing, biogram healing system, biogram mind-body healing): “Treatment” developed by Dr. Richard Johnson that involves guided imagery and is the basis of an audiocassette program. “Biogram” refers to an alleged something that communicates directly with the source of a malady to initiate the healing process on mental and physical levels. The premises of biogram therapy include the following. (1) One can learn how to use one’s mind to correct any “negative physical conditions” in various areas of the body. (2) Everyone possesses a “cellular memory,” the experience of one’s ancestors in genetic code, which may cause

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otherwise inexplicable difficulties for the individual. (3) One can develop the ability to “see” inside one’s body with one’s mind and the ability to derive information from one’s “DNA archives” (the “Library of Time”), with which one can “retrain” oneself at the cellular level.^{19, 20}

BioKinesiology: Offshoot of applied kinesiology (see above) developed in the mid-1970s by John Barton. Its main premise is that “stressful emotions” are the basis of most illnesses. Alleged “correction” involves dietary supplementation.⁴

Biological Immunity Analysis™ (BIA, Biological Immunity System™): Companion to nutripathy (see below) developed by Gary A. Martin, D.N., Ph.D., Th.D., D.Sc. BIA is a “complete holistic system” whose centerpiece is purported deciphering, with the Biological Immunity CompuSystem™, of “Physical-Mental-Emotional frequencies” in specimens of urine and saliva. It allegedly reveals the donor’s “Soul Pattern” (“the pattern inherent in your Soul,” “a gift from God”).^{21, 22, 23}

Biomagnetic therapy: Pseudotherapeutic application of magnets whose apparent main premise is that their north pole causes contraction and their south pole dissipates “energy.”²⁴

BioSonic Repatterning™: System that encompasses cymatics and toning. Cymatics is “the science of wave phenomena.” Cymatic therapy is an acupressure-like method wherein devices send “beneficial” sound through the skin. Its purported objective is to reestablish “healthy resonance” in tissues. Toning is a vocal method that supposedly brings new “life energy” to “inhibited” or “unbalanced” parts of the body. BioSonic Repatterning also involves using “bija mantras” (“healing mantras” that purportedly activate “elemental energy qualities”) and tuning forks (to produce “Balance,” supposedly the “natural state” of humans).^{12, 25, 26, 27, 28}

Blue water technique: Mode of meditation in which one supposedly uses one’s “consciousness” to search one’s body for the source of hunger or pain. The meditator purportedly localizes the source and, three times, visualizes blue water slowly filling the area and then draining from it.²⁹

C.A.R.E. (Chakra Armor Release of Emotions): System promoted by author Raphael Rettner, D.C. Apparently, its main premise is that emotions are “involved in” four “energy pathways”: acupuncture meridians, chakras, “polarity elements,” and “armor”—“a muscle spasm due to an unexpressed emotion.”³⁰

Chi (ki) energy flow: “Treatment” reportedly invented by Masato Nakagawa, Ph.D., the founder of shinkiko (see below). It allegedly relieves discomfort and pain by improving “energy flow.”^{31, 32}

Chinese auricular therapy (Chinese auricular acupuncture, traditional Chinese auricular acu-points therapy, traditional Chinese auricular acupuncture, traditional Chinese auricular therapy): Technique of traditional Chinese medicine (TCM) whose “channel theory” differs from that of “body acupuncture.” Its apparent chief postulate is that several areas and more than a hundred acupuncture points on the auricle (the outer portion of the ear) interactively relate to other areas or to diseases. The fetuslike contour of the auricle inspired the distribution of points thereon. The technique includes auricular analgesia (also called auricular analgesic acupuncture and auricular acupuncture analgesia), auricular diagnosis, auricular magnetic therapy (also called magnetotherapy), auricular massage, auricular moxibustion, auricular point injection, the auricular point laser-stimulating method (also called laser needling), bleeding manipulation (also called bloodletting therapy), and the seed-pressure method. Chinese auricular therapy differs from auriculotherapy (see “Alternative” Healthcare: A Comprehensive Guide).³³

Christian yoga: “Wholistic modality” promoted by the Institute of Wholistic Studies (at Our Lady of Lourdes Wellness Center), in Collingswood, New Jersey. Purportedly, it is a blending of body, mind, and spirit, and a process of “releasing the physical and mental limitations that hinder access to the Divine.”^{34, 35}

Clinical kinesiology: Offshoot of applied kinesiology (see above) developed largely by Alan Beardall, an American chiropractor who died in 1988. One of its premises is that points on the skull (“cranial diagnostic points”) “represent” different areas of the body and thus facilitate finding areas of dysfunction. Another is that points along the “Central meridian” represent therapeutic entryways.⁴

Colorology: Method promoted by “trans-channel” (sic) Lin Rivers. It purportedly activates “energy points” in the body and leads to a “higher level of mind, body and spirit.”³⁶

Colorpuncture™ (colorpuncture system, Osho esoteric colorpuncture system): Combination of “Energy Emission analysis” (Kirlian photography) and a form of color therapy. German naturopath Peter Mandel, who developed esotericism (see below), named the system. “Treatment” involves application of colored light, with a device that resembles a penlight, to “acupuncture receptors” in the skin. According to colorpuncture theory, color is “life energy” that carries “healing information,” and acupuncture meridians convey this information to the cells and organs that need it.³⁷

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Cranial facial balancing: Method promoted by Innes Frey, of New York City. It purportedly involves stimulation of “lymph drainage reflexes” and “meridian points” on the face, neck, and shoulders. Such stimulation supposedly conduces to the “balance” and “integration” of bodily systems.³⁸

Creative kinesiology: Offshoot of applied kinesiology (see above) codeveloped circa 1990 by acupuncturist Haakon Lovell and psychotherapist Carrie Jost. It posits an “astral body,” an “etheric body,” chakras, and *chi*.⁴

Deep emotional release bodywork system: Supposedly revolutionary system taught by “gifted healer” James Hyman. It apparently comprises Deep Emotional Breathwork, Emotional Release, and Chi Kung Empowerment, each of which purportedly releases “blocked energy” from the body.⁸

Directed esoteric toning: Form of toning (see “BioSonic Repatterning™,” above) that posits a “spiritual self,” chakras, *prana*, kundalini, clairaudience, and clairvoyance.³⁹

Ehretism: System of “healing” originated by Prof. Arnold Ehret, who died in 1922. His books include (1) *Definite Cure of Chronic Constipation*, (2) *Mucusless Diet Healing System: A Scientific Method of Eating Your Way to Health* (1970), (3) *Rational Fasting: A Scientific Method of Fasting Your Way to Health* (1971; published in German in 1914), and (4) *The Story of My Life*, all of which are available from Benedict Lust Publications, in New York (see “Grape cure,” below). The centerpiece of Ehretism is the mucusless diet, which consists of all green vegetables and all fruit. In an essay titled “My Mucusless Diet and Naturopathy,” Ehret held that “internal impurity” (“mucus”) was the only disease, and that “unusable food elements,” mainly from “mucus-forming foods,” caused it. “Mucus-forming foods,” according to one of Ehret’s articles, include dairy products, eggs, fats, meat, and all starchy foods. In one of the 25 “lessons” that constitute the text of *Mucusless Diet Healing System*, Ehret, citing *Genesis*, called fruits and “starchless greenleaf vegetables” the “natural food of man.” (See “Rational fasting,” below.)^{40, 41, 42}

Esogetics: System developed and named by German naturopath Peter Mandel and practiced at the Mandel Institute, in Bruchsal, Germany. It reportedly boils down to the “science of bio-energy,” whose “levels” range from the material to the esoteric. One of the premises of esogetics is that colored light transmitted by acupuncture meridians tends to heal specific forms of disease and dysfunction.³⁷

Flower essence therapy: Enlargement of Bach flower therapy (see above) pioneered in the 1970s by Richard Katz, who founded the Flower Essence Society (FES) in 1979. The system involves purported intake of “flower essences”—“subtle liquid extracts” whose alleged active ingredients are “life forces” from wildflowers or “pristine” garden blossoms.^{15, 43, 44}

Grape cure (grape diet): Form of “mono diet” promoted by Johanna Brandt, N.D., “Ph.N.,” author of *The Grape Cure* (© 1928). Benedict Lust Publications, which has a P.O. box in Manhattan, published a paperback edition in 1967 and is a distributor of Brandt’s book and similar works. The term “mono diet” refers to any regimen characterized by the restriction of food intake to one

specific kind of food. The front matter of the softcover edition of *The Grape Cure* quotes the author: “My discovery of the Grape diet is the direct result of Divine Illumination.” The grape diet consists of grapes or grape juice. Brandt held that the mind operated through “magnetism” and that the grape cure contributed to the purification and buildup of “magnetism.” She recommended it for appendicitis, cancer, diabetes, gout, pyorrhea, rheumatism, scurvy, “sex problems,” tuberculosis, “unnatural cravings” (as for alcoholic beverages, coffee, tea, and tobacco), and other conditions. Under the heading “Sex Problems,” she stated: “By the magical purification of the blood the nerves are stabilized, self-control is established and our God-given heritage of sense and desire is transmitted into divine creative power.”⁴²

Hakomi integrative somatics: System of bodywork originated by Pat Ogden. Its basic premise is that body, mind, and spirit are one continuous “movement.”⁴⁵

Harner Method Shamanic Counseling (HMSC): Admixture of classic shamanism and the work of author Michael Harner, Ph.D., founder and director of The Foundation for Shamanic Studies. The purported thrust of HMSC is problem-solving by divination. Supposedly, practitioners (“ordinary reality HMSC counselors”) serve merely as facilitators, and sacred teachers in “nonordinary reality” are the “real” counselors.^{46, 47}

Health kinesiology: Offshoot of applied kinesiology (see above) created by psychologist Dr. Jimmy Scott. It involves the ancient Chinese theory of the “Five Elements” and posits acupuncture points, a “meridian system,” and “reflex points” for the “Five Elements” in the area of the navel. “Corrective treatments” may include crystals, gems, magnets, and homeopathic “remedies.”⁴

HealthWatchers System™: “Specialized application” of Biological Immunity Analysis™ (see above) to weight management. Its centerpiece is the HealthWatchers Analysis™, a purported test of urine and saliva for “the physical and emotional frequency” of an individual’s “Stress Pattern.” HealthWatchers System®, a mail-order house in Scottsdale, Arizona, defines “Stress Pattern” as “the resistance created by People, Places, Circumstances and Events attracted to you because they are opposed to your Soul Pattern”; “Soul Pattern” as “the pattern inherent in your Soul...the point-of-view from which you are able to see and express life when you are free from your Stress Pattern”; and “Soul” as “the immortal, spiritual, moral or emotional nature of a human being.”^{23, 48}

Ho’oponopono: Reputed ancient Hawaiian process whose alleged main purpose is discovery of the “Divinity” within oneself. Apparently, this supposedly enables removal of “the internal cause” of stress. The method purportedly: “releases” problems and “blocks” that cause “imbalance,” stress, and “dis-ease” in “the self”; brings peace and “balance” through a physical, mental, and spiritual “cleansing” that involves repentance and “transmutation”; and creates “balance,” freedom, love, peace, and wisdom within individuals (and other social entities) and the “Universe.” According to The Foundation of I, Inc., in Mamaroneck, New York, Ho’oponopono “can be used for animate and inanimate objects” and “on any problem or situation.”^{49, 50, 51}

Human ecology balancing sciences: Offshoot of applied kinesiology put together by physicist Steven Rochlitz. It supposedly involves the “balancing” of “meridian disorganization” and of “energy.”⁴

Iroquois medical botany: Traditional usage of herbs as medicines in the culture of the six Native American peoples that constitute the Iroquois League. According to the Iroquois theory of disease, symptoms are manifestations of a disturbance of the “vital principle” within an individual and result from any of four acts: (1) violating a divine guideline, (2) self-denial, (3) interacting with entities or events that give off “negative power” or evil, and (4) offending an individual who has access to “great knowledge” regarding the manipulation of “spirit forces.” Iroquois herbal “medicines” include “antighost” plants, “anti-witching remedies,” and “cures” for “bad luck” and even death.⁵²

Kinesiology (kinesiologies): Applied kinesiology (see above) and its offshoots, e.g., Touch for Health (TFH). (In conventional health-care, kinesiology is the study of muscles and human motion.)⁴

Kobayashi technique(s): Allegedly rejuvenescent system of movements, postures, exercises, and diet promoted by “Master Healer” Ken Kobayashi. It purportedly involves using “the” Shintsu-Riki®—“Healing Ki energy.” “Elements” of the Kobayashi technique include acupuncture, *do-in* (a form of acupressure that resembles hatha yoga), shiatsu, and herbal teas.^{53, 54}

Laserpuncture: Technique involving application of a laser beam to acupuncture points.⁴³

Laura Norman method: Form of reflexology taught at the Laura Norman & Associates Reflexology Center, in Manhattan. It includes hand reflexology and foot reflexology and emphasizes the latter. Laura Norman, M.S., is the author of *Feet First: A Guide to Foot Reflexology* (Simon & Schuster). A 1995 ad for the center defines “foot reflexology” as “an ancient healing technique that uses steady pressure to stimulate reflex points on the feet, accelerating the body’s own healing abilities to corresponding organs and glands throughout the body.” A Reflexology Center leaflet on display at a health spa in May 1995 states that reflexology can “cleanse the body of toxins” and enhance creativity, productivity, and relationships.^{55, 56, 57}

Lepore technique (LePore technique): Variant of applied kinesiology (see above) developed by Donald J. Lepore, N.D., D.N., N.M.D. Its centerpiece is the M.R.T. (“Muscle Response Test” or “Muscle Response Testing”) technique (or method), which allegedly can: (1) pinpoint allergens (“metabolic antagonists”), (2) “measure” their “nutritional” neutralizers (e.g., herbs and homeopathic “remedies”), and (3) “measure” nutrients that facilitate absorption of the neutralizers. The M.R.T. technique involves rubbing the thymus, purportedly to activate acupuncture points, and rubbing “the mastoid gland behind both ears,” purportedly to relax acupuncture points. The practitioner may perform it for a sleeping child or an invalid (even a comatose person) through a surrogate standing near the subject. The Lepore technique encompasses glandular therapy and two quasi-homeopathic systems: Bach flower therapy (see above) and cell

salt therapy (also called tissue salt therapy). The main premise of glandular therapy is that intake of glandular substances quickly results in their nutritive uptake by glands similar to the substances.^{24, 58}

Life care kinesiology (Life Care): Offshoot of applied kinesiology (see above) put together by Richard Beale. It posits “acupuncture end points” and involves “chakra meditation.”⁴

Light ray rejuvenation system (light ray system): Mode of facial that “works positively on the physical, emotional, mental, and spiritual body.” It involves application of an electric current to facial muscles, purportedly at the “EARTH frequency”—“the frequency of psychics and healers.”⁵⁹

Magno-therapy: Method promoted by author Dr. Jesse F. Partridge. Apparently, it allegedly heals many types of disease through “body energy.”⁶⁰

Marma science (Dhanur Veda’s science of marmas): System of pseudodiagnosis and pseudotherapy promoted by Joseph Kurian. It posits 107 *marmas* in the human body. Marmas are alleged channels that regulate the flow of information, nutrients, and toxins throughout the body. Supposedly, damage to the “marma system” (e.g., from diet or stress) results in susceptibility to disease, and proper stimulation of marmas enables protection from any environmental threat. Marma science also posits chakras. It involves Nadi Sutra Kriya, purportedly a way of touching marmas to create a “balancing effect,” and the use of special oils, purportedly to unblock marmas.⁶¹

Metal and gem therapy: Pseudotherapeutic application of metals, gems, and gemstones. Its apparent main premise is that different metals and gemstones affect the body’s “electromagnetic field” differently. For example, emeralds, purportedly, can balance chakras and can heal and cleanse one’s “aura.” Obsidian supposedly can eliminate “negativity” and draw one’s “aura” toward the body.²⁴

Nadi shodhanam (channel purification): Yogic mode of breathing that supposedly cleanses *nadis*—the alleged “subtle vessels” of the “physical and subtle bodies.” The purported result is a reduction of nervous tension.⁶²

Nutripathy: “A religious science of experiencing mental, financial, physical, social and spiritual health using specific universal laws,” according to *Nutripathy...The Key to Your Prosperity, Success and Spiritual Fulfillment* (1984). Gary A. Martin, D.N., Ph.D., Th.D., D.Sc., originated the system in the late 1970s, allegedly thanks to divine influence. It involves hair analysis (“mineral analysis from hair”) and a variation of Bach flower therapy (see above). Its premises include the following. (1) God is in everyone. (2) One’s “True Self” is God (“Love”). (3) “Proper nutrition” and realization of one’s “true identity” together make for a perfect life. [See Chapter 12 of *Mystical Diets*; NF 12:15, 1995; and NF 4:57–61, 1987.]^{63, 64}

Oki-do (okido, okido way of living): An “organic, natural way to ultimate health” that draws on “Chinese Chikwando,” macrobiotics, tai chi, Tibetan medicine, yoga, and Zen. “Chinese Chikwando” supposedly involves using “*chi* energy” for healing. It is not a martial art.^{31, 32}

Okinawan karate (Shorin Ryu karate): Meditative form of karate that, purportedly, frees the minds of practitioners, nourishes their spirits, and strengthens their bodies. "Shorin Ryu" is the technical name for a style and school of Okinawan karate.^{65, 66}

Optimum Health Balance: Offshoot of applied kinesiology (see above) developed by Charles Benham. Practitioners place "remedies" or "supplements" on clients, supposedly to channel the "energy patterns" of such things.⁴

Original Ingham Method™ (Ingham method, Ingham method of foot reflexology, Ingham technique): Form of reflexology promoted by the International Institute of Reflexology®, in St. Petersburg, Florida. The institute defines "reflexology" as "a science which deals with the principle that there are reflexes in the feet relative to each and every organ and all parts of the body." The Ingham method emerged from the work of Eunice D. Ingham Stopfel (1879–1974) and her nephew Dwight C. Byer. Ingham developed a style of foot reflexology she called the Ingham Reflex Method of Compression Massage. In the 1930s, she "refined" zone theory (see "Zone therapy," below) by mapping the feet with "organ reflexes" (e.g., the "heart reflex"). Allegedly, each of these areas is a conduit to a corresponding part of the body.^{56, 67, 68, 69}

Professional Kinesiology Practice (PKP, PKP approach): Offshoot of applied kinesiology (see above) developed after 1985 by Bruce Dewe, M.D., and his wife Joan, both of New Zealand. During a session, the client decides on a goal, and the practitioner performs "muscle testing" on the client, purportedly to determine if the goal is appropriate. PKP involves the ancient Chinese theory of the "Five Elements." Its supposed thrust is to "balance the life energy forces."⁴

Psycho-kinetic Health (PKH): Offshoot of applied kinesiology (see above) developed in Britain. Its main premise is that practitioners can feel and see "energy blocks" in clients and remove the "blocks" through "mental effort." PKH also posits "meridians" and "subtle body energies."⁴

Rational fasting: Irrational manner of fasting promoted by Prof. Arnold Ehret in his book of the same name (see "Ehretism," above). It includes the "Superior Fast" ("superior fasting"), an ascetic mode of fasting that purportedly is part of the key to "the revelation of a superior spiritual world."⁴¹

Raw juice therapy: Purported "Natural" therapy proposed in *Drink Your Troubles Away* (1991). It centers on ingestion of juice extracted fresh, with electric juicers, from fruits and vegetables. Its supposed intention is to correct "colloidal cell chemical composition" that has become "unbalanced" because of "unnatural" habits. Unpleasant reactions to raw juice therapy allegedly indicate that the juices do not "harmonize" with an unhealthy gastrointestinal condition or with an "acid condition" of the blood; supposedly, such reactions are thus signs of improvement.⁷⁰

Reflexology workout: Group of procedures that involve massage of the feet and hands and allegedly enable push-button control of hormone release. It purportedly is the equivalent of an internal massage. (See "Laura Norman method" and "Original Ingham Method™," both above; and "Zone therapy," below).⁷¹

Rei-so (spiritual diagnosis): Pseudodiagnostic method whose apparent main premise is that dead people, in the form of spirits (interpretable as consciousness, energy, or vibration), can influence living people who had an intimate relationship with them. Supposedly, spirits create darkness in the "auras" of people they are affecting negatively.⁷²

Self expansion therapy: Style of quasipsychotherapy practiced by certified social worker Ralph Gray, of New York City. Supposedly, the means whereby one attains "growth" and "transformation" include: listening carefully to one's "true inner self," "re-connecting" one's thoughts and feelings, recovering one's "authenticity," and releasing physical and emotional "blockages." (In the November/December 1994 issue of *NF*, I incorrectly referred to this method as self *expression* therapy.)⁷³

Self-help for stress and pain: Offshoot of applied kinesiology (see above) originated by Elizabeth and Hamilton Barhydt and described in their book of the same name, published in 1989.⁴

Shamanic extraction healing (extraction method of healing): Method that purportedly involves sensing and removing "localized spiritual illness and pain."⁴⁷

Shinkiko: Allegedly "the ultimate healing art from Japan," an "intuitive medical science" founded by Masato Nakagawa, Ph.D. Similar to Qigong, shinkiko purportedly involves therapeutic application of "Shin-ki" ("healing-energy"). Supposedly, shinkiko "therapists" can tap a "limitless universal energy source." Proponents recommend the system for many health problems, including AIDS, cancer, cholecystitis, cirrhosis, deafness, glaucoma, hepatitis, and nephritis.⁷⁴

61-points relaxation exercise (61-points exercise, 61-points, shavayatra): Meditative mode of exercise whereby one purportedly travels mentally throughout one's body while one is supine and corpse-like. ("Shavayatra" means "traveling through the corpse.") The 61 points are specific parts of the body. Supposedly, the practice affects one's "pranic field" and eliminates muscular tension.⁷⁵

Sonopuncture: Technique involving application of ultrasound to classical acupuncture points.⁴³

Sound energetics™: Method invented and practiced by Helena Reilly, M.A. It involves purported analysis of the voice and the application of sound at frequencies that allegedly release "psychological and emotional energies." The principle of sound energetics is that one's voice is a "reflection and map" of one's "energetic vibration overall."^{76, 77}

Spiritual midwifery: Childbearing philosophy promoted by Ina May Gaskin in her book of the same name. It posits "spiritual energy" that is "Holy"; indivision of humanity ("We are all One"); *shakti* (divine female "energy"); and God. Moreover, it euphemizes contractions as "energy rushes" and postulates that "a husband and wife form a single energy unit."⁷⁸

Stress pattern processing™: "Modality" whose centerpiece is the HealthWatchers Analysis™ (see "HealthWatchers System™," above). One of its premises is that humans are "electrically driven" spiritual beings.²³

Stress Release (Stress Release approach): Offshoot of applied kinesiology (see above) developed by Dr. Wayne Topping. It posits a "meridian network."⁴

Subatomic healing: Form of so-called psychic healing practiced by medium and "hypno-therapist" Heshheru Amenrahetep, who recommends it for AIDS, cancer, mental confusion, and other health problems.⁷⁹

Subtle aromatherapy: Form of vibrational healing (see "Vibrational medicine," below) promoted by Patricia Davis in her book of the same name. "Aromatherapy" refers to any application of essential oils that is purportedly for beauty or health. Essential oils allegedly can restore "balance" and "harmony" not only to one's body but also to one's life. "Subtle aromatherapy" refers to any use of essential oils with the purported objective of: (1) healing the "physical body" by affecting the "subtle body" ("energetic body"), or (2) contributing to personal and spiritual growth.^{80, 81}

Taido: "Technique" developed by Toshihisa Hiraki that uses hands "as empowered by universal energy."⁸²

Tensegrity: Series of movements promoted by author Carlos Castaneda, Ph.D., who supposedly learned them from his teacher, reputed Yaqui sorcerer (*brujo*) Juan Matus (Don Juan). The method posits an "energy body." (According to Castaneda, his teacher was born in 1891. However, the alleged reality of Castaneda's Don Juan is doubtful.)^{83, 84, 85}

Thai massage: Millennia-old, meditative, "sacred" form of body-work that draws on acupressure, reflexology, shiatsu, and yoga.⁸⁶

Three in One (Three in One Concepts process, Three in One approach): Offshoot of applied kinesiology (see above) whose development began in 1972. Its apparent thrust is to "defuse" the "negative emotional charge" caused by "negative experiences." One Brain™ [see NF 12:2-3, 1995] is a derivative of Three in One.⁴

Time Line Therapy™: Branch of neuro-linguistic programming (NLP) created by Dr. Tad James. Time Line Therapy is a group of "techniques," one of whose premises is that people store their "experience of time" on a line in space. Journeying on this so-called timeline to the past and future allegedly charges one's "life-energy" and prepares one for the "incredibly powerful magic" of Huna (an esoteric tradition native to the Hawaiian Islands).^{87, 88}

Ujjayi (ujjayi breathing): Audible form of *pranayama* whereby one purportedly develops awareness of one's "subtle body." The Sanskrit word "pranayama" refers to any yogic regulation of breathing with the intent of controlling the *prana* ("cosmic energy" or "vital energy") of one's body. Supposedly, ujjayi affects *udana* (also spelled "uddana"), a form of *prana* that is "upward-flowing" and purportedly functions as something of an escape hatch for the soul at death. Proponents recommend ujjayi especially for insomnia and mental tension. The practice allegedly strengthens the digestive and nervous systems and eliminates phlegm.^{89, 90}

Vibrational medicine (vibrational healing, energy medicine, subtle-energy medicine): "Healing philosophy" whose main "tenet" is that humans are "dynamic energy systems ["body/mind/spirit" complexes] which reflect evolutionary patterns of soul growth." Its premises include the following. (1) Health and illness originate in "subtle energy systems." (2) These systems coordinate the "life-force" and the "physical body." (3) Emotions, spirituality, and nutritional and environmental factors affect the "subtle energy systems."

Vibrational medicine embraces acupuncture, aromatherapy (see "Subtle aromatherapy," above), Bach flower therapy (see above), "chakra rebalancing," channeling, color breathing, color therapy (chromotherapy), crystal therapy, distant healing, EAV (Electroacupuncture According to Voll), flower essence therapy (see above), homeopathy, Kirlian photography, laserpuncture (see above), the laying on of hands, mesmerism, moxibustion, orthomolecular medicine, past-life regression, psychic surgery, radionics, the Simonton method, sonopuncture (see above), toning (see "BioSonic Repatterning™," above), Transcendental Meditation® [see NF 11:38-40, 1994], and therapeutic touch [see NF 12:24, 1995].^{43, 91}

Zone therapy (reflex zone therapy, reflex zone massage): Variant of acupressure from which the Original Ingham Method™ (see above) developed. William H. Fitz-Gerald, born in Connecticut in 1872, founded zone therapy circa 1913. His colleague Edwin F. Bowers, M.D., named and codeveloped the system, whose basic modes are hand reflexology and foot reflexology. Fitz-Gerald sectioned human anatomy lengthwise into ten "zones" and taught that "bioelectrical energy" flowed through them to "reflex points" in the hands and feet. According to "zone theory," body parts within a particular zone share an "energy flow" and, therefore, any problem in one part of a zone is modifiable by pressing any other part within the same zone. Some proponents use the term "zone therapy" as a synonym for the word "reflexology," which is generic. For example, in *Massage Techniques* (1986), D. Baloti Lawrence stated that reflexology included acupressure and acupuncture.^{15, 67, 92, 93, 94, 95, 96}

The Bottom Line

Proponents of alternative healthcare clamor for "health freedom" or "medical freedom." But medical alternativism and other forms of organized irrationalism conduce not to freedom but to human enslavement. Inability to make informed choices renders freedom of choice meaningless. In the healthcare marketplace, many choices stem from a combination of wishful thinking (or desperation), internalized advertising, and a distrust of establishmentarian (science-oriented) medicine. I regard alternative healthcare as the new opiate of the people. It gives wrong and conflicting, but seductive, answers to existential questions that science-oriented healthcare generally sidesteps.

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Marketing of Ephedra Products in Health Food Stores

Jennifer E. Pumphrey

The herbal remedy ephedra, also called ma huang, consists of the green stems of various *Ephedra* species, some of which contain the bronchodilator ephedrine and related compounds with similar physiological effects. Ephedrine increases blood pressure and heart rate. Side effects of large doses include dizziness, headache, insomnia, nervousness, palpitations, and vomiting. Ingestion of ephedra by persons with diabetes, heart disease, hypertension, or thyroid disease is risky. Most nonprescription herbal "cold

care" products contain ephedra or a related herb. Ephedra is also an ingredient of products promoted as aids to dieters or as "energy boosters." Some of the names of products that list ephedra as an ingredient imply that the products can: accelerate a change in "shape," provide a surge of good health, relieve allergies, or supercharge users.

In late 1994, I visited ten health food stores I had singled out, with a random number table, from *The Cleveland-Metropolitan Area Yellow Pages*. In each store, I found an

“energy booster” containing ephedra, brought it to an employee, and asked: (1) “Do you think this works?” and (2) “Is it safe? Does it have any side effects?” Below are the employees’ responses.

1. It’s very good. The extra-strength works better. There are no stimulants. It’s one hundred percent herbal. That’s why we carry it. You won’t find side effects here, only in the drugstores.
2. It works well. I use it all the time. It’s safe, real safe. There are no side effects—none.
3. It’s good and safe to use. There are no side effects, because it’s natural and not like a drug. Your body needs it anyways.
4. It’s all herbal; so there are no side effects.
5. The extra-strength products aren’t good to use every day because you don’t want your body to rely on it, but it has no side effects. The regular-strength is okay to use every day. No side effects; it won’t make you shaky.
6. [It’s] good to use. It has guarana and ma huang in it, which are stimulants. They get you going but won’t cause jitters. [An 800-mg tablet of guarana contains approximately 30 mg caffeine.]
7. It has some caffeine in it, but it’s not as strong. It’s not a drug, because it hasn’t been taken out of its natural state. It’s better for you.
8. [It] contains things the body needs. No major side effects. It has ma huang in it, which is a stimulant; it acts like caffeine [and] works well.
9. [It] contains guarana and ma huang, which are powerful herbs. You should avoid taking them if you have high blood pressure.
10. You shouldn’t [use it] if you have high blood pressure. It’s a powerful stimulant and can cause heart palpitations.

In only one store (#10) did an employee specify a side effect. Considering (a) the riskiness of ingesting ephedra, (b) the considerable availability of products that contain it, and (c) the inadequacy of warnings on “energy boosters” (and “diet aids”) that contain ephedra, the employees’ responses suggest a need for labeling reform.

Ms. Pumphrey, a former health food store employee, is pursuing a doctorate in clinical psychology. Her findings concerning ephedra were part of an investigation of five herbal ingredients that she performed under Dr. William M. London, Associate Professor of Health Education at Kent State University.

Readers’ Forum

Mystical Misplacement

Dear Mr. Raso,

Last August 17, I wrote to Barnes and Noble...to inform them that they had misclassified your *Mystical Diets* in the New Age section. Today, February 13, I got an answer from them. They have recoded [your book] as regular Health.

—Kurt Youngmann, Highland Park, Ill.

Around 1989, I spotted a hardcover titled *Understanding the New Age* (1988) in the New Age section of a chain bookstore and bought it. The book is a panoramic critique of New Age beliefs, practices, and gurus. But, in my opinion, it did not belong in the New Age section, since it depicts the movement as harmful. Nor would it have belonged in the science section, since the clear stance of its author, religion writer Russell Chandler, M.Div., was mainstream Christian. The title *Christianly Understanding the New Age* would have more befitted this interesting book, which should have been in the religion section. The Library of Congress catalogs books according to subject matter, regardless of the author’s viewpoint. However, this probably has little effect on their placement in bookstores.—J.R.

Comments: In his August letter to the Customer Relations Department of Barnes and Noble Bookstores, in New York City, Mr. Youngmann stated that the computer at the company’s Deerfield, Illinois, store listed *Mystical Diets* as available in the New Age section. He further stated that he could not find the book there and that someone had then directed him to the “Holistic” shelves of the store’s “Health” section, where he obtained it. He

wrote: “I am surprised that no one has taken the time to check the contents and subject matter of *Mystical Diets* beyond the title.”

Last year, during a live radio interview concerning my second book, *“Alternative” Healthcare: A Comprehensive Guide*, a cohost aborted the segment after I explained that I was not an apologist for alternative medicine—a fact of which he apparently had been unaware. He insisted that the title of the book was misleading because it suggested approval of alternative healthcare! I asked him if he’d had the opportunity to page through the book, and he responded that of course he had done so!

Incidentally, the February 25, 1995, issue of *Science News* included a 4-page advertisement for Science News Books. On its “bestsellers list” was *The Complete Medicinal Herbal*, by Penelope Ody. In his review of the herbal in the March/April 1994 issue of *NF*, Varro Tyler, Professor of Pharmacognosy at Purdue University, concluded: “Aside from the excellent illustrations, there appears to be no justification for publishing this book.” However, the advertisement’s description of the book was uncritical. On February 27, I phoned the magazine’s business offices and conversed with Madeline, of Science News Books. Madeline told me that both *Science News* and Science News Books are departments of Science Service, and that she had participated in the selection of books. I said I was surprised to find the herbal in the Science News Books section of the magazine. “Well, not all of our books are technical-science type of things, and that would be one of them,” she responded. “But you see also there [in the ad] we have the Leonardo da Vinci T-shirt.” “But that’s not pseudoscience,” I countered. I added that the mere inclusion of such a book in this section of *Science News* suggests approval.

To Live and Supplement (or Not) in L.A.

Dear Mr. Raso:

I am a subscriber to *Nutrition Forum* and follow with interest your exposés of claims regarding nutritional supplements.... I am writing to inquire if you know anything about Biometrics International, Inc., [a multilevel marketing company] in Newbury Park, CA.... A well-meaning friend sent me a box of... *Turbo Sport* and *Bio Fuel* [which purportedly]... do all sorts of wondrous things, such as enhance metabolism, combat fatigue, reduce the absorption of bodily fat, etc. It "cured" a baby with Tuberous Sclerosis (??)....

The vitamin supplements contain as much as 500% of the RDA.... I enclose some of the printed matter that accompanied the bottles....

Needless to say, I have no intention of taking the stuff and am returning it to the sender....

—Elaine S. Hofberg, Los Angeles, Cal.

There is no information on Biometrics in my databases. I called the company on March 1. The woman who answered the phone requested that I inform her of my name and address, and she said she would have a distributor call me to arrange a meeting. She described the company's distributors as "very knowledgeable." I told her that, since I didn't know anything about the company's supplements, a meeting would be "too much, too soon"; and I asked her if she could send me information. She said she couldn't.

Tuberous sclerosis (TS) is a syndrome that includes convulsive seizures and progressive mental disorder. Actually, an item in the issue of *Bio News* that you sent me suggests that ingestion of two Biometrics supplements caused "personality changes" in a 2-year-old girl with TS, "almost immediately."—J.R.

Comments: One need not delve into the scientific literature to assess some of Biometrics' claims. Modest skepticism will do. For example, the flyer Ms. Hofberg sent me states, without a reference, that *Bio Fuel* "ensures proper cellular nourishment" and thus "reduces cravings for foods that are high in sugar and fat." What distinguishes "proper" from improper "cellular nourishment," and how does "proper cellular nourishment" reduce cravings for sugary and fatty foods? The flyer further states, also without a reference, that *Lite-N-Up* "reduces the absorption of dietary fat and sugar" and "may help you feel less hungry." Does the possibility of a decrease in hunger warrant ingestion of a product that (allegedly) hinders a fundamental physiological process? If ingestion of the product *guaranteed* a decrease in hunger, wouldn't it have side effects, e.g., indigestion? The flyer also claims that *Get-Go-N* "provides a burst of physical and mental energy" for "mood enhancement" and increases alertness and stamina; and that *Power Melt* "enhances the body's natural metabolic process of thermal energy generation, so that you burn more calories to generate body heat." Aren't all these descriptions more suggestive of drugs than of dietary supplements?

Multilevel marketing (MLM), also called network marketing, is a form of direct sales in which independent distributors sell products to various contacts and recruit persons to sell and recruit. Recruiting a certain number of people entitles a distributor to a percentage of their sales. In a paper he prepared for a 1991 conference on religion and capitalism, David G. Bromley of Virginia Commonwealth University described MLM organizations as "quasi-religious." He stated:

For the quasi-religious corporates, personal commitment and belief in the cause are more important than specific skills or prior experience.... Once recruited, distributors form tight-knit networks of true believers who are on a mission and who seek to enlist others to their cause. Quasi-religious corporates usually have charismatic leaders, minimal bureaucracy, few rules and little hierarchy of authority. Their allure is the promise to restore a naturally ordained order of prosperity and unity of life.

MLM companies encourage, and feed on, faith and simplism.

Food Stamp Fraud Revisited

Dear Mr. Raso,

The March/April 1995 *Nutrition Forum* cites an Associated Press [AP] report suggesting that "\$2 billion of the \$24 billion in food stamps issued annually are redeemed illegally." This figure is much misunderstood, and in the current political climate surrounding food and nutrition programs, deserves to be explained.

The \$2 billion figure quoted does not refer to the street and retailer trafficking discussed in your brief...—it refers to food stamps overpaid to recipients by local agencies. According to USDA's Inspector General, the Department over-issued \$1.8 billion in food stamps in fiscal 1993 (the most recent year for which figures are available). The Inspector General estimated that 23 percent of this amount was overpaid because of recipient fraud. The remainder was the result of worker error.

At a congressional hearing in February (the source of your AP report, I suspect), officials from the USDA, Secret Service, and Justice Department could not estimate the extent of street and retailer trafficking, although they acknowledged it is significant.

As USDA officials have said, rates of over-issuance and trafficking must be lowered. Improving the integrity of the Food Stamp Program would allow us to properly focus on the very real nutritional benefits that it provides to 26 million persons, the majority of whom are children.

—Dominic Madigan, Editor, *Nutrition Week*
(published by the Community Nutrition Institute),
Washington, D.C.

We appreciate the clarification.—J.R.

B r i e f s

FTC goes for "Jug-ular." In April, as part of a settlement of charges by the Federal Trade Commission (FTC), Third Option Laboratories Inc., of Muscle Shoals, Alabama, agreed to pay \$480,000 and to notify customers that it had made false health

claims for its product "Jogging in a Jug," a mixture of apple juice, grape juice, and vinegar. The company had claimed that the drink, which sold for \$6 to \$7 per half-gallon, alleviated arthritis and heart disease, lowered serum cholesterol, cleaned

internal organs, and reduced spasms and swelling of the legs. [Washington Post, April 14, 1995]

Bee aware. A consent order issued in January by the Federal Trade Commission (FTC) prohibits Bee-Sweet, Inc., of North Carolina, from representing bee pollen products as a cure or palliative for certain conditions and ailments, and from "misrepresenting the existence, contents, validity, results, conclusions, or interpretations of any test or study." [Federal Register 60:10861, 1995]

Bone to pick. A consent order issued in January by the FTC prohibits California's RN Nutrition, which markets the calcium supplement *BoneRestore*, from using the product's name "in a misleading way." The order also restricts the company's use of testimonial endorsements that do not typify results. [Federal Register 60:6533, 1995]

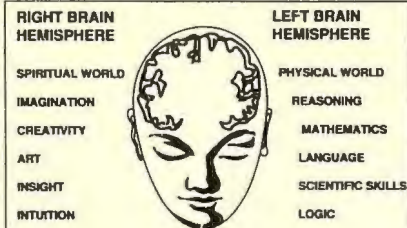
Free sample. *Probe* is a unique monthly newsletter of science and health edited and published by investigative journalist David R. Zimmerman, who set up the periodical in 1989 to avoid censorship. For a free sample, send a SASE (postage is 55¢) to: The Probe Newsletter, Inc., Box 1321, Cathedral Station, New York, NY 10025-1321. You may request a free copy of the April 1 issue, which centers on alternativest incursions into the medical "heartland." A one-year subscription costs \$60. For 13 issues, please mention this brief and send payment with order.

Gov.-run "natural" clinic. In February, the eleven members of Seattle's Metropolitan King County Council unanimously approved a motion to set up the country's first government-run clinic for "natural medicine." Bastyr University will manage the center, and staffers will include "alternative-therapy providers," according to the February 25 edition of the *Seattle Times*.

Nightingale-Conant's
Journal of Mental Science

JACK RASO'S
HUGE SUCCESS POTENTIAL
RELEASED BY BRAIN-WAVE TRAINING

**Raso can have a magical
leap in success says Silva Mind
Control graduate, Burt Goldman**
Palm Springs, California — Burt Goldman, a man who after being through a bankruptcy, experienced a "magical" leap in success due to Silva Mind Control. He goes on to say that anyone can have the same experience he did. Here, in his own words, is his story —



Part of mailing received in March from Nightingale-Conant Corporation, in Niles, Illinois. (The section containing the head illustration was adapted, after receipt, for *NF*.) For a description of Silva mind control, see the previous issue of *NF*.

In the Next Issue (16 pages):

“Anti-Science Librarians and Book Reviewers”

“Back to School (Daze)”

“Healthcare Esoterica” (Part 6)

FORUM

Nutrition

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In early May, I received from author and antiquackery activist Kurt Butler a photocopy of his and another review of my 1993 book, *Mystical Diets: Paranormal, Spiritual, and Occult Nutrition Practices*. In the March/April 1995 issue of the *Journal of Nutrition Education (JNE)*, registered dietitian Phyllis Havens' pan preceded Butler's commendatory piece. She stated:

From believer...to jaded skeptic, Raso has chosen this book to be a catharsis of all of his experiences with a "representative variety" of metaphysical beliefs and "religious" health practices....[He] describes his encounters with practitioners and the history of their controversial healing therapies [sic] and diet plans, attacking them all as "unscientific, cultist, elitist, and silly."

However, none of my published writings includes the word *cultist*, *elitist*, or *silly*. Not even the dust jackets of my two books bear any of these three words! The terms "jaded" and "representative variety" are also absent from my published writings. Butler and I conversed by phone on the day I received the photocopy, and he proposed writing the following article.

On May 6, after our conversation, I mailed a letter to *JNE's* "Reviews Editor," Laurie J. Chang, M.P.H. Therein, I informed Ms. Chang that *Mystical Diets* does not include the words *cultist*, *elitist*, and *silly*. On June 19, managing editor Karen Price told me that *JNE* would print a correction.

See "Editor's Note" on page 52. — J.R.

ANTI-SCIENCE LIBRARIANS AND BOOK REVIEWERS

Kurt Butler

Rationalist critics of unscientific theories and anti-science scams concerning nutrition and health have always had rough going. Reporters, talk-show hosts, and publishers and retailers of books and magazines strongly prefer crackpots, miracle mongers, and supplement pushers. But there are others in positions of literary influence siding with the irrationalists. The events I recount in this article illustrate what I think is a growing problem that educators and health professionals, especially nutritionists, should address.

Rationalists Need Not Apply

In 1992, Prometheus Books published my *Consumer's Guide to "Alternative Medicine."* Based on a quarter-century of study, it is a compilation critical of scores of supposed remedies, most nutrition-related and most bogus. Prometheus sent review copies and a press release to several hundred newspapers, magazines, electronic news outlets, and talk shows. I personally mailed and faxed friendly letters to most of the talk shows and some of the print media, saying I would be happy to discuss the book or adapt portions of it.

Considering all this effort and expense, I was sure I could soon chip away at alternative medicine's free ride

with the media. Alas, few media contacts called me, and I participated in about ten shows—by phone. In Hawaii, where I live, talk shows and newspapers ignored the book, but they have long been quick to interview and promote every celebrity quack who visits the state. The media seem interested in unscientific and fringe health practices mostly from a pandering, sensationalist point of view.

So do book retailers. The big chains make millions of dollars selling an endless stream of "new and improved" books on diet and health, most of them worthless and some dangerous. They generally don't stock skeptical books that could spoil the party. Imagine a Waldenbooks ad campaign and window display for a book that exposes a dozen of its recent and current bestsellers as little more than lucrative hoaxes.

Apparently, small independent bookstores aren't much better. I wanted to make the *Consumer's Guide* available to acquaintances on rural Oahu through such a store. I asked the owner if he would stock the book on consignment—no charge to him unless he sold it. He glanced through it, lingered for a moment in the section on chiropractic nutrition fraud, then contemptuously tossed the book to me. "I won't carry a book that slanders chiropractors," he said. Most of the books in the health section of his store were questionable, including two chiropractic tracts.

Of course, there is no chance of placing rationalist books in health food stores. Because rationalist books on health and nutrition are widely unwelcome, libraries are crucial.

Guide Pronounced "Extremely Biased and One-Sided"

Endorsements, even raves, from such quality periodicals as the *American Journal of Health Promotion*, *Cooking Light*, and the newsletter of the National Council Against Health Fraud encouraged me. I assumed that the librarians who acquire books for the thousands of public, private, and academic libraries across the country would be fair-minded and ensure the accessibility, if not the visibility, of my work.

I was wrong. In June 1994, Prometheus Books forwarded to me a copy of a review in *Academic Library Book Reviews (ALBR)*, a journal published in Lynbrook, New York. The reviewer, identified only as "JMC," had savaged my labor of love and reason as "extremely biased and one-sided" and rated it "not recommended." JMC did not cite any statements in my book to support the allegation of extreme bias, yet recommended *The Encyclopedia of Alternative Health Care* (which I had critiqued in my book) for balance. The encyclopedia is a "love feast" for proponents of dozens of dubious systems and methods, including ayurveda, Bach flower therapy, bioenergetics, flower essence therapy, food combining à la Natural Hygiene, homeopathy, iridology, macrobiotics, "muscle testing" à la applied kinesiology, orthomolecular medicine, past life therapy, polarity therapy, radiesthesia, Radix, reiki, and shamanism. According to its cover, the author, Kristin Gottschalk Olsen, holds a master's degree in "Holistic Health Education" from John F. Kennedy University. The "General Catalog 1991-1994" of John F. Kennedy University (JFKU) in Orinda, California, stated:

The Master of Arts in Holistic Health Education is the only degree program in the United States that combines training in education and communication with the study of holism, somatic counseling and movement, with an emphasis on how they apply to individual, group and family well-being....Students receive theoretical grounding in the nature of consciousness, mind/body/spirit interaction, and principles of holism....Disease is no longer viewed as an externally imposed process to be cured, but as an opportunity to learn about oneself, one's relationships and one's environment.

(JFKU continues to offer an M.A. program in "Holistic Health Education," through the Department of Holistic Health of its Graduate School for Holistic Studies, formerly the Graduate School for the Study of Human Consciousness.)

Olsen does not provide references in her encyclopedia. She merely refers readers to specific alternative publications and organizations. She does not refer to any skeptical writings or organizations.

I fired off an angry letter to the publisher and the editor of *ALBR*, with a copy of the letter for JMC and a ten-dollar

check for a sample copy of the journal. I hoped to respond to the review through a published letter to the editor or an ad. In my letter, I asked for information about JMC's credentials and for previous *ALBR* reviews of health-related books. I challenged JMC to specify any false statements or unsupported conclusions in my book, and to submit my book, her review, and Olsen's encyclopedia to a panel of health professionals and academics for a threefold review.

The Plot Thickens

Months passed without a response. I phoned *ALBR*'s office several times. Each time, an answering machine took my call, and I provided my name and phone number, but I did not receive a return call. I mailed a copy of my original letter to *ALBR* and phoned the office several more times, to no avail.

Finally, about a year after publication of JMC's review, I engaged a private investigator in Brooklyn, New York, and asked him to contact *ALBR*'s publisher and editor, hand-deliver a letter from me, and request a reply. The PI sent me his report in May 1994. In it, he said he had made several attempts to speak with someone at *ALBR* by phone, without success. Then he had followed the address *ALBR* had given to Prometheus Books—to a huge commercial warehouse that bore no indication of the journal. However, Preston Threiber greeted the investigator there and said he was *ALBR*'s publisher. Threiber stated that the editor, Hanna Merker, wasn't there and that she visited about twice a month. He expressed familiarity with my letter and said he didn't have an explanation for Merker's failure to reply. He refused to provide a list of library subscribers to the journal. The PI gave Threiber my new letter and a copy of my first letter. Threiber promised to forward the letters to Merker and said she would respond shortly. She didn't.

The PI obtained a sample copy of the journal and sent it to me. Inside the back cover is a list of some fifty reviewers. From this I gathered that JMC was: "Janet M. Coggan, MLS, University of Florida Health Science Center Library, Gainesville, a reference librarian with a particular interest in patient education and consumer health." I sent her a copy of my year-old letter and requested a prompt reply. I also sent a copy to the director of the library, Faith Meakin, and inquired about Coggan's credentials. In my supplementary letter to Coggan, I wagered \$1,000 that a panel of at least ten health professionals and academics who use the library would disagree with her assessment of my book and would judge her unqualified to review health-related books for libraries.

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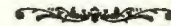
Months passed without a response from either Coggan or Meakin. Finally, on May 2 of this year, I reached Coggan by phone at her office. I introduced myself and asked her if she had received my letter. She said yes. I inquired about her credentials. She responded angrily that she didn't have to talk to me, and she told me to complain to Hanna Merker. As I responded, she hung up. An hour later, I faxed her a letter, in which I stated my belief that people who tell students, professionals, and academics in the health field what to read should be qualified in the field. She didn't respond.

I asked a research firm to perform a computer search for all of Coggan's book reviews. The firm couldn't find any, and told me that book reviewers are not indexed and that there is no practical way to find all of a given writer's reviews.

Recommendations

Ideally, any book review published in a given periodical should be reviewable in the periodical by the book's author, primary author, or editor. However, my tribulations with *ALBR* provide practical lessons for nutritionists, health educators, and librarians:

- Skeptical health professionals should volunteer their expertise to the acquisition committees of libraries. They should also donate reliable books. Librarians should seek their input.
- Skeptical health professionals should offer to write book reviews.
- Editors of health-related journals should inspect the credentials and previous writings of reviewers, and should not retain reviewers with a demonstrable anti-science bias.
- The backgrounds of medical librarians who decide the acquisition of books should include at least several postsecondary health courses.
- Librarians should make a concerted effort to limit acquisition of "health porn" books and to increase acquisition of pro-science health books.



Kurt Butler, M.S., is a former science teacher and the coauthor of *The New Handbook of Health and Preventive Medicine*, published by Prometheus Books.

BACK TO SCHOOL (DAZE)

Jack Raso

This article is a continuation of "School Daze: The Fast Track to Nutrition 'Credentials'" [NF 12:13-19, 1995].* Between mid-July 1994 and February 27, 1995, with *Nutrition Forum* letterheads and envelopes and first-class postage, I mailed (1) a one-page itemized request for perusable information and (2) a one-page questionnaire to 50 "credentialing" organizations with addresses in 23 states. Selection of organizations was arbitrary. However, all had offered health-centered or customizable didactic programs within the previous seven years. By February 26, my associates and I had received course descriptions from 27 organizations, including questionnaire responses from eleven. Each offered at least one didactic program that: (1) covered human health and nutrition, or was adaptable to such a focus; (2) did not involve attendance, or required short attendance; and (3) culminated in a certificate (certification), a nondegree diploma, or a graduate degree.

Transitions

The U.S. Postal Service returned inquiries addressed to eight organizations, but I contacted three of these during

the aforesaid period. Of these eight addressees, the five I did not contact during the study were: (1) Clayton University, (2) the International Institute for Advanced Studies, (3) Nutritionists Institute of America, Inc., (4) Southwest University, and (5) Westbrook University.

Southwest University is operational. Sometime between 1989 and 1992, it moved from one suburb of New Orleans, Louisiana, to another: from Metairie to its present address, in Kenner. The university's 1989 catalog offered "non-residential" programs leading to Doctor of Philosophy degrees in counseling psychology, education, health services administration, and "holistic health sciences." However, the 12th edition of *Bears' Guide to Earning College Degrees Nontraditionally*, published in April, states: "In late 1994, the Board of Regents of Louisiana attempted to close Southwest University. The University went to court, where the closing order was quashed, and the university was subsequently licensed by the Board of Regents, with Southwest agreeing to stop offering doctorates." I called Southwest University on May 12, requested printed material, and received its 1994/95 catalog later that month. I describe the school in the penultimate section of this article.

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When I phoned Clayton University, an unaccredited correspondence school, in November 1992, a prerecorded message stated that the school was neither mailing catalogs nor admitting students "at this time." According to *Bears' Guide*, Clayton University apparently functions only as a "transcript service" in the U.S.; and the International Institute for Advanced Studies is part of Greenwich University, also an unaccredited correspondence school [see NF 12:16 and 18, 1995]. We also did not receive any response from Somerset University, another unaccredited correspondence school. The *Guide* says of Somerset: "In the past, correspondence has been sent to a convenience address in Metairie, Louisiana, but now it appears to be going directly to England, even though the university cannot legally operate in England."

Fast Tracks...or Dead Ends?

In this section are descriptions of 12 of the 27 organizations from which we received course literature during the study. Except for comments, they: (1) merely convey questionnaire responses and/or representations made in promotional literature my associates and I received between mid-July 1994 and February 26, 1995; (2) do not cover undergraduate degree programs; and (3) do not cover programs without a distinct, alleged, or optional relation to nutrition. In the "comments" sections, the term "accredited" means "possessing accreditation by an entity recognized by the U.S. Secretary of Education or by the Commission on Recognition of Postsecondary Accreditation (CORPA)." An asterisk preceding the name of an organization indicates receipt of questionnaire responses from that organization.

American Academy of Nutrition, Corona del Mar, California. Founded in 1985, the academy offers The Comprehensive Nutrition Program, a "guided independent study" program that, in February 1995, consisted of six courses. Each course leads to a Certificate of Continuing Education. The program leads to a diploma. The academy is accredited by the Accrediting Commission of the Distance Education and Training Council. Prerequisites for admission: none. Requirements for completion of program: a grade of at least "C" ("average") in all courses. Duration of program: less than six months to 15 months. One of the faculty members is a chiropractor and "Certified Applied Kinesiologist" [see NF 12:26, 1995]. Another is Ann Louise Gittleman, M.S., C.N.S. (Certified Nutrition Specialist), author of several books, including the bestseller *Beyond Pritikin*.

Comments: The academy is accredited. Clinical dietitian Elaine Marie Kane, R.D., reviewed *Beyond Pritikin* (Bantam Books, 1988), for *Current Diet Review*. In the November/December 1988 issue thereof, she stated:

Beyond Pritikin is an attempt to disqualify the benefits of a low-fat diet and a misrepresentation of the scientific evidence surrounding the essential fatty acids....[A]...dietary restriction the author includes is food combining, which is not substantiated

by any scientific literature....The author also claims that essential fats will control yeast infections. The facts that the author refers to are taken from two books, *The Missing Diagnosis* and *The Yeast Connection*...which contain purely conjectural information....Finally, Gittleman states: "essential fat alleviates 90 percent of PMS tensions and discomfort." However, current clinical data do not link PMS to any dietary deficiency for fats, vitamins or minerals.

***Ayurveda Holistic Center, Bayville, New York.** Founded in 1991, the center offers a correspondence program leading to the "certification degree" of "Ayurvedic Practitioner." Prerequisites for admission to either program: (1) an ayurvedic consultation; (2) following the resultant ayurvedic plan; (3) reading *Ayurvedic Healing*, *The Yoga of Herbs*, *Yoga Vani*, and *Ayurveda: The Science of Self-Healing*; and (4) a personal interview. Requirements for completion of programs: "successful" completion of homework (which takes 2-4 hours per week), internships, and final exams. A question in a "sample chapter" of the course reads: "Which herbs and spices would you use to heal female reproductive problems?" The chapter also tells students: "Choose 10 cooking spices and begin to use them medicinally for yourself and family." On January 14, 1995, all of the center's nutrition-related programs had 40 enrollees and one faculty member.

Comments: I received two mailings from this admittedly unaccredited center during the study. According to a leaflet in the earlier mailing, the center offered three programs leading to a "certification degree": (1) a correspondence course, (2) a 44-hour on-site program, and (3) a 14-day off-site program for groups of 5-10 students. I received a different leaflet with the questionnaire. It did not include a description of an off-site group program, and it described two program sections, each of which takes 108 hours and leads to a "Certification Diploma." Students spend 65 hours per section in classes at the center.

The Ayurvedic Institute, Albuquerque, New Mexico. Founded in 1984 in Santa Fe, New Mexico, the institute offers a 12-lesson correspondence course leading to a "certificate of completion." Lessons include "Diagnosis" and "Medicinals." Prerequisites for admission: none. Requirements for completion of program: (1) taking three written exams and (2) finishing the program within a period of one year.

Comments: The institute is admittedly unaccredited and does not offer a degree program. A letter therefrom dated January 10, 1995, stated: "Our institute does not offer nutrition related courses." However, three other components of this mailing listed "Food" as a lesson in the correspondence course: a catalog, a flyer, and the "table of contents" from the correspondence course. They likewise listed "Therapeutics of Indigestion." Moreover, according to the "table of contents," three other lessons cover nutrition-related subjects.

***Bastyr University** (formerly John Bastyr College), Seattle, Washington. Founded in 1978, Bastyr offers a 7-course Distance Learning Program that leads to a "Certificate of Completion for the Natural Health and Nutrition Program." In August 1994, this program had four faculty members. Courses include "Fundamental Principles of Chinese Medicine," "Introduction to Nutrition in Natural Medicine" (which covers "detoxification"), and "Nutrition and the Natural Products Industry" (which covers the "clinical use" of nutritional supplements). Prerequisites for admission: none. Requirements for completion of program: (1) completion of course assignments and (2) taking a proctored final exam.

Comments: Bastyr is accredited by a regional accrediting body. Its N.D. program, which requires residence, is accredited by the Commission on Accreditation of the Council on Naturopathic Medical Education. Its Didactic Program in Dietetics, which also requires residence, is approved by the Division of Education Accreditation/Approval of The American Dietetic Association. Its M.S. program in Acupuncture and its M.S. program in Acupuncture and Oriental Medicine are accredited by the National Accreditation Commission for Schools and Colleges of Acupuncture and Oriental Medicine.

Columbia Pacific University (CPU), San Rafael, California. The School of Health and Human Services offers a customizable, self-paced "independent study" program that leads to a Ph.D. or D.Sc. degree. Prerequisites for admission: a master's degree or "equivalent." Requirements for completion of program: (1) completion of workbooks, (2) earning 48 credits through "coursework" and "independent learning contracts," and (3) a dissertation. In an introductory form letter that was part of a mailing postmarked February 3, CPU's president stated that the university had more than five thousand students and provides a "special opportunity" for students to convert their "professional skills and background" into "academic credits" toward a degree.

Comments: Founded in 1978, CPU is unaccredited. Neither *NF* associate editor David Xu nor I received a response to our formal request for information, dated July 17, 1994. The "Admissions Bulletin" costs \$5. In January 1995, I anonymously asked CPU to send information to a relative of mine, who received only a leaflet. Catalogs dated October 1989, January 1993, and January 1994 stated that the university's "institutional memberships and affiliations" include the American Holistic Medical Foundation, the American Holistic Nurses Association, the Association for Holistic Health, and the Coalition for Alternatives in Nutrition and Health Care. Incidentally, William Harwood, M.A., M.Litt., author of *Mythology's Last Gods* (Prometheus Books, 1992) holds a Ph.D. degree from CPU.

East West School of Herbalism (East West Herb School), Santa Cruz, California. East West offers two correspondence courses: (1) a 12-lesson "Home Study

Course in Herbal Medicine" and (2) "The Professional Herbalist Course," which includes 36 lessons (12 from the former course). Lessons range in length from about fifteen pages to 50 pages. Each lesson includes a test and projects. Students must complete these and submit them for grading. On completion of the "Professional" course, students have the option of taking a final exam, successful completion of which entitles them to a "certificate in Herbal Studies." Those who complete the "Professional" course can "diagnose according to wholistic Oriental healing systems and prescribe herbs...." Prerequisites for admission to either course: none.

Comment: The school is unaccredited.

Goddard College, Plainfield, Vermont. Chartered as Goddard Seminary in 1863 and as a college in 1938, Goddard offers an "individually designed" off-campus program in liberal arts studies that leads to an M.A. degree. Requirements for completion of program: (1) attendance at a 1-week "beginning-of-semester residency" every semester, and (2) earning 36 "semester-hour equivalents of graduate credit." Duration of program: at least 3 semesters.

Comments: Goddard is accredited by a regional accrediting body. According to its graduate "Interim Bulletin 1990," completion of the M.A. program requires creation of a "final product," such as a "formal thesis," that represents a "major learning activity."

Hippocrates Health Institute, West Palm Beach, Florida. Hippocrates offers a "Health Educator (H.E.*)" program that requires residence for eight consecutive weeks, includes a workshop in neuro-linguistic programming, and culminates in "full certification." Students are "exposed to" such "modalities and disciplines" as aromatherapy [see *NF* 12:31, 1995], chiropractic, colon hydrotherapy, "Cranial Sacral" therapy, "electromagnetics," holistic dentistry, iridology, live cell analysis, polarity balancing, reflexology [see *NF* 12:29-31, 1995], and vibrational healing [see *NF* 12:31, 1995]. Prerequisites for admission: (1) an essay, no longer than three "typed" pages, that emphasizes why the applicant wants to attend the program; and (2) a phone interview. Requirements for completion of program: (1) completion of all writing assignments; (2) an "acceptable" attendance record in all classes; (3) demonstration on exams of mastery of fundamental Hippocrates concepts; (4) a grade of "pass" on the midterm and final exams; (5) giving at least one 15-minute talk on the Hippocrates lifestyle; (6) reading *Food Enzymes: The Missing Link to Vibrant Health* (sic), *The Hippocrates Diet and Health Program*, *Hippocrates Health Program*, *Sprouts For The Love of Everybody*, *The Wheatgrass Book*, and *Belief*; (7) writing a "critique," consisting of at least 750 words, of two of the aforementioned books; and (8) submitting, by the end of the seventh week, a portfolio including one's résumé, a "private lifestyle evaluation," and an outline of a "health/lifestyle course."

Comments: The Hippocrates system is a variant of nature cure. Dr. Ann Wigmore (1909–1994) founded this unaccredited institute in 1957, developed wheatgrass therapy, and authored *Why Suffer?* and *The Hippocrates Diet and Health Program* (1984). In the latter book, she stated that enzymes store “life energy” and that this is not measurable scientifically. *Food Enzymes: The Missing Link to Vibrant Health* is a misnomer for *Food Enzymes: The Missing Link to Radiant Health*, whose author is Humbart “Smokey” Santillo [see NF 12:4, 1995]. According to a profile of Santillo I received in 1994 from Hohm Press, he earned a “Doctor’s degree” from the Concept-Therapy Institute (see *Alternative Healthcare: A Comprehensive Guide*) and obtained the “degrees” of: “Doctor of Naturopathy” (from the Anglo-American Institute of Drugless Therapy [see NF 12:5, 1995]), “Health Practitioner” (from Hippocrates Health Institute of Boston [a defunct branch of the institute]), “Iridology Certificate of Merit,” and “Master Herbalist” (from the School of Natural Healing [see below]). Brian R. Clement, the institute’s director, wrote two of the other books on Hippocrates’ required reading list: *Hippocrates Health Program: A Proven Guide to Healthful Living* (1989) and *Belief: All There Is* (1991). In the latter, he states: “Belief can bring you anything that you desire.”

On January 17, I phoned the home of H.E. program director John Cattone, N.D., and requested information about H.E. certification. Later that day, on my answering machine, Cattone confirmed his wife’s statement that the program leads to a “Health Educator certificate.” Evidently thinking I was a potential enrollee, he left two further messages on my machine, on January 19 and January 26, asking me to phone him. I did not. On the 19th, he stated: “We’re...carrying the prices through to...the end of January.” A week later, he stated: “The 31st is our deadline for our 1994 prices to be extended throughout the 1995 season.” And on Sunday, February 12, he stated: “I just wanted to let you know that this is the last three days of our 1994 program prices. On Tuesday the 14th, this Valentine’s Day, the last of our obligations to people...that have [had] prices extended to them [ends] on that date, and the 1995 prices will officially go in[to effect] at the end of that day.”

***Institute of Chinese Herbology (ICH), Oakland, California.** Founded in 1986, ICH offers two “home study” programs: (1) Comprehensive Practitioner Training (125 hours), which leads to a “Certificate of Completion,” and (2) Advanced Certified Herbalist Training, which leads to “full Herbalist Certification.” Prerequisites for admission to the “comprehensive” program: none. Prerequisites for admission to the “advanced” program: completion of the “comprehensive” program. Requirements for completion of Comprehensive Practitioner Training: (1) taking all program courses and (2) completing a “self-administered review assignment.” Requirements for completion of “advanced” training: (1) writing 30 case studies and (2) passing a written “take-home” exam.

Comment: ICH is admittedly unaccredited.

Professional Career Development Institute, Atlanta, Georgia. Through The School of Fitness and Nutrition, the institute offers The Professional Fitness and Nutrition Program, a self-paced, 18-lesson “home study” course leading to a diploma that symbolizes “professional fitness and nutrition expertise.” Students can proceed from enrollment to graduation in less than a year. The institute is accredited by the Accrediting Commission of the National Home Study Council. Prerequisites for admission: none.

Comments: Both CORPA and the U.S. Secretary of Education recognize the Distance Education and Training Council (DETC, previously called the National Home Study Council). According to the DETC’s 1994–95 “Directory of Accredited Institutions,” the Professional Career Development Institute was founded in 1987.

***School of Healing Arts, San Diego, California.** Founded in 1984 as the Institute of Health Sciences, the school, now nonprofit, received its current name in 1990. It is “approved” by the California Council of Private Post Secondary Vocational Education (CCPPVE), the Board of Registered Nurses, and the American Board of Hypnotherapy and Vocational Rehabilitation. The school offers a 300-hour “home study” program leading to certification as a “Nutritional Counselor.” Completion thereof generally takes 4–6 months. Prerequisites for admission: none. Requirements for completion of program: (1) a 50-hour “internship” involving case studies of self-selected “clients,” (2) a “thesis,” and (3) taking a written final exam. Courses include Herbology, Oriental Health Assessment/Body Psychology, and Body Chemistry Balancing, which covers “hair analysis” and “nutritional interpretation” of blood and urine. In late January 1995, the program had 50 enrollees and eight faculty members (only one of whom was full-time).

Comment: The school is admittedly unaccredited.

***The School of Natural Healing (SNH), Springville, Utah.** Founded in 1953, SNH offers a Master of Herbology program that comprises: (1) a 41-“course” Herbalist Home Study program that leads to “The School of Natural Healing Herbalist Diploma” and the title “Herbalist;” (2) a Master Herbalist Home Study program, which includes the aforementioned program plus 15 “courses,” and which leads to eligibility to pursue certification, and (3) a 6-day Master Herbalist Certification Seminar, which takes place at the school, includes courses titled “Diagnostics” and “Drug Substitution,” and leads to a Master of Herbology diploma and the title “Master of Herbology.” Completion of the Master Herbalist program takes 12–14 months if the student studies for one hour daily. One of the required textbooks in the Master Herbalist curriculum is *Regenerative Diet*. Its author, SNH founder John R. Christopher, N.D., M.H., was an iridologist who died in 1983. The study guide for this book includes questions concerning “the difference between live and dead food” and the “mono-diet.” Prerequisites for admission to the Master of Herbology program: none.

Requirements for completion of the Master Herbalist program: (1) a grade of at least 70% on exams and (2) a 5,000-word "master's thesis" on one herb. Requirements for "Master of Herbology" certification: (1) completion of the Master Herbalist program, (2) attendance at the Master Herbalist Certification Seminar, (3) completion of all assignments, and (4) a grade of at least 70% on exams. In August 1994, the school had 1,400 enrollees and nine faculty members (four of whom were full-time). Over nine hundred people have received an Herbalist certificate from SNH, and over two hundred a "Master Herbalist" diploma.

Comments: The school is admittedly unaccredited. On January 9, I conversed by phone with the assistant registrar, Dean Morris, who told me that completion of the 7th level involves reading *Regenerative Diet*. He vaguely described the diet as a "mucusless diet system" [see NF 12:28, 1995] that "works with herbs as supplements." I gather from the study guide for the book that "mucusless" means "consisting mostly of raw (unprocessed, unheated) foods."

A course catalog I received from SNH in late February states: "Dr. Christopher's message is that God intended that every man and woman have the knowledge to properly care for his or her own body." With this catalog came a required textbook in the Herbalist Home Study curriculum: *Every Woman's Herbal* (1994), which recommends Bach's Rescue Remedy® [see NF 12:26, 1995] for parturition and for postpartum shock. The book describes this product as "a homeopathic preparation made of flower essences." It also recommends ingestion of comfrey tea for postpartum perineal soreness or swelling, jaundice in newborns, and broken bones. Ingestion of comfrey is risky.

Honorable Mentions?

Below I describe, largely in the manner stated above, two organizations I did not contact during the study.

Pacific Western University, Honolulu, Hawaii. Founded in 1977, this "off-campus, non-traditional, alternative education university" offers self-paced programs leading to customizable master's and doctoral degrees in various fields. Its catalog lists 26 faculty members, four of whom hold doctorates only from Pacific Western University [see "Comments"]. Prerequisites for admission to master's degree program: (1) a "legally conferred" bachelor's degree and (2) "professional experience." Prerequisites for admission to doctoral program: (1) a "legally conferred" bachelor's degree, and (2) a "legally conferred" master's degree, or "the equivalency in credits/experience." Requirements for completion of either program: (1) completion of a "fill-in-the-blanks" résumé ("portfolio guide"); (2) answers (three of which must comprise 200 words each) to four career-related

questions; (3) completion of a "Graduate Qualifying Exercise," usually 12 pages long; and (4) a "Master's Thesis" or "Project" for a master's degree, or, for a doctorate, (a) a dissertation or (b) a published book, a set of published articles, or "equivalent accomplishment," plus a "Research Summary." Duration of program: much less than a year to more than two years. In May 1995, students and alumnae/i totaled 17,000.

Comments: The university is admittedly unaccredited. Apparently, the doctorate held by R. Frank Sutter, Vice President and Director of Admissions, also came from Pacific Western.

Southwest University, New Orleans (Kenner), Louisiana. Southwest offers "non-residential," customizable programs in various fields. The list of majors in its 1994/95 catalog includes "Holistic Health Sciences." Prerequisites for admission to master's degree programs: (1) a bachelor's degree from a "recognized" college or university, or (2) 180 quarter units (120 semester hours) from a "recognized" college or university, or (3) the "equivalency" thereof. Requirements for completion of program: (1) completion of 45 quarter units above the bachelor's degree, 35 of which must be completed with Southwest; and (2) a "Master's Thesis" or completion of additional courses. Duration of program: one year.

Comments: Founded in 1982 in Phoenix, Arizona (per *Bears' Guide*), Southwest is unaccredited. One of the "Primary Degree Programs" the 1994/95 catalog describes leads to a bachelor of science degree in "holistic health sciences." Courses therein include "Nutrition, Health and Disease" and "Reflexology Techniques." On May 25, I phoned the university and asked administrator Reg Sheldrick, Ph.D., if Southwest could adapt this baccalaureate program to a master's degree. He responded:

Yeah. Let me tell you this: Back about, maybe, five or so years ago, we offered a bachelor's, master's, and doctorate; and it was very, very popular, and a lot of people enrolled in it. *But*, over the years, less and less and less textbooks became available; and as they discontinued and went out of print and out of stock and not reprinted, we dropped the doctoral program; and then about two years ago, half the books we used in the master's [program] went out. But...most of the books we used in the bachelor's stayed in. And so we kind'a revised that a little bit, and we said, if anybody was interested in a master's level, then we could take some of those courses and maybe expand them just a little bit—just a little bit more work for the master's—and perhaps throw in an independent study, in lieu of one textbook-based course. So our master's requirement in...all degree programs except the M.B.A. is 35 units, or 7 study courses.... And sometimes, one of those courses could come from a counseling psychology program....

General Comments

Promotional literature received during the study from 27 organizations, overall, suggests that nutrition-related pseudocredentialing is rampant. At least 21 (78%) of these organizations offered correspondence programs. Terms with which proponents describe such programs include: *alternative education, distance education, distance learning, experience-based education, extension education, external degree studies, home study, independent study, guided independent study, nonresident, non-residential, non-traditional education, and off-campus study*. Degrees available through nutrition-related correspondence programs included: Doctor of Divinity (D.D.), Doctor of Holistic Health (H.H.D.), Doctor of Naturology (D.N.),

Doctor of Naturopathy (N.D.), Doctor of Philosophy (Ph.D.), and Doctor of Science (D.Sc.). "D.N.," incidentally, also represents two other nutrition-related pseudocredentials: the degrees of "Doctor of Naprapathy" [see NF 11:63-64, 1994] and "Doctor of Nutripathy." A Master Herbalist (M.H.) diploma was likewise available through correspondence. Obtaining a Health Educator (H.E.) certificate required residence for eight consecutive weeks. The H.E. certificate, the M.H. diploma, and all of the aforementioned correspondence doctorates were not creditable.



* On May 12, Andrea Case, editor of *Priorities*, told me she had rescheduled publication of my report on nutrition-related "credentialing" organizations for September.

Readers' Forum

The letters below arrived between my virtual completion (in late April) of the May/June 1995 issue of *NF* and its publication.—J.R.

Religion and Blue-Green Algae

Dear Mr. Raso,

Congratulations on another fine edition of *Nutrition Forum* [Vol. 12, No. 2]. It is enjoyable to see a skeptical, iconoclastic mind at work. It is interesting that the subject of religion keeps coming up. Obviously, many people are sensitive about it. I have always thought that there were parallels between the acceptance of health-related belief systems and religious belief systems....But, there is one important difference: There are a few people who get into religion for the money, but there are many people who join health bandwagons for the money. Look at all the Shaklee, Amway, Usana, and other dealers...who sell vitamins, herbs, etc., on multi-level or network marketing [MLM] plans. These programs are half merchandising and half pyramid schemes. I believe it's the money that makes believers out of people.

Many people have urged me to look into blue-green algae as a supplement for vegetarians because it contains vitamin B-12 and a host of trace minerals that are assumed to be lacking in a vegetarian diet. Do you know anything about the use of algae as a food?

—Ralph Cinque

Dr. Cinque's Health Retreat
Buda, Tex.

I covered the quasi-religiousness of MLM companies briefly in the previous issue of *NF*. Blue-green algae are photosynthetic microorganisms classifiable as bacteria or plants. Regarding blue-green algae and vitamin B₁₂, on May 5, I phoned Varro E. Tyler, Ph.D., Sc.D., professor of pharmacognosy at Purdue University. He stated:

Probably most of ...[the vitamin B₁₂ content of blue-green algae] is due to the fact that the stuff is grown in...lakes...in Mexico that are contaminated with fecal matter; and the feces, of course, animal feces, have

considerable B₁₂ in them....I suspect that's where most of it comes from, the stuff not being thoroughly washed before it's dried, because B₁₂ is not, in any quantity at least, a normal constituent in plant cells....I'm not at all sure it's sanitary in most cases....Spirulina is the biggie, of course....Spirulina is a blue-green [alga], but not all blue-green algae are spirulina....It tastes like grass.

In *The Honest Herbal* (1993), Dr. Tyler states: "Depending on the species, dried spirulina does contain between 0.5 and 2 µg. (microgram) per gram of vitamin B₁₂. However, selective assay procedures suggest that more than 80% of the 'vitamin B₁₂' in spirulina is, in fact, analogues of the vitamin which have no vitamin B₁₂ activity in humans." (The RDA for vitamin B₁₂ for nonpregnant, nonlactating adults is 2 µg.) In *Total Nutrition* (1995), Dr. Victor Herbert states that most of the supposed B₁₂ in spirulina and tempeh consists of vitamin B₁₂ analogues, and that some of these may block metabolism of the vitamin in humans.

On June 15, I conversed by phone with nutritionist Regina Capobianco, of New York City. In the premier issue (1995) of *Vegetarian Singles News*, she had advertised *Super Blue-Green™* algae [see NF 5:17-19, 1988] as an "excellent source" of vitamin B₁₂. I told Capobianco that my wife and I were strict vegetarians (untrue) and inquired about vitamin B₁₂. She replied that the product was "very high" in vitamin B₁₂, said she had been a vegetarian for ten years, and claimed that blue-green algae had been her sole source of vitamin B₁₂.

Comments: Ralph C. Cinque is a major proponent of Natural Hygiene [see NF 12:17, 1995; NF 7:33-36, 1990; and NF 3:57-59, 1986]. Although his doctoral degree is chiropractic, he has styled himself a "chiropractic heretic." In a letter to me dated January 27, 1994, he described alternative medicine as mostly nonsense and stated, in effect, that Natural Hygiene "should drop out of the 'alternative' health movement." In another, dated February 14, 1994, he called religion "a form of mass insanity." I would like to hear from other proponents of particular alternativist methods who frown upon alternative healthcare.

"God, etc."

Dear Jack:

I have been a bit concerned about the tone of your remarks regarding Dr. David Sneed's book [NF 11:64-65, 1994] and those directed at religion. However, I feel that your answer to Laura Wilson, R.D. [NF 12:23, 1995], was very well done and addressed my concerns as well. As a Christian agnostic who chooses to believe, I have no argument with your views, but as one who is trying to forge a coalition against irresponsible health care, I do not want to see us get sidetracked onto debates that have no chance of being resolved, i.e., the existence of God, etc. Having focused for years on the behavioral aspects of quackery, I agree with you that it is "religious and quasi-religious notions that facilitate" much of the victimization associated with health fraud and quackery. I'm sure...you realize that in order to be effective in this sensitive area, we have to be very careful with the tone of our language. We need to help each other with this difficult communications task.

Thanks for your dedication and excellent work.

—William Jarvis, Ph.D.

President, The National Council Against Health Fraud,
Inc. (NCAHF)

Perhaps I came down too hard on Dr. Sneed. I have meant to be stimulating, not divisive. However, my chief motivation is a loathing for organized, proselytical irrationalism. I consider patently religious opposition to alternative healthcare equivalent to hypocrisy. Nevertheless, an alliance of agnostics, religious nonbelievers, and religious moderates against health fraud and quackery seems to me not only tenable but very desirable. I emphasize "moderates" partly because faith healing (e.g., Christian evangelical healing), more than a dozen other theistic methods, and exorcism are, when practitioners deliberately distort the truth about them, forms of health fraud.

The statement "God exists" and its negation are vacuous. Further, I suppose that belief in a generic, nondescript God, per se, is innocuous. I am dismissive toward such claims. However, statements such as "Without fail, the angels answer the prayers and calls of all humanity" (*Commune with the Angels: A Heavenly Handbook*, p. XI) are, in my opinion, poisonous. Most theists believe in a particular supernatural source of edicts (many of which are unhealthy) and in supernatural causes of earthly events. As you know, medical alternativists, especially those who publicly invoke unknowables such as God, play up to such believers. I myself, between mid-1974 and late 1989, was an agnostic with alternativist leanings.

Incidentally, on the May 17 edition of "Primetime Live," alternative-medicine proponent Andrew Weil, M.D., author of *Natural Health, Natural Medicine* (Houghton Mifflin) and a *Natural Health* columnist, stated:

I'm willing to entertain any idea, and we hear a lot of strange ones out there in the world of alternative medicine.

I'm willing to consider it. But then I have to have proof. I have to see evidence. But that's different from rejecting an idea out of hand without even seeking to verify it.

Then interviewer Nancy Snyderman, M.D., asked him: "Do you have to believe in God to be good at this?" Weil replied: "No. I don't think you have to believe in God. I think you have to believe, really, in a way, in yourself, and maybe believe in the miraculous nature of the human body." He did not say who should pay for the testing of "strange" claims.

Comments: I conversed by phone with Dr. Jarvis about his statements above on May 2, the day I received his letter. I respect him greatly. I urge readers to seek membership in NCAHF, which publishes an interesting bimonthly newsletter edited by Jarvis. Request applications from: Membership Chairman, P.O. Box 1276, Loma Linda, CA 92354-1276.

Like a Prayer?

Dear Mr. Raso:

I had to send you this clipping right away [Julia Lieblich, "Federally funded prayer study raises hackles," *Contra Costa Times* (Walnut Creek, Ca.), March 6, 1995]....I'm still laughing.

Love *Nutrition Forum*.

—Judy Bieser, R.D.

Walnut Creek, Ca.

Comments: The article quoted Annie Laurie Gaylor, editor of *Freethought Today*: "Cemeteries are full of people who prayed to live." The Freedom From Religion Foundation, Inc. (FFRF), in Madison, Wisconsin, publishes this monthly newspaper. On May 8, the FFRF faxed me the "Notice of Grant Award," the grant application's synopsis of the project, and a FFRF press release thereon titled "Nothing Fails Like Prayer." In the September/October 1994 issue of *NF*, I asked: "Should taxpayers foot the cost of testing methods that lack a sound theoretical basis?" Apparently, the FFRF's answer is no.

In 1993, through the National Institutes of Health, the Office of Alternative Medicine awarded \$28,797 to psychiatry professor Scott R. Walker, M.D., and associates for "Intercessory Prayer: A Pilot Investigation." The purported aim of this study was "to test the hypothesis that prayers on behalf of a specific individual, by concerned but uninvolved believers, can have a significant impact on the recovery of individuals seeking help for problems related to the use of psychoactive chemicals." According to the May 1995 issue of *Freethought Today*, the grant application said the project would involve telling clients that "an outside group of individuals may or may not pray by first name for their recovery from substance abuse and problems associated with it."

The article Ms. Bieser mailed to me posed the following questions. What would happen if: (1) a friend or relative of a client in the "no-pray-ers" group prays for the client, (2) Catholic prayers outdo Protestant prayers, (3)

clients "receive negative prayers," (4) God's answer to a prayer is no, or (5) clients pray for themselves.

Haelen Words

Dear Jack,

Thank you for printing my letter in *Nutrition Forum*, Vol. 12, No. 2. Your comments were noteworthy. However, I would hardly agree that "religious unbelief" is "necessary for such objectivity." For those of us [who are] religious believers, nothing is more disturbing than to see frauds distorting belief systems to benefit their own power and monetary gains.

In any case, the Haelen Center is located at the Hospital of St. Raphael...[in] New Haven, Ct.

On another issue, what do you think about Ross Laboratory's marketing campaign for *Advera* [a high-calorie, low-fat beverage]? I think it is unethical, and Ross ought to be ashamed of itself for preying on the fears of HIV(+) persons. The product is costly [and] tastes lousy (according to my patients who tried it), and the study Ross reported in *Applied Nutritional Investigation*, Vol. 9, No. 6, pp. 507-512, was innately flawed...[because it compared] *Advera* to *Ensure*, [which is] considerably lower in calories and protein. Ross has opted to bypass the health professional and hit the TV and airwaves, as well as community organizations, to spread its good news. Needless to say, I do not recommend the product.

—Laura F. Wilson, R.D.

Haelen Center
New Haven, Ct.

I'm glad you wrote me again. However, you have somewhat distorted my statement, which was: "I very much doubt that religious unbelief per se impairs objectivity in matters of science; indeed, I would *venture* calling it *almost* necessary for such objectivity" (italics added). Let me add that, by "religious unbelief," I meant religious *nonbelief*, which is not necessarily disbelief—the conviction that something is untrue. In my opinion, impairment of objectivity in matters of science varies with: the particular scientific question; the particular religion; the degree of belief or disbelief therein, affinity thereto, or dislike thereof; and, perhaps, the degree of peer pressure and the degree of persuasiveness of coreligionists.

Before I received your letter on May 13, Drs. Barrett and Kroger and I had not heard of *Advera*™. On May 15, I phoned the Consumer Relations Department of Ross Products twice, first as a *Nutrition Forum* editor and second as a consumer, and requested printed material on *Advera*. I also phoned, as an editor, a Ross sales representative in Pennsylvania, and, on his answering machine, requested printed material. Two days later, I received literature on the beverage from Ross Products Division in Columbus, Ohio, and from the sales rep. Later that month, Ross Laboratories, in Columbus, Ohio, mailed a response to the request I had made as a consumer, under a relative's name. These mailings do not evidence that Ross is "preying on the fears" of persons infected with HIV. I have tasted vanilla, chocolate, and "orange cream" *Advera*, on the rocks. I found only the chocolate variety palatable.

Comments: A leaflet describing the Haelen Center accompanied Ms. Wilson's letter. I do not discern anything untoward about the center.

Healthcare Esoterica

Jack Raso

Will medical alternativists ever run out of ways to package magic, the universe, and alleged deities and soul-like forces?

Something (in the Way Chi Moves)

Alternative Medicine: Expanding Medical Horizons, released by the National Institutes of Health last March, defines "qi": "in Eastern philosophies, the energy that connects and animates everything in the universe; includes both individual qi (personal life force) and universal qi, which are coextensive through the practice of mind-body disciplines, such as traditional meditation, aikido, and tai chi." Proponents of traditional Chinese medicine (TCM) claim that this alleged something—whose names include *ch'i*, *Qi*, and *ki*—has profound physiologic effects. Has anyone nailed down what it is?

In 1988, PBS aired an episode of "Innovation" titled "East Meets West," in which author Ted J. Kaptchiuk, O.M.D., stated:

The question of what is *qi* is complicated obviously. It has to do something with the vitality principle that makes things alive. It also has to do with passing gas. It has to include what you feel about your parents. It simultaneously has to include athlete's foot on your toes.

Then David Eisenberg, M.D., author of *Encounters with Qi*, said:

To a Chinese clinician...*qi* is not a concept; it's a physical entity that can be measured, palpated, pushed, pulled, sent through needles, elevated, and decreased. And thus far, there's not a lot of good evidence that it can be tracked, measured by machines, as we understand machines these days. The Chinese insist, though, that it is very much physical and they can feel it; we just can't measure it.

Then Kaptchiuk stated:

I don't think it's a real thing—real thing in the sense of "you'll get it in a machine," or "you'll discover it under a microscope," or "you'll have a measurement"—because as soon as you do that, it won't be *qi*; it will be a scientific phenomena that doesn't include everything that *qi* is.

And the Beat Goes On

Below I describe more than three dozen methods that I consider mystical or supernaturalistic.

Apple diet (apple-cleansing regimen, apple-diet cleansing routine, apple-diet regimen, apple-diet therapy): Alleged purificatory "reducing aid" inspired by the "readings" of "religious seer" Edgar Cayce (1877-1945). The three-day regimen, which involves enemas, restricts food intake to raw apples (especially Delicious and Jonathan, and peeled unless they are organic), black coffee, and olive oil. Cayce recommended the diet for numerous ailments, including anemia, debilitation, and "subluxations."¹

Ayurvedic acupuncture: Subject of *The Lost Secrets of Ayurvedic Acupuncture* (1994). The publisher thereof, Lotus Press, in Twin Lakes, Wisconsin, describes the system as part of the surgical branch of ayurveda [see NF 11:37, 1994]. The basis of ayurvedic acupuncture is the *Suchi Veda*.²

Belly Bean diet: "Weight loss" program promoted in 1990 and 1991 that involved: (1) consuming three "nutritionally balanced," low-fat meals daily with a total caloric value between 1,000 and 2,000; (2) drinking an additional 5 to 6 glasses of water daily; (3) snacking between meals on First Fitness Belly BeansTM, a "100% all-natural" candy-like "appetite control drug" that allegedly contained a "highly potentized homeopathic appetite control formulation"; and (4) continuing to eat *Belly Beans* after attainment of "desired weight."³

Beyond Dieting: Subject of the book *Beyond Dieting: An Edgar Cayce Program for Permanent Weight Control* (out of print). A purported way to lose weight, it involves some of the "key ideas" in the "readings" of clairvoyant Edgar Cayce (1877-1945).⁴ (See "Weight No More," below.)

Biogenic support (homeovitic support): Phase of homeovitics (see below) whose alleged aim is to minimize production of free radicals during Clearing (see below) and homeovitic detoxification (see below). It involves: (1) administration of the *Biosode*, a flavorless, odorless, watery HoBoN product that purportedly contains "complementaries...blended in a vitalized potency spectrum"; and (2) dietary "support" and/or supplementation.^{5,6}

Body reflexology: Form of reflexology or acupressure that encompasses pressing, pulling, massaging, and clamping "reflex points" on the face, tongue, ears, scalp, nape, hands, crotch, buttocks, shins, and feet. These so-called reflex points, also termed "reflexes" and

"reflex buttons," include about a hundred pinnal "acupoints." *Body Reflexology* (1994) defines "reflex points" as "energy junctions that relay and reinforce energy along meridian lines of the body, passing energy toward the organs and the nervous system." The book states that the palm of the right hand is "positive" and "stimulates energy," and that the palm of the left hand is "negative," sedative, and "cleaning."⁷

Chakra yoga: Combination of "focused" hatha yoga, "sounding techniques," and visualization promoted by Jason Kanter. One of its premises is that each chakra ("vital energy" center) corresponds to a "major aspect" of the "psyche." The purported design of the method is to maximize the ability to utilize "vital life energies" for healing and "integration."⁸

Classical homeopathy: Form of homeopathy [see NF 11:58-59, 1994] that involves extensive questioning of the patient by the practitioner, purportedly to determine the "single remedy" for that patient.⁹ (See "Homeovitics," below.)

Clearing: Phase of homeovitics (see below) that allegedly activates all "vital pathways" through administration of the *Detoxosode O-S*, a flavorless, odorless, watery HoBoN product that purportedly contains "complementaries...blended in a vitalized potency spectrum."^{6,10}

Combine spirituality and psychotherapy: Eclectic "integrative system" practiced, and apparently developed, by author Bernard Green, Ph.D. It includes "consciousness expansion," "nutritional psychology," psychosynthesis (see below), "Simonton techniques," and "Sufi psychology."¹¹

Contemporary homeopathy: Form of homeopathy [see NF 11:58-59, 1994] whose purported "intervention" is augmentation of all symptoms of a disease through administration of homeopathic preparations.⁹

Creative Force Techniques (CFTs): Alleged all-purpose method promoted by "Mind Imaging expert" Gini Graham Scott, Ph.D., author of *The Empowered Mind: How to Harness the Creative Force within You* (Prentice Hall). CFTs purportedly can: put one in touch with the "inner power" of one's subconscious, focus this "mighty force" with laserlike precision, and enable one to "tune into the other person's 'inner essence.'"¹²

Creative meditation: Subject of Richard O. Peterson's 1990 book of the same name. It allegedly uses "vibrational patterns" to effect "attunement," self-guidance, and self-healing. The last of the seven principles of this purportedly unique approach to meditation is:



HoBoN logo

"Creative meditation is first directed to at-onement [sic] with God ["Creative Forces"] without expectations of benefits; the resources of God are then accessible for self-knowledge, self-guidance, and self-healing."^{13, 14}

Divine healing from Japan: Form of "hands on healing" practiced and promoted by Prof. Tadamasu Fukaya, a Tenrikyo reverend and "Master of Sazuke Healing." In a lecture, Fukaya stated that human bodies are loans from "God the Parent" and that, therefore, we should treat them according to the will of "God the Parent" (e.g., by not becoming infatuated and not indulging "carnal desires").^{15, 16} (See "Tenrikyo," below.)

G-Jo acupressure: "Healing Art of the Orient" promoted by the G-Jo Institute, which has a P.O. box in Hollywood, Florida. Certification by the institute as a "Master of G-Jo Acupressure" requires only one weekend of home study. The institute claims that G-Jo acupressure is foolproof and that it instantly heals hundreds of "injuries & ailments."¹⁷

"Healing the Heart" workshop: "Psychospiritual" component of a "healing" program run by cardiologist Stephen Sinatra, M.D., director of the New England Heart Center, in Manchester, Connecticut. The program reportedly includes meditation and a "visualization" wherein patients request guidance from believable "spiritual powers." Sinatra has stated that healing occurs "when people accept their heart disease as a way toward growth."¹⁸

Homeovitic detoxification: Phase of homeovitics (see below) that allegedly increases the body's "innate healing energy."¹⁹

Homeovitics (homoeovitics): Form of contemporary homeopathy (see above) begun in 1979 by Allen Morgan Kratz, Pharm.D., and promoted by HoBoN, a "pharmaceutical manufacturer" in Naples, Florida. ("HoBoN" stands for "Homoeovitic [or "Homeovitic"] + Bio + Nutritional.") A booklet received from the company in 1993 defined "homoeovitics" as "the intensification of the body's healing energies through the use of vitalization." A "Practitioner's Handbook" received from HoBoN in June 1995 states:

Vitalization increases the vital energy of a substance by a stepwise series of dilutions with succussions [vigorous shaking]. This energy can then be transferred from this vitalized substance to activate a less energetic one. This transfer of energy is known as resonance. It occurs when the vitalized substance (vitic) is similar or identical (homeo) to the less energetic one.

The crux of homeovitics is administration of "homeovitic + bio + nutritional" (or "homeovitic formulae"). These are HoBoN products that, allegedly, "function by Homoeovitic bioresonance," add "energy" to the body, and intensify its "innate healing energy." Homeovitics encompasses Clearing, homeovitic detoxification, and biogenic support (see above for all).^{10, 20, 21}

Huichol shamanism: Form of shamanism promoted by the Dance of the Deer Foundation, taught by its director, "shaman healer" Brant Secunda, and practiced by the Huichols, a tribe of Indians living in central western Mexico, near Ixtlan.^{22, 23, 24}

IIP Consciousness Development Program: System developed by Waldo Vierra, M.D., who founded the International Institute of Projectiology (IIP) in Brazil in 1988. Kevin de La Tour, coordinator of IIP's U.S. headquarters, in New York City, has defined projectiology as "basically...the science that studies the out-of-body experience and other, related paranormal phenomena." IIP conducts "workshops" wherein some persons allegedly have experienced "astral projection." Simone de La Tour, an IIP seminar leader, has written: "Many individuals report having realized significant benefits in the areas of health, life success and spiritual development." The IIP Consciousness Development Program purportedly consists of "systematic training and practice in controlling and managing bioenergy and states of consciousness for the purpose of improving the quality of one's life and accelerating personal development." Allegedly, the program can prevent and correct illness, promote "natural" sleep, amplify intellectual capacity, increase "psychic abilities," enable discovery of "past life recall capabilities," and eliminate fear of death.^{25, 26, 27}

Inner child cards: "Divination system" created by Isha Lerner and "professional astrologer" Mark Lerner, coauthors of *Inner Child Cards: A Journey into Fairy Tales, Myth, and Nature* (1992). The system features this book and a fairy-tale adaptation of the 78-card tarot. It purportedly "reawakens the child within by gently helping us to interact with the most potent archetypes of the inner world." The book's preface states: "Each of us is as rich and divine as the cosmic Creator who guides us. *Inner Child Cards* is a tribute to our radiant selves, the starchildren who live within our hearts...."^{28, 29}

Inner guide work: Hypnotic technique that purportedly helps people contact their "true inner wisdom." Allegedly, control of "the process" ultimately passes from the "hypnotherapist" to "Inner Guides."³⁰

Kalaripayat: Ayurvedic system promoted by Joseph Kurian [see NF 12:29, 1995]. It purportedly involves stimulation of *marmas*. Allegedly, this restores "full circulation," overpowers "blocks," and eliminates toxins.³¹ (See "Marma healing," below.)

Karuna reiki (formerly called Sai Baba reiki): Form of reiki (see Chapter 11 of *Alternative Healthcare: A Comprehensive Guide*) named and taught by "Reiki Master" William Lee Rand. Rand is the author of *Reiki, The Healing Touch*; founder of The Center for Reiki Training, in Southfield, Michigan; and editor in

chief of *Reiki News*, a quarterly published by the Center. Reiki is a variant of the laying on of hands. *The Reiki Handbook* (1992) describes it as a "healing art" whereby "therapists" channel *reiki*, "universal life energy power," through their bodies for storage in the solar plexus, and into "dis-eased" individuals for "rebalancing." The Sanskrit word "karuna" is translatable as "compassionate action." The purported focus of karuna reiki is development of *karuna*.^{32, 33}

Local healing: "Biofield healing that uses the practitioner's hands on the subject's body," according to *Alternative Medicine: Expanding Medical Horizons* (the so-called Chantilly Report), released by the National Institutes of Health in March 1995. The report defines "biofield" as "a massless field" that: (1) is not necessarily electromagnetic, (2) surrounds and permeates living bodies, (3) affects the body, and (4) possibly is related to *qi* (*chi*).

LooyenWork®: Approach to "body therapy" that involves "body reading" and "movement re-education" and allegedly can increase the "flow" of clients' "energy." "Body reading" purportedly is a "sophisticated" form of observation that enables practitioners to reach the root of the client's problem.³⁴

Marma healing (ayurveda marma healing): A purported complete system for health, longevity, and beauty. Its bases are: (1) ayurveda, "the science of life"; (2) *Dhanur Veda*, "the science of the battlefield"; (3) *Kaya Kalpa*; and (4) marma science [see NF 12:29, 1995]. The apparent main premise of marma healing is that blockages in a system of 107 "energy channels" (*marmas*) in the human body: (1) unbalance *doshas*, the three (alleged) forces that govern health and longevity, and (2) thus create physical illness, chronic bodily conditions, mental instability, and emotional disorders. Purported repair of "marma blockages" depends partly on herbal preparations.^{35, 36} (See "*Kalaripayat*," above.)

Medicine cards: Native American "divination system" featuring cards that depict "power animals." One of its purported aims is to teach "the healing medicine of animals." Another is to show "the way to healing of the body, emotions, mind, and spirit."³⁷

Metta Touch™: Apparently, a blend of techniques from acupressure, reflexology, shiatsu, Swedish massage, Thai massage [see NF 12:31, 1995], and yoga. One of its purported aims is to "bridge the connection between" the practitioner, the patient, and the "cosmic life force."³⁸

Neuro-bioenergetic treatment: Variant of acupuncture pioneered by Yee Wing Tong, M.D. It involves intramuscular injections of Novocain.³⁹

Nsoromma body therapy: Mode of bodywork promoted by painter Vivinne (Narmada) Williams, M.F.A. It purportedly integrates relaxation, shiatsu, and yoga.⁴⁰

P.E.E.R. (Primary Emotional Energy Recovery, P.E.E.R. counseling): An alleged way to "access energy" by learning how to release "emotions locked up in the body." It involves bodily movements and exercises. According to P.E.E.R. theory, when one releases these "frozen, repressed" emotions, the body "accesses and/or recovers" the "energy" it was using to "hold down" the emotions. Dan Jones and John Lee cofounded P.E.E.R. training. Practitioners are called facilitators.⁴¹

Psycho-pictography: Subject of the bestseller of the same name, written by "self-help" guru Vernon Howard. Supposedly, it is a way of using the "miracle power" of one's mind, through mental images, to decipher spiritual and psychological truths.⁴²

Psychosynthesis: "Spiritual psychotherapy" originated in 1910 by Italian psychiatrist Roberto Assagioli, M.D. (1888–1974), and developed by Johannes Schultz. Its purported design is to effect the "integration" and "growth" of the self and to release and direct "psychic energies" allegedly generated thereby.^{43, 44, 45, 46, 47}

Rakta moksha: Ayurvedic form of bloodletting according to whose theory: "toxemia" is the "basic cause" of hypertension, "thrombotic elements," and repeated acne, eczema, herpetic symptoms, hives, leukoderma, and scabies; *pitta* ("fire plus water," one of the three ayurvedic "humors") is a derivative of disintegrated red blood cells in the liver; an increase of *pitta* in the blood may cause many disorders; and extraction of a small amount of venous blood relieves the "tension" caused by "*pittagenic* toxins" in the blood.⁴⁸

Sacred psychology: "Experiential psychology" developed by psychologist Jean Houston, former president of the Association for Humanistic Psychology. It posits three realms of experience: (1) ordinary reality, (2) a "collective unconscious," and (3) "the realm of God," which purportedly is immanent in the "High Self."⁴⁵

Tenrikyo: Sect founded in 1838 by Japanese housewife Miki Nakagama (1798–1887), through whom "God the Parent" allegedly appeared in order to save humankind. It emphasizes faith healing, teaching, and "unity of life."^{47, 49}

Tibetan reiki: Form of reiki promoted by Gary Jirauch, of New York City, and allegedly taught very selectively at Tibetan ashrams. In a telephone interview on May 13, Jirauch—a "Reiki Master," "Seichim Reiki Master," and "ordained minister of spiritual healing"—said of Tibetan reiki:

Actually, it's an extension of the traditional reiki program.... Tibetan reiki basically is a continued discipline of reiki to help enhance traditional reiki, to make it more whole. It goes back into some of the ancient concepts the Tibetans knew in relation to healing and purification and enlightenment, and defines them in a simple way, like, works in a very simple way like reiki works. It's a variant of reiki that I practice, and several people across the United

States are now practicing different forms of it. It all gets down into that definition of what you define as reiki; and "reiki" is a very generic term to use for anything having to do with this type of energy work.

(See "Karuna reiki," above.)^{50, 51, 52}

Traditional Dhanur Veda diagnosis: Pseudodiagnostic method whose purported goal is identification of "marma blockages." Allegedly, this requires "deep inner concentration" and can happen by phone and with minimal conversation.³⁶ (See "Marma healing," above.)

Weight No More (the *Weight No More* approach to weight loss; the *Weight No More* program; the *Body, Mind, and Spirit Diet*): Subject of the book *Weight No More: A Weight Loss Program That Can Work* (1990). The "readings" of clairvoyant Edgar Cayce (1877–1945) constitute the program's basis. The main premise of this theistic method is that humans consist of three "bodies": physical, mental, and spiritual. According to the aforementioned book, tapping into "the Life Force" in a "positive way" (allowing it to "flow without hindrance" through the body) is the key to correcting any physical problem.^{53, 54} (See "Beyond Dieting," above.)

Zarlen therapy (Zarlen direct channelling): Purported very advanced "mental healing" technique "discovered" by Jonathan Sherwood in 1984 in New Zealand. Dr. Sherwood is the author of *Zarlen Speaks: A New Beginning* and the pamphlet "Zarlen Therapy" (©1987). In the latter, he described "Zarlen" as his guide and as a "past life existence" that he had. He defined "guide" as "a value of information which carries an identity with it as to not only when the information was gained but also how." A flyer from the Queensland Awareness Centre, in Australia, stated: "When Zarlen first made contact with Jonathan in 1984, he stated that he had not had communication with humans for over 25,000 years and that he had returned to assist with a spiritual transition which the human race was about to pass through." Zarlen therapy allegedly can "re-pattern the higher brain functions" so that one is "completely back in tune." Application of the technique takes about three minutes.^{55, 56, 57}

Zulu Sangoma bones: African "divination method" promoted by the Katush Motivational & Holistic Centre, in South Africa. The method features herbal "remedies" and "Sangomas"—alleged links with instructive ancestral spirits.⁵⁸

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Regina Capobianco's ad. See this issue's "Readers' Forum."

Editor's Note

Some ten years ago, I analyzed about fifty *Library Journal* and *Publisher's Weekly* reviews of books on health and nutrition. I found a pattern of deceit. Bad reviews of good books suggested that few of the reviewers had expertise in the subject matter. Quackery-promoting books were never identified as such, even if the reviewer obviously knew the book was unreliable. Some

reviews recommended that libraries purchase "controversial" books because of reader interest. None recommended avoidance because a book was misleading or dangerous. I suspect the editors did not want to print the truth, perhaps because skeptical reviewers were incompetent, and/or because negative reviews would offend major advertisers.—*Stephen Barrett*

Weird Things: A Review

How to Think about Weird Things: Critical Thinking for a New Age

By Theodore Schick, Jr., and Lewis Vaughn. Mountain View, CA: Mayfield Publishing Company, 1995. Softcover. Pp. 299. Price \$18.95.

This is a genuine self-help book: both a superb primer on applied rational skepticism and a comprehensive yet compact refresher for experienced skeptics. In such a book, one might expect dryness or preachiness or a lack of evenhandedness. But—*notwithstanding its overly chatty, vaguely condescending intro—Weird Things*, with quotations in its margins (e.g., from Annie Besant, the Buddha, Kurt

Butler, Confucius, and Carl Gustav Jung), and boxes focusing on specific beliefs or claims (e.g., a purportedly astrologically formulated vitamin supplement), is fine *edutainment* and invites browsing. I especially enjoyed the chapter titled "Mystical Knowing," which lays bare the rock-bottom incompatibility among Christian mysticism, Hinduism, and Buddhism. (Buddhism comes out looking reasonable.) The authors state: "Once we admit that only certain mystical experiences are revelatory, we have abandoned the claim that all mystical experience yields knowledge." The following chapter centers on medical alternativism. In short, *Weird Things* is a readable antidote to the deluge of pseudoscience.—*J.R.*

Physicians & Healers: A Psychiatrist's View

Veva H. Zimmerman

Health practitioners, including nurses, nurse practitioners, physician assistants, and some alternative "healers," are taught *pattern recognition*—which is what computers do. Physicians, on the contrary, are trained in science. The reason is that, to serve their patients well, physicians must cultivate a neutral, information-seeking posture—be unbiased observers. They must be prepared to collect information that does *not* fit a pattern: disparate information.

Although physicians do not *practice* as scientists (human illness is too complex), they must approach information as scientists, without preconceptions. This is the central skill we try to teach medical students. We say:

You must approach the information you gather in the patient's history and medical examination without *any* preconception. You must listen to patients in a neutral mode, and not rush to judgment. You may need to hear the same information over and over again, not making any decisions, until you clearly understand what is going on.

This, of course, drives away some patients, who want answers *now*. This is also what makes alternative "healers" so appealing. For them, personality is paramount. They listen intently. Then they lay on the hand. Neither they nor their patients need deal with uncertainty.

Patients may not care if, later, this help is found worthless. People don't approach healthcare, especially their own, as an intellectual problem.

But, sooner or later, the patterned responses of the alternative practitioner will fail the patient, perhaps fatally. The hope for a correct diagnosis and for specific medical interventions lies with a scientific approach to the patient and his or her ills. Only a physician can provide it.

Veva H. Zimmerman, M.D., is a dean at the New York University School of Medicine. The article above is an adaptation of one published in the June 1, 1995, issue of *Probe* newsletter. Readers' responses are welcome.

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QUESTIONABLE CANCER TREATMENT NUTRITIONAL, HERBAL, AND BIOLOGICAL APPROACHES

STEPHEN BARRETT

The American Cancer Society (ACS) defines questionable methods as "lifestyle practices, clinical tests, or therapeutic modalities that are promoted for *general* use for the prevention, diagnosis, or treatment of cancer and which are, on the basis of careful review by scientists and/or clinicians, not deemed to have real evidence of value." Under the rules of science (and appropriate federal laws), proponents who make health claims bear the burden of proof. It is their responsibility to conduct suitable studies and report them in sufficient detail to permit evaluation and confirmation (or disconfirmation) by others. An ACS committee evaluates methods by asking three questions: (1) Has the method been objectively demonstrated in the peer-reviewed scientific literature to be effective? (2) Has the method shown potential for benefit that clearly exceeds the potential for harm? (3) Have objective studies been correctly conducted under appropriate peer review to answer these questions?

Current questionable methods include corrosive agents, plant products, special diets and dietary supplements, drugs, correction of "imbalances," biologic methods, devices, miscellaneous concoctions, psychological approaches, and worthless diagnostic tests. Many practitioners combine methods to increase marketability. A 1987 ACS investigation found that 452 (9%) of 5,047 cancer patients identified through a telephone survey had used questionable methods. Of these, 49% had used "mind therapies" (hypnosis, mental imagery, psychic therapy) and 38% had used diets. The dangers of using questionable treatments include delaying appropriate treatment, interference with proven treatment, decreased quality of life, direct physical harm, wasting valuable time, financial difficulties, and psychological damage.

Cures...or Lures?

Proponents of questionable methods typically claim that marketplace demand and testimonials from

satisfied customers are proof that their methods work. However, practitioners almost never keep score or reveal what percentages of their cases end in failure. Cancer cures (real and alleged) attributed to questionable methods usually fall into one or more of five categories: (1) the patient never had cancer; (2) the patient was cured or put into remission by proven therapy, but a questionable method was also used and erroneously credited; (3) the cancer is progressing but is misrepresented as slowed or cured; (4) the patient has died of cancer (or is lost to follow-up) but is pronounced cured; or (5) the patient had a spontaneous remission (very rare) or slow-growing cancer, but the method is credited as a cure.

Promoters of questionable methods generally couch their approach in a veneer of straightforwardness: (1) cancer is a symptom, not a disease; (2) emotional, dietary, and other environmental factors cause symptoms; (3) proper mental attitude, nutrition, and physical activity enable a biologic and mental defense against cancer; and (4) conventional therapy weakens the body's reserves and affects symptoms rather than the disease. Proponents portray questionable methods as natural and nontoxic, and standard (responsible) methods as very dangerous. They tend to play on patients' desire for power over the disease process. Motivators of proponent physicians or scientists may include adulation from clients, deep-seated preconceptions, delusional self-importance, financial vested interest, media attention, and misinterpretation of personal experience.

Recent favorites among questionable methods include the following.

Cancel

Cancel, originally called *Entelev*, is a liquid claimed to cure cancer by "lowering the voltage of the cell structure by about 20%." This allegedly causes cancer cells to "digest" and be replaced with normal cells. Accompanying directions have warned that bottles of *Cancel* should not be allowed to

touch each other or be placed near any electrical appliance or outlet. *Cancell* has also been promoted for the treatment of AIDS, Alzheimer's disease, amyotrophic lateral sclerosis (Lou Gehrig's disease), multiple sclerosis, "extreme cases" of diabetes and emphysema, and several other diseases. In 1989, the FDA reported that *Cancell* contained inositol, nitric acid, sodium sulfite, potassium hydroxide, sulfuric acid, and catechol. Subsequently, its promoters professed to be modifying the formulation to make it more effective. They have also claimed that *Cancell* can't be analyzed because it varies with atmospheric vibrations and keeps changing its energy. Laboratory tests conducted between 1978 and 1991 by the NCI found no evidence that *Cancell* was effective against cancer. The FDA has obtained an injunction forbidding its distribution to patients.

Essiac

Essiac is an herbal "remedy" that Canadian nurse Rene M. Caisse (1888–1978) prescribed and promoted for about fifty years [see NF 11:54–55, 1994]. Shortly before her death, she turned over the formula and manufacturing rights to the Resperin Corporation, a Canadian company that has provided it to patients under a special agreement with Canadian health officials. Several reports state that the formula contains burdock, Indian rhubarb, sorrel, and slippery elm, but there may be additional ingredients. *Essiac*® tea, allegedly Caisse's original formulation, is marketed in the United States. Several animal tests using samples of *Essiac* have shown no antitumor activity; nor did a review of data on 86 patients performed by the Canadian federal health department during the early 1980s.

Gerson Therapy

Gerson therapy proponents claim that cancer can be cured only if toxins are eliminated from the body. They recommend "detoxification" with frequent coffee enemas and a low-sodium diet that includes more than a gallon a day of juices made from fruits, vegetables, and raw calf's liver. This method was developed by Max Gerson, a German-born physician who emigrated to the United States in 1936 and practiced in New York City until his death in 1959. Still available at a clinic near Tijuana, Mexico, Gerson therapy is actively promoted by his daughter, Charlotte Gerson, through lectures, talk show appearances, and publications of the Gerson Institute, in Bonita, California. Gerson protocols have included liver-extract injections, ozone enemas, "live cell therapy," thyroid tablets, royal jelly capsules, linseed oil, castor-oil enemas, clay packs, laetrile, and vaccines made from influenza virus and dead bacteria (*Staphylococcus aureus*).

In 1947, the National Cancer Institute (NCI) reviewed ten cases selected by Dr. Gerson and found his report unconvincing. That year, a committee appointed by

the New York County Medical Society reviewed records of 86 patients, examined ten patients, and found no evidence that the Gerson method had value in treating cancer. An NCI analysis of Dr. Gerson's book *A Cancer Therapy: Results of Fifty Cases* concluded in 1959 that most of the cases failed to meet the criteria (such as histologic verification of cancer) for proper evaluation of a cancer case. A recent review of the Gerson treatment rationale concluded: (1) the "poisons" Gerson claimed to be present in processed foods have never been identified, (2) frequent coffee enemas have never been shown to mobilize and remove poisons from the liver and intestines of cancer patients, (3) there is no evidence that any such poisons are related to the onset of cancer, and (4) there is no evidence that a "healing" inflammatory reaction capable of seeking out and killing cancer cells exists [JAMA 268:3224–3227, 1992].

Between 1980 and 1986, at least thirteen patients treated with Gerson therapy were admitted to San Diego area hospitals with *Campylobacter fetus* sepsis attributable to the liver-extract injections. None of the patients was cancer-free, and one died of his malignancy within a week. Five were in a coma due to low serum sodium, presumably a result of the "no sodium" Gerson dietary regimen. Gerson personnel subsequently modified their techniques for handling raw liver products and biologicals. However, the Gerson approach still has considerable potential for harm. Deaths also have been attributed to the coffee enemas administered in the Tijuana clinic. [See NF 3:9–12, 1986. It is ironic that coffee, which contains dozens of naturally occurring toxicants, is considered benign and curative.—M.K.]

Charlotte Gerson claims that treatment at the clinic has produced high cure rates for many forms of cancer. In 1986, however, a Gerson publicist admitted to me that patients were not monitored after they left the facility. Although clinic personnel later said they would follow their patients systematically, there is no published evidence that they have done so. A naturopath who visited the Gerson Clinic in 1983 tracked 21 patients over a 5-year period (or until death) through annual letters or phone calls. At the 5-year mark, only one was still alive (but not cancer-free); the rest had succumbed to cancer.

The Greek Cancer Cure

The main proponent of the Greek cancer cure (also called Alivizatos therapy) was microbiologist Dr.

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Hariton-Tzannis Alivizatos, of Athens, Greece, who died in 1991. He claimed to have a blood test that could determine the type, location, and severity of any cancer. He also asserted that his "serum" enabled the patient's immune system to destroy cancer cells, and that it helped the body rejuvenate parts destroyed by cancer. Knowledgeable observers believe that the principal ingredient of the so-called cure was niacin [also called vitamin PP (pellagra-preventative) in some older publications]. The ACS and the NCI asked Alivizatos several times for detailed information on his methods, but he never replied. A Mexican clinic now offers the treatment.

Hoxsey Treatment

Naturopath Harry Hoxsey promoted an herbal treatment consisting of a topical paste or powder and an oral tonic. The external preparations contained corrosive agents such as arsenic sulfide. The tonic, allegedly individualized, contained potassium iodide and such herbs as burdock root, cascara, licorice, and pokeroor (which is nontherapeutic and dangerous). Hoxsey said that the formulas were developed in 1840 by his great-grandfather and bequeathed to him by his father while the latter was dying of cancer.

Clinics offered the Hoxsey treatment in the United States from 1924 until the late 1950s, when Hoxsey closed his main clinic, in Dallas, because of repeated clashes with the FDA. Since 1963, it has been available only at a clinic in Tijuana, Mexico, operated by Hoxsey's former chief nurse, Mildred Nelson. Hoxsey himself had prostate cancer in 1967 and underwent surgery after treating himself unsuccessfully with his tonic. He died in 1974. Most of the herbs in the tonic have been tested for antitumor activity in cancer, with unremarkable results. The NCI examined case reports submitted by Hoxsey and concluded that, because of their inadequacy, no assessment of the method was possible. [See NF 4:89-91, 1987.]

"Hyperoxygenation Therapies"

"Hyperoxygenation" therapy, also called bio-oxidative therapy and oxidative therapy, is based on the misconception that cancer is caused by oxygen deficiency and can be cured by exposing cancer cells to more oxygen than they can tolerate. The most publicized agents are hydrogen peroxide, germanium sesquioxide,

and ozone. Although these compounds have been the subject of legitimate research, there is little or no evidence that they are effective for the treatment of any serious disease, and each has demonstrated potential for harm. Germanium products have caused irreversible kidney damage and death. The FDA has banned their importation and seized products from several U.S. manufacturers.

Kelley Metabolic Therapy

In the 1960s, William Donald Kelley, D.D.S., developed a program for cancer patients that involved dietary measures, vitamin and enzyme supplements, and computerized "metabolic typing." Kelley classified people as "sympathetic dominant," "parasympathetic dominant," or metabolically "balanced," and he made dietary recommendations for each type. He claimed that his "Protein Metabolism Evaluation Index" could diagnose cancer before it was clinically apparent and that his "Kelley Malignancy Index" could detect "the presence or absence of cancer, the growth rate of the tumor, the location of the tumor mass, prognosis of the treatment, age of the tumor and the regulation of medication for treatment."

In 1970, Kelley was convicted of practicing medicine without a license after witnesses testified that he had diagnosed lung cancer on the basis of blood from a patient's finger and prescribed dietary supplements, enzymes, and a diet as treatment for the cancer. In 1976, following court appeals, his dental license was suspended for five years. However, he continued promoting his methods, through his Dallas-based International Health Institute, until the mid-1980s. Under the institute's umbrella, licensed professionals and "certified metabolic technicians" throughout the United States would administer a 3,200-item questionnaire and send the responses to Dallas. The resultant computer printout provided a lengthy report on "metabolic status," plus detailed instructions covering foods, supplements (typically 100-200 pills per day), "detoxification" techniques, and lifestyle changes.

Reportedly similar treatment is provided today by Nicholas Gonzales, M.D., of New York City. Gonzales claims to have analyzed Kelley's records and drafted a book about his findings. The manuscript has not been published, but experts who evaluated its chapter on 50 cases found no evidence of benefit. Gonzales says that he offers "10 basic diets with 90 variations" and typically prescribes coffee enemas and "up to 150 pills a day in 10 to 12 divided doses."

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Laetrile

Laetrile, the object of considerable popular attention during the 1970s and early 1980s [see NF 5:33-40, 1988], is the trade name for a synthetic relative of amygdalin, a constituent of the kernels of apricot pits, apple seeds, bitter almonds, and some other stone fruits and nuts. Many laetrile promoters have called it "vitamin B₁₇" and falsely claimed that cancer is a vitamin-deficiency disease curable with laetrile. Efficacy claims have varied. First, laetrile was claimed to prevent and cure cancer. Then it was claimed to "control," not cure, cancer, and to increase patients' feelings of well-being. More recently, laetrile has been claimed to be effective not by itself, but as a component of "metabolic therapy" (see below).

Laetrile was first used to treat cancer patients in the 1950s, in California. According to proponents, it kills tumor cells but leaves normal cells alone. Although laetrile has been promoted as safe and effective, clinical evidence indicates that it is neither. When subjected to enzymatic breakdown in the body, it forms glucose, benzaldehyde, and hydrogen cyanide. Some cancer patients treated with laetrile have suffered nausea, vomiting, headache, and dizziness, and a few have died from cyanide poisoning. Laetrile has been tested in at least twenty animal tumor models and found to have no benefit either alone or with other substances. Several case reviews have found no benefit for the treatment of cancer in humans.

In 1982, in response to political pressure, the Mayo Clinic and three other U.S. cancer centers, with NCI sponsorship, began a clinical trial. Laetrile and "metabolic therapy" were administered as recommended by their promoters. The patients had advanced cancer for which there was no proven treatment. Of 178 patients, not one was cured or stabilized, and none had any lessening of any cancer-related symptoms. The median survival rate was about five months from the start of therapy. In those still alive after seven months, tumor size had increased. Several patients experienced symptoms of cyanide toxicity or had blood levels of cyanide approaching the lethal range.

In 1975, a class action suit was filed to stop the FDA from interfering with the sale and distribution of laetrile. Early in the case, a federal district court judge in Oklahoma issued orders allowing cancer patients with a physician's affidavit that they were "terminal" to import a six-month supply of laetrile for personal use. However, in 1979, the U.S. Supreme Court ruled that it is not possible to be certain who is terminal and that, even if it were possible, both terminally ill patients and the general public deserve protection from fraudulent cures. In 1987, after further appeals were denied, the district judge (a strong proponent of laetrile) yielded to the higher courts and ended the affidavit system. Now there are few U.S. sources of laetrile, but several Mexican clinics use it.

Livingston-Wheeler Therapy

Virginia C. Livingston, M.D., who died in 1990, postulated that cancer is caused by a bacterium she called *Progenitor cryptocides*, which invades the body when "immunity is stressed or weakened." According to Livingston, one could combat this (alleged) bacterium by strengthening the body's immune system with: (1) vaccines (usually derived from the patient's urine); (2) "detoxification" with enemas; (3) digestive enzymes; (4) a vegetarian diet that excluded chicken, eggs, and sugar; (5) vitamin and mineral supplements; (6) visualization; and (7) stress reduction. She claimed a very high recovery rate but published no clinical data to support this. Attempts by scientists to isolate the organism Livingston posited were not successful. Researchers at the University of Pennsylvania Cancer Center compared 78 of its patients with similar patients treated at the Livingston-Wheeler Clinic. All had advanced cancers for which there was no proven treatment. As expected, the study found no difference in the average survival time of the two groups. However, Livingston-Wheeler patients reported more appetite problems and pain.

Metabolic Therapy

Practitioners of "metabolic therapy" profess to diagnose abnormalities at the cellular level and to correct them by normalizing the patient's metabolism. They regard arthritis, cancer, multiple sclerosis, and other "degenerative" diseases as the result of metabolic imbalance caused by a buildup of "toxic substances" in the body. They claim that scientific practitioners merely treat the symptoms of the disease while they treat the cause by removing "toxins" and strengthening the immune system. The "toxins" are neither defined nor objectively measurable. "Metabolic" treatment regimens vary from practitioner to practitioner and may include coffee enemas, a "natural food" diet, vitamins, minerals, enzymes, "glandulars," laetrile, and various other nostrums that are not legally marketable in the United States. No scientific study has ever shown that "metabolic therapy" or any of its components is effective against cancer or any other serious disease.

The most visible proponent of "metabolic therapy" was biology professor Harold W. Manner, Ph.D., who died in 1988 [see NF 1:9-10, 1984; and NF 5:61-67, 1988]. In 1977, Manner announced that he had cured cancer in mice with injections of laetrile, enzymes, and vitamin A. (Actually, he disintegrated the tumors by injecting them with digestive enzymes, which cannot cure cancer that has metastasized.) During the early 1980s, Manner left his teaching position and affiliated himself with a clinic in Tijuana, Mexico. Although he claimed a 74% success rate in treating cancer, there is no evidence that he kept track of patients after they left his clinic, which is still operational.

Pau d'Arco

Pau d'arco (pronounced "pow darko"), which reportedly comprises a group of trees from two genera (*Tabebuia* and *Tecoma*), is also called ipéroxo (pronounced "eepayrosho"), ipés (pronounced "eepays"), lapacho, lapacho colorado, lapacho morado, and taheebo. Tea products made from the herb are sold in health food stores and by mail. Proponents claim that pau d'arco tea is effective against cancer and many other ailments. *Tabebuia* wood contains lapachol, which has been demonstrated to have antitumor activity in a few animal tumor models. However, no published study has shown a significant effect on cancer in humans. Studies during the early 1970s found that lapachol is not as readily absorbed by humans as by rats, and that anti-coagulant effects would accompany plasma levels high enough to influence tumors. Even low doses can cause nausea and vomiting and can interfere with blood clotting. Some researchers believe that lapachol should be studied further, with vitamin K to inhibit its anticoagulant activity.

[Editor's note: On July 16, I conversed by phone with Varro E. Tyler, Ph.D., Sc.D., author of *The Honest Herbal* (1993), who stated:

No one really knows, but the original pau d'arco products should have been from the genus *Tabebuia*. What passes for pau d'arco is supposed to come from *Tabebuia* or *Tecoma*...but whether it does or not, who knows? There's no control over these sorts of things....

There are other lapachol derivatives in the bark....No one has tested them...but I think they probably would also be toxic like lapachol at doses that were effective for anticancer treatment.

"This is a hoax, as far as I'm concerned," Dr. Tyler concluded.—J.R.]

Revisi Cancer Control

Revisi Cancer Control, also called lipid therapy and biologically guided chemotherapy, is based on the notion that cancer is caused by an imbalance between constructive ("anabolic") and destructive ("catabolic") body processes. Its main proponent, Emanuel Revisi, M.D., prescribed caffeine, iron, zinc, and lipid alcohols, all of which he classified as anabolic; and fatty acids, magnesium, selenium, and sulfur, all of which he classified

MIRACLES that Weren't

- During the 1980s, Anthony Sattilaro, M.D., wrote books and appeared on talk shows promoting macrobiotics [see NF 7:17-21, 1990] as a cancer cure. In the bestseller *Recalled by Life* (1982), he described how he had undergone conventional therapy for prostate cancer, yet he credited macrobiotics for his improvement. In *Living Well Naturally* (1984), he said his doctors had pronounced him in a state of permanent remission. He died of prostate cancer in 1989.

- Lawrence Burton, Ph.D., who died in 1992, offered "immuno-augmentative therapy" (IAT) at his clinic in the Bahamas. Burton claimed that IAT would cure cancer patients by influencing an immune defense system he postulated. In 1979, CBS-TV's "60 Minutes" gave Burton a tremendous publicity boost when a prominent physician stated that one of his patients apparently had recovered miraculously with Burton's treatment. The patient died twelve days after the broadcast, but "60 Minutes" refused to inform viewers of this fact. In 1990, oncologist Wallace Sampson, M.D., analyzed a booklet of 35 case histories used to promote Burton's clinic. He concluded that 30 had undergone standard or near-standard treatment and had had a significant probability of living as long as was recorded in the booklet. The other vignettes did not provide detail sufficient for sound judgment.

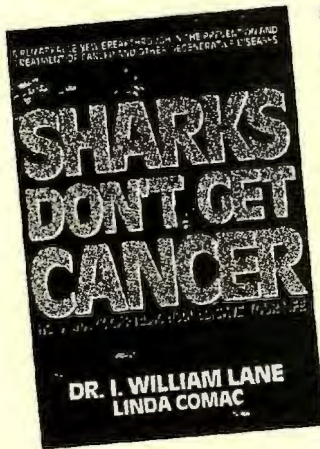
- Lucas Boeve, proprietor of a clinic in the Dominican Republic, has claimed that ozone gas administered at his facility has cured AIDS, Alzheimer's disease, arthritis, cancer, Parkinson's disease, and

many other diseases. He has also claimed that he provided an ozone machine responsible for curing "Magic" Johnson of AIDS. In 1994, the staff of "Dateline NBC" investigated all the cancer and AIDS patients in a list of success stories provided by Boeve. Of 13 cancer patients: 2 had died; 3 could not be found; 2 refused to be interviewed; 3 were alive but still had cancer; and 3 said they had been helped, but their doctors said they probably had been cancer-free before receiving ozone therapy. Of two AIDS patients, one said he felt well but was still HIV-positive, and the other had not been retested for HIV. Johnson's representatives said that he had had nothing to do with Boeve (or ozone therapy) and was still infected with the virus.

- Stanislaw R. Burzynski, M.D., who operates a clinic in Houston, Texas, claims his "antineoplastons" can "normalize" cancer cells and have helped many people with cancer get well. In 1988, talk-show host Sally Jesse Raphael presented four "miracles": patients of Burzynski who she said were cancer-free. The patients stated that Burzynski had cured them when conventional methods had failed. In 1992, "Inside Edition" reported that two of the four patients had died and that cancer had recurred in another. (The fourth patient had bladder cancer, which has a good prognosis.) The widow of one of Raphael's guests stated that her husband and five others from the same city had sought treatment after learning about Burzynski from a television broadcast—and that all had died of their disease.

As featured on 60 Minutes

Finally, What The World Has Been Waiting For... A Major Cancer Breakthrough



SHARKS DON'T GET CANCER

In 1983, two researchers at MIT published a study showing that shark cartilage contains a substance that significantly inhibits the development of blood vessels that nourish solid tumors, thereby limiting tumor growth. Working independently, researchers at Harvard found that if one could inhibit the development of a new blood network, one could prevent the development of tumor-based cancers and metastasis.

Tying together these two important findings, author Dr. I. William Lane traces further the pioneer work performed in this area and recounts his own involvement in the search for a truly effective treatment of tumor-based cancers. As events and research continue to unfold, shark cartilage may prove to be the first momentous step toward preventing and conquering cancer. *Sharks Don't Get Cancer* is the story of this amazing breakthrough.

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Natural Foods Merchandiser published this ad shortly after the "60 Minutes" promotion of shark cartilage. It states that "shark cartilage may prove to be the first momentous step toward preventing and conquering cancer"—a statement that would be illegal in marketing a shark-cartilage product.



as catabolic. His formulations were based on his interpretation of the specific gravity, pH (acidity), and surface tension of one-shot samples of the patient's urine. Scientists have offered to evaluate the Revici method, but they and Revici couldn't agree on procedures to ensure a valid test. In any case, his method of urinary interpretation is obviously invalid: The specific gravity of urine reflects the concentration of dissolved substances and depends largely on the amount of fluid a person consumes. Its acidity depends mainly on diet, but varies considerably throughout the day. Thus, even when these values are useful for a metabolic determination, information from a single urine sample would be meaningless. The surface tension of urine has no scientifically recognized diagnostic value. Recently, after a long struggle with New York State licensing authorities, Revici's medical license was permanently revoked.

Shark Cartilage Therapy: "Jaws" of the Nineties?

Powdered shark cartilage allegedly contains a protein that inhibits the growth of new blood vessels needed for cancer to spread. Although a modest anti-angiogenic effect has been observed in laboratory experiments, ingestion of shark cartilage has not been demonstrated to significantly inhibit angiogenesis in patients with cancer. Even if direct applications were effective, oral administration would not work because the protein would be digested, not absorbed intact.

Nevertheless, in two broadcasts during the spring of 1993, the TV newsmagazine "60 Minutes" promoted the claims of biochemist and entrepreneur I. William Lane, Ph.D., coauthor of *Sharks Don't Get Cancer*. The segment highlighted a Cuban study of 29 "terminal" cancer patients who received shark-cartilage preparations. Some of the patients were shown exercising, and narrator Mike Wallace reported that most of them felt better several weeks after the beginning of treatment. Unmentioned was the fact that "feeling better" does not indicate whether a cancer treatment is effective. Also unmentioned was that sharks do get cancer, even of their cartilage. NCI officials subsequently reviewed the Cuban data and concluded that they were "incomplete and unimpressive."

Health food industry publicists had a field day after the broadcast. They began suggesting that shark-cartilage preparations could not only prevent and treat cancer but were effective against arthritis and several other health problems. Many supplement manufacturers market products that sell for \$25 to \$80 for a one-month supply. The market leader, Cartilage Technologies, has been advertising in medical journals and distributing information packets stating that it is sponsoring an FDA-approved Phase II clinical trial that began last year.

[Editor's note: Is it safe to go back into the health food store? In the October 1994 issue of *Alternative Medicine Digest*, editor Betty Kamen, Ph.D., stated:

For serious problems, large quantities of shark cartilage are imperative. Recommended amounts are about a gram per two pounds of body weight, so an average of 100 capsules [per day] would be necessary where need is critical. Liquid vials make much more sense than capsules—they work faster and are more potent. One vial is the equivalent of 80 to 100 grams!

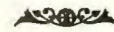
Kamen further stated that shark cartilage was available from Allergy Research Group, in San Leandro, California, and she provided its toll-free number. I phoned the company on July 14. The woman who answered the phone said the product was available in frozen vials. She asked me if I was a doctor. After I told her I was a chiropractor, someone named Bill took my call. Bill asked me if I was a "medical professional," and I said I was a "Doctor of Chiropractic." "Well, that certainly counts," he responded. He stated that shark cartilage

was for sale in 7-cc vials, that most patients took 7 cc per day, that this amount was equivalent to 80 grams of powder, and that the cost of the product to me would be \$290 per unit of 24 vials. That's \$12 a day before markup!—J.R.]

Vitamin C

The belief that vitamin C is useful against cancer is largely attributable to Linus Pauling, Ph.D. [see NF 11:52, 1994]. During the mid-1970s, Pauling began alleging that high doses of vitamin C could prevent and cure cancer. In 1976 and 1978, he and a Scottish physician, Ewan Cameron, reported that a group of 100 terminal cancer patients treated with 10,000 mg of vitamin C daily had survived three to four times longer than historically matched patients who had not received vitamin C supplements. However, Dr. William DeWys, chief of clinical investigations at the NCI, found that the patient groups were not comparable. The vitamin C patients were Cameron's, while the other patients were managed by other physicians. Cameron's patients were started on vitamin C when he labeled them "untreatable" by other methods, and their

subsequent survival was compared to the survival of the "control" patients after the latter patients were labeled untreatable by their doctors. DeWys found that Cameron's patients had been labeled untreatable much earlier in the course of their disease. This means that they entered the hospital before they were as sick as the other doctors' patients and, therefore, would naturally be expected to live longer. Nevertheless, to test whether Pauling might be correct, the Mayo Clinic conducted three double-blind studies involving a total of 367 advanced-cancer patients. All three studies found that patients given 10 grams of vitamin C daily did no better than those given a placebo. Despite many years of taking huge daily amounts of vitamin C, both Pauling and his wife Ava died of cancer—she in 1981, he in 1994.



Stephen Barrett, M.D., a retired psychiatrist, is a board member of the National Council Against Health Fraud. His 38 books include *The Health Robbers: A Close Look at Quackery in America* and *The Vitamin Pushers: How the "Health Food" Industry Is Selling America a Bill of Goods*, both published by Prometheus Books.

HEALTHCARE ESOTERICA

Here's the 7th installment of descriptions of mystical and/or supernaturalistic alternativest methods.—J.R.

Advanced pranic healing: Subject of a "serious reference work" of the same name, written by chemical engineer and "Master Pranic Healer" Choa Kok Sui. The method allegedly uses "color pranas" and "chakral" techniques to effect "very rapid healing." It includes "divine healing." Sui is also the author of the bestseller *Pranic Healing* (1990) and its companion piece, *Pranic Psychotherapy* (1993) [see NF 11:49, 1994, and NF 11:60, 1994].¹

Blood crystallization (diagnostic blood crystallization): Pseudodiagnostic method involving the introduction of a blood sample to a copper chloride solution. "Crystal signs" of illness in the resultant "blood-crystal picture" allegedly express the guidance of "a higher functional plane coming to expression." "Organ-signs," for example, purportedly indicate dysfunction of an organ or a bodily system. Supposedly, each so-called organ-sign reflects a "multi-layered organ principle" (which includes "the organ-bound 'soul organ'") and, on "the psychic plane," is the foundation for related "soul qualities."²

Breathwork: "Working with breath inhalation and exhalation patterns to achieve physical, emotional, and spiritual change," according to *The New Age Dictionary* (1990).³

Breema: "A form of laying-on-of-hands healing that came from Afghanistan," according to Sybil Sanders, of Nine Gates, Inc. (See "Nine Gates Training Program," below).^{4,5}

Healing touch: "A way of moving energy around" manually, according to a 1995 edition of "The Other Side." Therein, an alleged beneficiary of the method stated: "It feels like having a complete massage without being touched." The method posits an "energy field."⁶

Kum Nye (Kum Nye relaxation): "Holistic" system reportedly based on Tibetan medicine and Buddhist "mind-body disciplines." It involves breathing exercises, self-massage, slow movements, and visualization; posits "energy centers" (e.g., the "head center" and the "heart center") and "energy blockages" (e.g., "sexual blockages"); and purportedly is usable as a "healing process." The practice allegedly "vitalizes" the senses and conduces to alertness and limberness.^{7,8,9}

Nine Gates Training Program: "Essential training for daily life inspired by ancient mystery schools," according to its provider, Nine Gates, Inc. The program involves Breema (see above) and reiki (a variant of the laying on of hands). It posits a soul, "powerful energies of the third eye," and "energy centers" of the belly, knees, feet, and base of the spine. The "belly center" allegedly stores a "deep serene power" usable for healing.⁵

Swedish-Esalen: A "light/relaxing" and "nurturing" form of massage that allegedly reintegrates the body and soul.¹⁰

Wu Ming Qigong: "Unique energy system" and "self-healing practice" that allegedly helps users connect body, mind, and spirit.¹¹

- ¹ 1995–96 catalog of Samuel Weiser, Inc., in York Beach, Maine.
- ² A. Selawry. "Functional Diagnosis Extended Through Blood Crystallization." *Mercury: Journal of the Anthroposophical Therapy and Hygiene Association* (ANTHA), No. 10, 1990.
- ³ A. Jack (ed.). *The New Age Dictionary: A Guide to Planetary Family Consciousness* (second edition). New York: Japan Publications, Inc., 1990.
- ⁴ Sybil Sanders, of Nine Gates, Inc., telephone interview, July 11, 1995, Corte Madera, Cal.
- ⁵ Mailing postmarked July 8, 1995, from Nine Gates, Inc., in Corte Madera, California.
- ⁶ Edition of "The Other Side" broadcast in New York City on NBC on June 19, 1995.
- ⁷ T. Tulku. *Kum Nye Relaxation. Part 2: Movement Exercises*. Berkeley, Cal.: Dharma Publishing, 1978.
- ⁸ 1992–1993 class catalog of Nyingma Institute, in Berkeley, California.
- ⁹ Fall 1991 and Winter 1991 class catalogs of Nyingma Institute of Colorado (defunct in December 1992), in Boulder, Colorado.
- ¹⁰ Leaflet distributed in 1995 by Latitude Therapies, in Santa Monica, California.
- ¹¹ *Tao in Your Daily Life* (the "Natural Healing" newsletter of the American Taoist Healing Center, Inc., in New York City), Vol. 1, No. 3, July 1995, p. 8.

Seven Alternativist Schools

Below I describe some nonaccredited providers of nonstandard healthcare credentials.—J.R.

- In 1989, the **American Association for Parapsychology** (AAP), in Canoga Park, California, offered "A Complete Course in Parapsychology." This correspondence program led to a certificate of membership and a diploma. It featured such subjects as radiesthesia ("used in medical diagnosis"), psychometry (object reading, a form of divination), and "spiritual healing." In July 1995, AAP was offering a Doctor of Metaphysics "external degree" program through the **American International University** (A.I.U.), a nonaccredited organization with which it shared a P.O. box. The program led to a Ph.D. degree.
- For its 1991–1992 academic year, the **Atlantic Academy of Classical Homeopathy** (AACH), in New York City, offered a 500-hour classroom program that culminated in a "Certificate in Homeopathy (C.Hom.)." Previously, the academy had offered a "certification system" leading to a "Certificate in Homeopathic Therapeutics (CHT)." The academy was founded in 1989. In August 1995, it had an "Off Campus" C.Hom. program.
- In 1990 and 1991, the **California School of Herbal Studies** (CSHS), in Forestville, California, offered an 8-week program on the West Coast that led to a "Certificate in Therapeutic Herbalism." The school also offered a correspondence course titled "Therapeutic Herbalism" (previously "Medical Herbalism") to "anyone interested in herbal health care." It described this course as similar to the former and as the cornerstone of "developing a practice as a medical herbalist." The school was founded in 1978. In mid-1995, CSHS offered an on-site "intensive training program" comprising two semesters: "Foundations of Herbalism" and "Therapeutic Herbalism." On July 14, 1995, I called the school, and the woman who answered the phone told me that the program led to a "certificate of completion."
- For its 1992–1993 academic year, the **Institute of Transpersonal Psychology** (ITP), in Palo Alto (previously in Menlo Park), California, offered two "M.A." correspondence programs: (1) the 21-month "Master of Arts in Transpersonal Studies (MATS)" program and (2) the 27-month Master of Transpersonal Psychology (MTP) program. Transpersonal psychology is a combination of Eastern mysticism, Jungian psychology, and psychosynthesis [see NF 12:49, 1995]. ITP was founded in 1975. By 1994, it attained a "preaccredited status" recognized by the U.S. Secretary of Education, and "Candidate for Accreditation" status with CORPA. On July 12, 1995, I phoned ITP, and someone in the admissions office told me that "hopefully" the institute would achieve accreditation in 1998.
- In early 1995, **The New Seminary**, an interfaith "National Academy of Wisdom" in New York City, offered "The Physician of the Soul Program," a videotape course whose subjects included such "spiritual approaches to healing" as: creative visualization, "Homeopathic Healing," hypnotherapy, "Kabbalistic Healing," "Quantum Healing," rebirthing, reiki (a variant of the laying on of hands), shamanic healing, shiatsu, and "Therapeutic Touching" (sic). The course required attendance at a "one-day Intensive Retreat" and led to certification as a modern "Physician of the Soul." The seminary was founded in 1981.
- In early 1994, the **University of Metaphysics**, in Los Angeles, California, offered self-paced, "ALL HOME STUDY" doctoral programs that led, for example, to a Ph.D. degree in "healing" and degrees in "holistic science" (Hsc.D.®) and "metaphysical science" (Msc.D.®). It advertised that its programs had but one prerequisite: "a sincere desire to improve the quality of human life." On July, 7, 1995, I mailed a check for \$5 to the organization's "communications address," in Studio City, California, for a "detailed Research Report" and "full details" of the "Doctoral Degree Program." The mailing I received about a week later included a letter from dean Paul L. Masters, Msc.D., in which he said a "Student Enrollment Drive" was in progress, enabling enrollment before August at half the regular tuition. According to the so-called research report, titled "A Doctoral Career in Metaphysics" (© 1994): (1) the International Metaphysical Ministry is the university's parent body; (2) the doctoral program is self-paced, and enrollees can meet degree requirements in less than a year; (3) upon successful completion of the first six months of study, enrollees receive the Ministerial Ordination Diploma, which "gives one the legal right" to "practice spiritual healing," and the "Practitioners Ordination Diploma," which "protects one's right legally to practice Spiritual Healing"; and (4) to those who successfully complete the "Doctoral Degree Program" and have "Ministerial standing" with the International Metaphysical Ministry, the "university" gives one of three "Ph.D." degrees: Doctor of Metaphysics, Doctor of Metaphysical Counseling, and Doctor of New Thought Ministry.

Reflexology: Science or Scam?

Jack Raso

The term "reflexology" is generic and, in activist circles, broadly refers to any method whose essence is the stimulation (especially digital) of areas below the skin (especially appendages) to benefit a specific part of the body not proximate to the stimulated area. Reflexology, also called reflexology therapy, is also an alleged means of diagnosis. It is vitalistic and has ancient roots. Its "reflex points" (also called reflexes, reflex areas, and reflex buttons) and "zones" (also called reflex zones) are analogous, respectively, to the "acupoints" and meridians of traditional Chinese medicine. Forms and variants of reflexology include auricular reflexology, body reflexology [see NF 12:47, 1995], chakra energy massage, the Laura Norman method [see NF 12:29, 1995], the metamorphic technique, the Original Ingham Method™ [see NF 12:30, 1995], the reflexology workout [see NF 12:30, 1995], vita flex, and zone therapy [see NF 12:31, 1995]. Proponent and quasi-proponent identifications of reflexology vary substantially, for example:

- zone therapy
- a descendant of zone therapy
- zone therapy, comprising:
 - (1) macroreflexology, e.g., acupressure and acupuncture; and
 - (2) microreflexology, e.g., ear reflexology, foot reflexology, and hand reflexology
- foot reflexology
- a type of shiatsu that focuses on the hands and feet

I first experienced foot reflexology in 1993. The practitioner, evidently a teacher of the Laura Norman method, applied lotion to my feet before massaging them. She stated that she generally used lotion even though the method excluded it. The form of reflexology she performed during the one-hour session consisted of manual massage, almost exclusively

of the feet. I rather enjoyed it. The reflexologist told me I had "some tightness" in my intestines and remarked that many reflexologists have no compunctions about rendering diagnoses. My second reflexology experience, which I describe below, was very different.

Later that year, the journal *Obstetrics & Gynecology* published a report of a double-blind, randomized, placebo-controlled study of reflexology. The authors, Terry Oleson, Ph.D., and William (Bill) Flocco, founder of the American Academy of Reflexology, in Burbank, California, defined reflexology therapy as "the application of manual pressure to reflex points on the ears, hands, and feet that somatotopically correspond to specific areas of the body." What somatotopic correspondence is, is unclear. According to the report, the objective was to determine whether reflexology, relative to placebo treatment, could significantly reduce premenstrual symptoms. All 35 subjects individually attended one half-hour session per week for eight weeks. "Trained reflexology therapists" pressed specific "reflex points" and two specific acupuncture points of subjects in the "true" group; but, to subjects in the placebo group, they gave "uneven tactile stimulation" to areas (on the same appendages) "not considered appropriate" for the treatment of premenstrual syndrome (PMS). The researchers concluded that their findings "support the use of ear, hand, and foot reflexology for the treatment of PMS." However, they described the placebo treatment as "either overly light or very rough," leading me to suspect that it had been tactually inferior to the reflexology performed. (Enlisting nonreflexologist practitioners of a tactual method, such as craniosacral balancing or *jin shin do*, to treat subjects in the placebo group would eliminate the difficulty the researchers said reflexologists had when they pseudo-treated

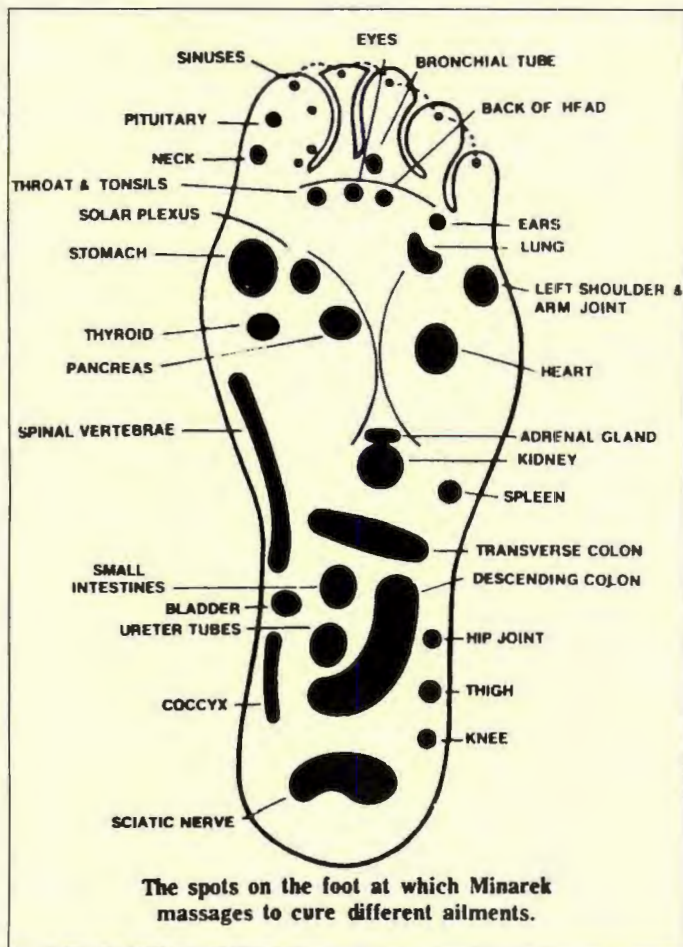


Diagram in copy of Minarik's introductory so-called book
(on display in a health spa on July 30, 1995)



subjects.) At all events, the study certainly does not validate any theory of reflexology. One of the most cockamamie reflexology theories posits "crystalline deposits" linked to disease: allegedly, crystals form subcutaneously in the "relevant" foot zone when a physical disturbance occurs, and their breakdown relieves the affected part of the body.

Star Collector?

Brochures distributed between mid-1990 and August 1995 stated that foot reflexologist "Dr. Richard Minarik, N.D.," of Rego Park, New York, had treated various celebrities and talents with foot reflexology, including the following.

- triple world heavyweight champion Muhammad Ali
- world heavyweight contender Gerry Cooney
- prizefighter Ken Norton
- Michael Spinks (one hour before the match that would make him world heavyweight champion)
- Jackie Onassis
- President Ronald Reagan
- New York State Governor Mario Cuomo
- talk-show host David Hartman
- radio disc jockey Ted Brown
- Miss Universe Margarete Gardner
- five New York Mets players
- many of the Radio City Music Hall Rockettes

In 1990, the brochure included a photo of Minarik and Mario Cuomo, shoulder to shoulder in front of a gas station. The caption described Cuomo as looking "very contented after getting his ailing back cured with a foot reflexology treatment" from the "famed" foot reflexologist. However, in August of that year, Governor Cuomo responded that he "in no way" endorsed "Mr." Minarik's work and that Minarik had never treated him. Brochures distributed between late 1993 and August 1995 do not mention or depict the former governor.

I first laid eyes on Minarik on July 29, 1995, when I chanced upon him in a steam room. This was in a large health spa in Woodside, New York, that had displayed his promotional materials for years. I recognized Minarik from a photo in a copy of a tabloid clipping I had recently seen at the club. The man sitting beside him asked about his cellular phone, perched just outside the window ahead of them. Minarik told the man he was expecting a call from a patient. Before I left the club, I obtained his brochure from a display case.

The cover of the brochure stated:

Foot Reflexology is a science which deals with the principle that there are reflexes in the feet relative to each and every organ and all parts of the body.

As a person gets older, inorganic calcium builds up on these nerve endings causing a shortage of nerve energy back to the corresponding parts of the body. By skillfully stimulating these reflexes, these inorganic calcium deposits can be gradually dissolved enabling renewed nerve energy and blood circulation to previously sluggish glands, organs or other parts of the body. Even after the first treatment, the patient experiences a profound sense of well-being and euphoria.

These assertions are scientifically *footless*. The cover further states that foot reflexology has "successfully alleviated" anxiety, arthritis, back pain, bursitis, constipation, depression, fatigue, "female problems," glandular disorders, headaches, intestinal ills, neck stiffness, sciatica, and more than a half-dozen other health problems.

Footage of a Naturopath

That Saturday afternoon, I phoned Minarik and made a next-day appointment

for a 45-minute "treatment" at the "SPECIAL INTRODUCTORY FEE" of \$15. Minarik's office, apparently an apartment, was on the first floor of a seven-story apartment building in Rego Park, Queens (a borough of New York City). The bicycle ride from my home took less than eight minutes. "Treatment" took place in a living-roomlike space that contained a central massage table, a couch that afforded an adjustable massage, a reclinerlike armchair, two footrests, an exercise machine, an electric roller apparently designed to massage the buttocks, a pile of flyers promoting *Super Blue Green Algae* [see NF 12:44 & 51, 1995], and about a dozen celebrity blowups, including the aforementioned shot of Minarik and Cuomo.

Minarik stated that he had been practicing there for 18 years and that he saw four or five patients every day. "I've been treating people for twenty years already," he said. He wore a white lab jacket throughout the session and came across as a moderately affable professional.

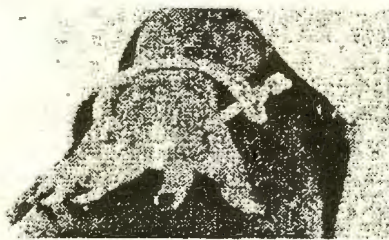
DR RICHARD MINARIK OF REGO PARK, QUEENS IS PROUD TO ANNOUNCE HIS INVENTION

of a simple device that can stop any pain in the body within minutes, and immediately relieve nervousness and depression. The device is called the *Acupresser* and is truly the most exciting and phenomenal invention in the history of alternative medicine.

For 33 years, Dr. Minarik, a Naturopath and Wholistic doctor has successfully treated mental disease and all forms of physical disease such as Migraine headaches, Bursitis, Arthritis, Poor circulation, Cold hands and feet, Numbness of extremities, Carpal tunnel syndrome, PMS, Tumors of different nature including Fibroid, Sciatica, Gout, Varicose veins, Digestive problems, Gas, Bloating, Constipation, Ulcers, Nervousness, Depression, Insomnia, Chronic fatigue, and Candida. Dr. Minarik believes you should first treat the body's built-in God given healing system and then the body will heal itself. Daily use of the *Acupresser* is the next best procedure.

Dr. Minarik's treatment includes foot reflexology, Chinese Acupuncture, Rolling, high colonic irrigation, and Acupressology, all of which he does himself. Daily use of the *Acupresser* has almost the same effect.

Dr. Minarik's amazing incredible invention *The*



Acupresser" is a simple inexpensive device that can be purchased and used at home. The *Acupresser* is fastened to various pressure points on the body. Within minutes you will be in a state of profound relaxation. This happens because endorphin is immediately released from your brain. Endorphin is a pain killing substance more potent than the drug morphine and as a sedative more potent than the most frequently prescribed tranquilizer. Using the *Acupresser* daily has the same effect as if you were to go to Dr. Minarik's office and receive his various therapies. The *Acupresser* may totally

change your life.

Dr. Minarik's staff will be giving free demonstrations of the *Acupresser* Monday to Friday 10:30 AM to 8 PM and Saturday and Sunday 10:30 AM to 4 PM. Demonstrations will be given every hour on the hour with a limit of 6 persons per demonstration. You must call at least one day in advance to reserve your free treatment.

Dr. Richard Minarik

Suite 1D, 61-61 Woodhaven Blvd., Rego Park, N.Y. 11374

718-429-2139

Call or Write for FREE Brochure

"What kind of problem do you have?" he inquired. I lied, stating that I had been diagnosed with high blood pressure a few years before but didn't have symptoms. I said that I was "supposed to" take medication but didn't, and that I treated my condition with exercise and diet.

"So, high blood pressure, you said?" asked Minarik.

"Yeah."

"Anything else? Any pains?"

"No."

The first phase of Minarik's "reflexology treatment" involved his placing "acupressers" on my hands and feet: (1) a plastic device, indistinguishable from a spring clothespin, on each little toe, (2) a plastic helmetlike device on each big toe, (3) a plastic screw-device with Velcro on each foot, and (4) a "screw-on" plastic clamplike device on each hand and foot. As I lay in the reclinerlike armchair, I looked at the blowup of Minarik and Cuomo and observed: "That's Mario Cuomo, isn't it?"

"Yeah," said Minarik. "He was one of my patients."

I told Minarik that years ago I had applied to the National College of Naturopathic Medicine; then I asked where he had studied.

"In California," he replied.

"Is the school still there?"

"Uh, no...."

I asked the name of the school, and he said: "William Fitzgerald School of Naturopathic Medicine and Zone Therapy."

Then I lay "adorned" for about twenty-three minutes. Minarik spent most of this time in what sounded like a kitchen. Six minutes before the end of the period, he declared that, whatever my blood pressure had been "before," it was now lower. As he removed the devices, he asked for how long had I had a blood-pressure problem, and I said ten years.

The next phase involved manual massage of my feet, calves, and shins; the next,

massage of my soles and toes with a vibrator that had a tapered head, and of the left and right sides of my feet with the Hitachi *Magic Twin-Head Massager*. The following phase involved my sitting on a footrest with my hands on the "roller"; the next, getting a massage from the mechanical couch; and the last, Minarik's cracking my neck. I somewhat disliked Minarik's cracking my neck, knuckles, and toes, especially since he had not stated his intention beforehand.

Minarik sold me the *Acupresser* for \$40: junk consisting of four plastic clamplike devices and a pair of Velcro devices. I asked him why the Velcro on one device was white and on the other, black. He said the difference balances yin and yang.

Minarik stated that he would thenceforth charge me \$30 per visit. He recommended two visits weekly for several weeks (purportedly to break up calcium deposits), followed by one visit per month.

On August 3, I again happened to meet the 63-year-old naturopath at the health spa. He asked me how I felt after the "treatment." I said "fine," omitting that I thought his treatment was irrelevant. Indeed, the euphoria his brochure had forecast had missed me with a vengeance. (The next day, the manager of a printing office that Minarik has patronized said he guessed the shop had been producing these brochures for about ten years.) Although Minarik had not given me any nutrition advice (I'd told him I had a degree in nutrition), he did remark that he took a garlic supplement daily and tried to eat vegetables four times a week.

The Bottom Line

Reflexology is a highly variegated practice whose theories lack scientific substantiation. It can be pleasurable or unpleasant, a massage or an invitation to quackery, or just a waste of time. In my opinion, it's not worth the trip.

F O R U M

Nutrition

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Editor's note: Since the late 1980s, a trend among nutrition popularizers has been to dichotomize food as healthy (anti-disease) and harmful. However, the beneficialness or harmfulness of ingesting a particular food depends on: (1) the amount consumed, (2) the frequency of consumption, and (3) the eater's health status, genetics, and long-term pattern of food consumption and physical activity. In any case, talking up cabbage, carrots, cranberries, garlic, onions, oats, olive oil, green tea, wine, yogurt, and certain other foods as nature's "medicinal wonders" tends to obscure, or at least to de-emphasize, the main problem: In a nation of underactive overeaters, a land of condensed milk and organic honey, where fast-talking fast food commercials target children and/or the disadvantaged, high-fat foods and highly sugared foods are "getting away with murder." Such foods,



though not intrinsically harmful, are generally harmful in this milieu. High-fat foods are, in my opinion, our dietary archvillain.

Many studies have shown that reducing blood cholesterol decreases the incidence of heart disease and mortality therefrom. The National Heart, Lung, and Blood Institute's National Cholesterol Education Program recommends that all Americans who are at least 20 years old routinely obtain a cholesterol determination. It classifies blood-cholesterol values below 200 mg/dl as "desirable," and values above 239 as "high."

This issue's lead article is an adaptation of a more extensive treatment of food, fat, and heart disease. Dr. Mirkin's no-nonsense, piscilactovegetarian diet features a fat allowance of 15 to 20 grams. Americans derive
(continued on page 72)

The Skinny on Low-Fat Dieting

Gabe Mirkin

Simply boosting one's intake of corn oil (for its unsaturated fat), olive oil (for its monounsaturated fat), and/or fish oil (for its omega-3 fats) cannot prevent heart attacks. Sensible low-fat diets restrict all types of fat.

Types of Fat

Fats, also called lipids, are chemical compounds (and mixtures of such) that are not water-soluble but dissolve in organic (carbon-containing) solvents (e.g., chloroform and gasoline). They include oils, phospholipids (e.g., lecithin), steroids (e.g., cholesterol and vitamin D), terpenes (e.g., beta-carotene), triglycerides, and waxes (e.g., beeswax). Triglycerides, which yield glycerol (glycerin) and fatty acids, constitute most of the fat in food and in the body. The main types of dietary fat are saturated, polyunsaturated, and monounsaturated.

While foods are classified by the predominant type (see table), all three occur in all natural food sources of fat. Below I describe some fats and fat substitutes relevant to the prevention and treatment of disease.

• Saturated fats

Saturated fats are dietary fats in which hydrogen-saturated fatty acids predominate. Meat, eggs, and tropical oils, such as coconut, palm, and palm kernel oils, contain saturated fats in large proportions. When caloric intake exceeds caloric need, saturated fats raise blood cholesterol more than any other dietary constituent. However, even with a marked increase in saturated-fat intake, appropriate caloric restriction lowers blood cholesterol. Although anything that reduces the intake of saturates will lower blood cholesterol, the decrease will be small if the reduction in saturated-fat intake is due to replacement by other types of fat.

- **Polyunsaturated fats**

Polyunsaturated fats are dietary fats whose predominant fatty acids have spare room for at least four hydrogen atoms. Vegetable oils are particularly rich sources of polyunsaturated fats. Substituting polyunsaturated fats for saturated fats will effect a small decrease in both LDL-cholesterol (which, in excess, is atherogenic) and HDL-cholesterol (which is beneficial). However, merely increasing one's intake of polyunsaturated fats raises triglycerides; the liver makes triglycerides when caloric intake exceeds the body's need. Moreover, consuming polyunsaturates in large amounts increases the risk of infections, gallstones, and cancer of the breast, colon, gallbladder, and uterus.

- **Monounsaturated fats**

Monounsaturated fats are dietary fats whose predominant fatty acids have spare positions for only two hydrogen atoms. Almonds and olives are particularly rich sources of monounsaturated fats. As with polyunsaturated fats, substituting monounsaturated fats for saturated fats conduces to a small reduction of blood cholesterol. However, unlike substitutive polyunsaturates, substitutive monounsaturates lower LDL- but not HDL-cholesterol. Replacing lard and butter with olive oil is reasonable; replacing them with air is ideal.

- **Omega-3 fats**

Omega-3 fats are polyunsaturates that occur mostly in fish oils. They do not lower cholesterol unless one reduces one's total fat intake. However, they do prevent the obstructive clotting that tops off a heart attack. Thus, persons with atherosclerosis or who have had a heart attack may benefit from increasing their intake of omega 3's; but plaque-reducing total fat restriction is more important. Eating fish twice a week provides the maximum anti-clotting benefit; benefits do not accrue with greater consumption.

- **Tropical oils**

Palm oil, palm kernel oil, and coconut oil contain saturated fats in large proportions. The main sources of these tropical oils are bakery products and prepared canned and frozen foods. The claim that palmitic acid, the principal saturated fat in tropical oils, does not raise cholesterol is incorrect. Only in persons with low cholesterol levels who ingest fewer than 300 mg cholesterol daily does palmitic acid not cause an increase in cholesterol.¹ With a typical American diet, palmitic acid raises cholesterol significantly.

- **Hydrogenated oils (trans fats)**

In response to public pressure, bakery manufacturers markedly decreased their use of tropical oils. But, since the shelf life of other vegetable oils is very short, bakers use hydrogenated fats, which have a much longer shelf life. In addition to *cis* fatty acids, which occur naturally, commercially prepared hydrogenated fats contain *trans* fatty acids, which do not occur naturally. The U.S. Department of Agriculture has shown that they increase HDL-cholesterol as much as saturated fats do. Worse, they tend to lower levels of HDL-cholesterol. "Fat free" breads, such as most brands of pita (pocket bread) and some bagels, are the bakery products of choice. [Although a cow's rumen (its first gastric compartment) may contain hydrogen, undergo pressurization, and hydrogenate fats, only *cis* fatty acids result. This is so mainly because no catalysts (enzymes) that occur naturally support reactions that produce *trans* fatty acids.—M.K.]

- **Fat substitutes**

Fat's contribution to a food's taste is due to its melty "mouth feel," a quality perceived through the palate and the tongue. Some synthetics have a feel similar to that of fat but supply fewer (or no) calories. Such fat substitutes include the following.

Olestra, which is nonnutritive, is a sucrose polyester (SPE), i.e., a "combination" (reaction product) of sucrose (table sugar) and fatty acids. Procter & Gamble has trade named it *Olean*.

Simplese is a low-calorie protein derivative of egg white and milk.

Maltodextrin is a nutritive derivative of starch.

Polydextrose (also called polyglucose and modified polydextrose) is a low-calorie derivative of glucose (grape sugar) and sorbitol (a sweetish derivative of fruit sugar).

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In contrast, carrageenan (carrageenin), a soluble-fiber food stabilizer derived from seaweed, is not fatlike but can "juice up" a lean hamburger.

Lower-calorie appeasement of the desire for food is crucial to losing weight. Sugar substitutes do not facilitate weight loss.^{2, 3} Likewise, because they lack "satiety value," artificial fat substitutes probably do not facilitate weight loss or reduce cholesterol. The only noncaloric food constituent that conduces to "gastro-

nomic satisfaction" is fiber. Artificial-fat desserts are high in calories and very low in fiber. However, "fat free" salad dressings are acceptable because they encourage consumption of vegetables and fruit salads.

Simplified, the guiding principle of low-fat dieting is: To lose weight or to lower cholesterol, one's intake of fat of any kind should not exceed 20 grams per day. The fat intake of many Americans is closer to 100 grams.

Food Facts and Fat Lies

Consuming oat bran, walnuts, or wine does not prevent heart attacks. Eating bacon, butter, or pizza does not cause heart attacks. No single food prevents or causes heart attacks. Nevertheless, many newspaper and magazine articles extol this or that food as preventive or curative. Usually such articles stem from manufacturers' efforts to maximize profits. As a member of the media, I continually receive publicity packages from food producers' associations

Percentages of Types of Fat in Foods

FOOD	% SATURATED FAT	% MONOUNSAT. FAT	% POLYUNSAT. FAT	FOOD is classified as...
Meat (average)	52	46	29	Saturated
Chicken	36	42	22	Monounsaturated
Fish (average)	50	40	10	Saturated
Eggs	38	53	9	Monounsaturated
Whole milk	61	36	3	Saturated
Butter	61	36	3	Saturated
Olive oil	12	81	7	Monounsaturated
Corn oil	11	31	58	Polyunsaturated
Almond oil	9	70	21	Monounsaturated

and special-interest groups, touting studies that lend a semblance of distinction to their particular product. Eager writers and editors turn such press releases into sloppy, yet often authoritative-sounding, articles. While there are laws to control advertising claims, news articles and radio and television reports can heap praise without limit on even worthless products. I describe some glamorized foods below.

• Chicken

Madison Avenue has cast chicken as a low-fat food, but no matter how one cooks it, it's not especially "heart-healthy." The dark meat contains as much fat as beef. A cupful of skinless, trimmed dark meat contains 14 grams of fat. An 8-ounce skinless, trimmed chicken breast has 6 grams of fat (nearly a third of my 20-gram limit) and 146 mg cholesterol. Fried chicken has twice as much fat as beef.

• Fructose

Glucose (also called dextrose, grape sugar, and blood sugar) is the form of sugar circulated throughout the body. Insulin is necessary for its

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entrance into most cells. Insulin also promotes the conversion of glucose to fat and the storage of fat. Some health-food fictioneers have claimed that, since fructose (also called fruit sugar or levulose) can enter cells without insulin, it's not fattening. This doesn't wash, because the body converts ingested fructose to glucose either before it enters the bloodstream or shortly after, in the liver.

Another dubious claim is that, since fructose is over fifty percent sweeter than sucrose, dieters can ingest fewer calories without sacrificing sweetness. However, the relative sweetness of fructose varies with the food it is sweetening.

In any case, fructose raises blood levels of triglycerides and uric acid more than sucrose does.⁴

- **Juices**

Infomercials and celebrity spokespersons have extolled juicers, claiming that fresh juices prevent or cure a host of health problems. Although evidence suggests that eating fruits and vegetables in large amounts decreases the risk of cancer or a heart attack, ingesting juices extracted from fruits and vegetables in preference to the solids is not healthier than simply eating the fruits and vegetables. True juices lack fiber, which helps to lower cholesterol and prevent constipation and gallbladder disease.

- **Lowfat milk**

Whole ("regular") milk must contain 3 1/4 percent fat by weight. Since milk is mostly water (which is calorie-free), 3 1/4 percent of its weight represents half of its calories. A cup of whole milk contains 8 grams of fat.

Lowfat milk (also termed partly skimmed milk) is a variation of skim (nonfat) milk. It contains fat in a fixed proportion of one or two percent. Two-percent lowfat milk is a high-fat food. Forty percent of its calories come from fat, and one cup contains 5 grams of fat—25% of my 20-gram limit. The only type of milk that is truly low-fat is skim milk, which is less than 0.5 percent fat and maximally contains 1 1/4 grams of fat per cup.

- **Nuts**

According to several newspaper reports, a study published in the *Archives of Internal Medicine* showed that eating nuts prevents heart attacks. The study showed no such thing.⁵ The researchers asked 31,000 Seventh-Day Adventists (SDAs) how often they consumed certain foods. Those who said they ate nuts more than five times a week had fewer heart attacks. All SDAs are vegetarians; many are ovolactovegetarians, but some are vegans (i.e., do not consume any foods derived from animals). Vegans (also called pure vegetarians and

total vegetarians) tend to substitute nuts and beans, which are low in saturated fat, for animal foods. Nuts do not prevent heart attacks, but excluding eggs and whole-milk dairy products is a protective step. [Furthermore, it is reasonable to suspect that nut-eating SDA vegans would be more likely than nonvegan SDAs to follow their church's proscription of smoking and the intake of alcoholic beverages, coffee, and certain drugs.—J.R.]

- **Oat bran**

A study published in the *Journal of the American Medical Association* was widely cited to support the claim that oat bran prevents heart attacks. Subjects with high cholesterol levels ate 1 1/3 cups of oat bran daily, and their average cholesterol level decreased from 223 to 218—an undramatic finding.⁶

Oat bran contains soluble fiber, which binds to bile acids—used by the liver to form cholesterol—in the intestines and prevents their reabsorption. High fiber consumption is beneficial to most people. Oat bran is a good, but decidedly nonspecial, source of fiber. Of course, eating high-fat oat-bran muffins is counterproductive.

- **Soybeans**

Some reports have claimed that soybean products such as tofu (also called bean curd) lower cholesterol. They won't without a reduction in fat intake. Soybeans are low in saturated fat but high in polyunsaturates. A cup of cooked soybeans contains 10.3 grams of fat. Substituting soybean products for meat or chicken can lower cholesterol a little,⁷ but incorporating them into one's diet will raise it. Recently, *The New England Journal of Medicine* presented a reconsideration of data from 38 previously inconclusive studies. The researchers found that ingesting soy protein lowers cholesterol—if soy protein replaces animal protein and one's cholesterol value exceeds 258.⁸

- **Wine**

I have received large publicity packets from the wine industry citing studies of the low heart-attack rates among the wine-drinking French. They have not convinced me that wine prevents heart attacks, because American and French customs differ in many other respects. For example, the French diet has a much larger proportion of fruits and vegetables.

Researchers in Japan isolated from wine a chemical (resveratrol) that tends to lower cholesterol in rats. However, there is no evidence that it does so in humans. In any case, the chemical is also present in purple grape juice.^{9, 10, 11} Eating grapes is more advisable.

Nuts and Bolts

Below are the essentials of my high-fiber, low-fat diet.

- The goal is to ingest 15 to 20 grams of fat daily. Collectively, the dieter counts as 15 grams daily the fat in all the following "basic foods."
 - (1) Fruits (except avocado and coconut)
 - (2) Vegetables
 - (3) Beans (except soybeans)
 - (4) Whole grains
 - (5) Low-fiber, low-fat foods, the daily number of servings of which ordinarily should not exceed five:
 - (a) "Fat free" dairy products (including at least eight ounces of skim milk or sugarless nonfat yogurt daily)
 - (b) Seafood (three or four 4-oz servings per week)
 - (c) Refined grain products containing no more than one gram of fat per serving (one serving \approx 100 calories)
 - (d) Sugars and "fat free" sweets (one serving \approx 100 calories)
 - (e) "Fat free" condiments, "fat free" mayonnaise, and noncaloric beverages
- One may consume ad lib all plant foods except sugars, sweets, breads, and the following. The diet excludes:
 - (1) avocado;
 - (2) coconut;
 - (3) nuts;
 - (4) seeds (e.g., peanuts);
 - (5) soybeans and soybean products (e.g., tempeh and tofu); and
 - (6) margarine, oil, and vegetable shortening.
- One should refrain from consuming all animal foods except skim milk and sugarless nonfat yogurt.
- One should refrain from consuming high-fat foods (i.e., foods containing more than 2 grams of fat per serving), including:
 - (1) avocado and coconut;
 - (2) butter, ghee, lard, margarine, mayonnaise (except "fat free"), salad dressings (except "fat free"), shortening, and vegetable oils;
 - (3) bakery products except "fat free" breads;
 - (4) crackers and chips;
 - (5) dairy products except (a) skim milk, (b) sugarless nonfat yogurt, and (c) "fat free" cheeses;
 - (6) eggs;
 - (7) fowl and meat (except fish);

- (8) nuts and seeds;
- (9) sweets that contain fat; and
- (10) most convenience foods.

- In addition to the 15 grams of fat from "basic foods," one may ingest 5 grams of fat daily from any "basic" source.
- To prevent vitamin D deficiency, one should drink vitamin D-fortified skim milk and eat fish, or take a supplement that provides 400 I.U.s of the vitamin.

Misconceptions

Below I address some common misconceptions about food and dieting.

- *Following a low-fat diet consisting mostly of fruits, vegetables, beans, and grains will result in a protein deficiency.*

Most of the protein Americans ingest comes from high-fat foods such as beef, chicken, and whole-milk products. However, all the protein one needs is obtainable from plants. Beans are the main low-fat source of plant protein. It is advisable to consume skim milk and seafood as well. A cup each of skim milk, breakfast cereal, beans, and corn (or whole grains) daily supplies plenty of protein. Protein deficiency is rare in countries with an ample food supply. Excessive protein intake can cause osteoporosis.^{12,13}

- *To prevent malnutrition, vegans must combine foods ("complement" proteins) at each meal according to their amino-acid content.*

Nine of the 22 amino acids the human body needs are termed essential or indispensable because the body cannot synthesize them. Protein-containing foods are categorizable as complete, weakly complete, and incomplete.¹⁴ Both complete protein foods (e.g., meat) and weakly complete protein foods (e.g., soybeans) contain all the essential amino acids; in the latter foods, however, the proportion of at least one essential amino acid is too small to support protein synthesis in the body. Incomplete protein foods completely lack at least one essential amino acid. Every plant food is either weakly complete or incomplete.

But protein completeness, incompleteness, and complementariness do not have any practical significance when variety marks one's diet. The absence of any one of the essential amino acids from the human body would cause the cessation of protein synthesis. However, bodily tissues constantly disassemble proteins and release amino acids into the bloodstream, whence tissues absorb them for protein synthesis.

- **Low-fat dieting entails risking a fat deficiency.**

The human body requires but cannot synthesize at least one fatty acid, linoleic acid, which is thus termed an essential fatty acid (EFA). Deficiency thereof causes drying and flaking of the skin but is rare in adults. Moreover, fat carries the fat-soluble vitamins, A, D, E, and K. However, a daily fat intake of 20 grams meets or exceeds the body's requirement. On average, Americans consume 85 to 100 grams daily. Unless one is starving, it is well-nigh impossible to develop a fat deficiency.

- **Drinking water in large quantities with meals facilitates weight loss.**

Drinking more water with meals than one usually drinks will not result in a decrease in food intake, much less weight loss. If one drinks several glasses of water with meals, it will only distend one's stomach and make one full for a minute or two.

- **One should avoid eating shellfish, which are high in cholesterol.**

In obsolete studies, all of the sterols, including dehydrocholesterol, in shellfish had contributed to the finding that shellfish were high in cholesterol. However, dehydrocholesterol does not raise cholesterol levels. Newer studies have revealed that shellfish contain much less cholesterol than researchers had thought. In any case, shellfish are a good, low-fat source of protein.

All diet-induced changes in one's blood-cholesterol profile occur within ten days of dietary modification. Most people can achieve a satisfactory profile with stringent fat restriction alone.

NF scientific consultant Gabe Mirkin, M.D., is a sports medicine specialist, a radio host, the author of *Getting Thin*, and the coauthor of *The Sportsmedicine Book* and *Fat Free, Flavor Full: Dr. Gabe Mirkin's Guide to Losing Weight and Living Longer* (1995). He publishes *The Mirkin Report*, a monthly newsletter.

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HEALTHCARE ESOTERICA

Here's the 8th installment of descriptions of mystical and/or supernaturalistic alternativest methods. — J.R.

Arhatic yogaSM (arhatic yoga system): Syncretic form of yoga developed by "Master Pranic Healer" Choa Kok Sui. Sui is also an exponent of kriyashaktiSM (see below), pranic healing (see *Alternative Healthcare: A Comprehensive Guide*), advanced pranic healing [see NF 12:59, 1995], and pranic psychotherapy [see NF 11:49, 1994; and NF 11:60, 1994]. The purported design of arhatic yoga is to activate and align chakras, "safely awaken the 'sacred fires' of the body," and increase longevity. It posits "golden energy," kundalini, and "physical and spiritual bodies." The Center for Pranic Healing defines "arhatic" as "a highly integrated human being equipped with very developed intuition, advanced mental powers, highly refined emotions and engaged in a great contribution to the Divine Plan."¹

Celtic magic: Western European magical tradition. It is a form of ritual magic that involves numerology and "plant and herb magic"; allegedly utilizes "planetary and natural energies" (e.g., "Moon energy"); and supposedly promotes mental, physical, and spiritual health. Practitioners of Celtic magic must respect, befriend, and petition the "powers of the elementals and Elements."² (See "Norse magic" and "Wortcunning," both below.)

Christian positive thinking (CPT): Neo-Christian approach that embraces Pealeism, possibility thinking, and positive confession (see below for all).³

Christian psychology: Any form of quasi-psychology that involves biblical counseling.³

Dream counseling: Form of dreamwork that allegedly involves "dream telepathy" and interpreting "dream learnings" through "alchemy."⁴

Image magick (image magic, sympathetic magick): Ancient form of magic whose basic principle is that "like produces like." Specifically, it is a form of homeopathic magic (also called mimetic magic) that includes doll magic. Practitioners typically use "image dolls" (e.g., "voodoo dolls")—small clay, cloth, straw, waxen, or wooden representations of their targets. Apparently, image magick extends from black magic to "love magick" and white magic. For example, practitioners of white magic may use "image dolls" to effect healing or to increase fertility.^{5, 6, 7}

KriyashaktiSM: "The Art of Materialization," taught by Choa Kok Sui (see "Arhatic yoga," above). It posits chakras and "negative psychic energies."¹

Led meditation: Form of group meditation wherein someone (1) describes the process of relaxation and (2) outlines a situation that supposedly may conduce to the readiness of the meditators to meet their "inner guides," receive "higher wisdom," or find an answer to a question of immediate concern.⁸

Meta fitness: Subject of the paperback *Meta Fitness: Your Thoughts Taking Shape*. It is a combination of affirmations, "goal/task" note-writing, "self talk" (probably "intrapersonal communication"), and painless physical and mental exercises. Meta fitness allegedly unites emotional, mental, and physical "energies." According to meta-fitness theory, "storing anger from the past" can cause heaviness of the thighs.⁹

Metamorphosis: An apparent variant of reflexology [see NF 12:61-64, 1995] that involves touching "spinal reflexes" of the feet, hands, and head. The purported design of such touching is to free clients' "true nature" by releasing "patterns blocked" prenatally.¹⁰

Norse magic: Western European magical tradition. It is a form of ritual magic that supposedly enlists: (1) the Aesir ("Asa-Gods"), whose mythical home is Asgard; (2) "Light" (helpful) elves; (3) good dwarves; (4) the "rulers of the Elements"; and (5) dead ancestors. Norse magic allegedly promotes mental, physical, and spiritual health.¹¹

Pealeism (Norman Vincent Pealeism): The Christian philosophy of Rev. Dr. Norman Vincent Peale, who died in 1993. It is a descendant of New Thought. Peale authored the blockbuster *The Power of Positive Thinking* and *The Amazing Results of Positive Thinking*. The core of Pealeism is that positive thinking, avoidance of negativism, fervent praying to a personal God, and visualization of goals together make for improvements in health and finances.¹² In the booklet "How To Handle Tough Times," Peale held that "the most powerful force in this universe is a positive thought properly used," and that "Nothing Is Impossible."¹³

Personal totem pole process: Form of guided imagery (see "Alternative" *Healthcare: A Comprehensive Guide*) in which people "interact" with imagery that allegedly arises from chakras ("body energy centers").¹⁴ (See "Power animal imagery," below.)

Polarity reflexology: Part of polarity therapy (see "Alternative" *Healthcare: A Comprehensive Guide*), which draws on acupressure, ayurveda, craniosacral balancing, and yoga. Randolph Stone (1890-1981), a chiropractor, naturopath, and osteopath, developed polarity therapy, whose names include: Polarity, polarity energy balancing, polarity energy balancing system, polarity system, polarity energy healing, and polarity wellness®. Polarity reflexology posits (1) "Polarity energy currents" and (2) "reflex points" on ears, feet, and hands that practitioners purportedly use to "tonify" glands and organs.¹⁵

Positive confession (Word-Faith movement, faith movement): An alleged means of commanding blessings from God.^{3, 16}

Positive imaging: Part of Pealeism (see above) that comprises allegedly powerful methods whereby one (1) constantly and intensely visualizes one's goal and (2) prays to reinforce the visualization.¹⁷

Possibility thinking: Televangelist Robert Schuller's mode of positive thinking. It includes possibility thinking meditation (PTM) and emphasizes refraining from verbalizing negative emotions.³

Power animal imagery: "Method of exploring ways of knowing" that involves the personal totem pole process (see above) developed by E.S. Gallegos.¹⁴

Psycho-neuroaligning (PNA): System promoted by hypnotherapist and "Kinesiologist" Anthony Cimino, N.D., Ph.D. Its basic "procedures" include acupressure, "muscle testing" [see NF 12:26, 1995], "neuro-communion," "nutritional therapy," "past life investigation," and reflexology [see NF 12:61-64, 1995]. Practitioners reportedly use PNA to treat cancer, diabetes, drug abuse, dyslexia, heart disease, high blood pressure, and other health problems.¹⁸

Sacral/spinal energy balancing: Form of bodywork whose apparent main postulate is that, when the "sacrum or 'sacred bone'" and the spine ("the 'tree of life'") align, the cranium "opens like a flower."⁴

Wortcunning: The supposedly knowledgeable use, in witchcraft or Wicca (also called modern witchcraft), of alleged magical and "secret healing" properties of herbs.⁵ (The word "wort" means "plant.") According to Wiccan theory, the phase and zodiacal position of the moon are extremely important considerations in the planting of herbs.¹⁹

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(continued from page 65)

about 37 percent of their total caloric intake from fat. To normalize cholesterol levels, the American Heart Association (AHA) advises deriving: (1) 30 percent of total caloric intake from fat, (2) 25 percent if the 30% restriction is ineffective, and (3) 20 percent if the 25% restriction is ineffective. Research by Dean Ornish, M.D., suggests that limiting fat intake to 10 percent of calories is more effective and may remedy atherosclerotic narrowing of coronary arteries.

Gabe Mirkin, M.D., is another vigorous proponent of 10% fat dieting. When he was a skinny, 22-year-old med-school student, he learned that his cholesterol level was over 300. In *Fat Free, Flavor Full* (1995), he states:

You should definitely be on a low-fat diet if you have high blood pressure or are overweight; if you have diabetes, chronic constipation or gall bladder disease; or if you are at increased risk for developing a heart attack, diabetes, or cancers of the prostate, breast, uterus, colon or gall bladder. You may choose to be on this diet if you want to do all you can to prevent heart attacks and certain types of cancer, or just to look and feel good....

If you want to lose weight or lower cholesterol without taking drugs, don't depend on diets that tell you to reduce fat a little [e.g., the AHA diets].... You must get down to 10 percent

of your calories from fat, or 20 grams of fat per day, to lower cholesterol significantly.

Many physicians still recommend the AHA...diets because they believe that people won't put up with severe fat restriction. They are wrong. You can stick to a low-fat diet easily if you know how to make the food taste good.

Since August 13, 1995, I have been trying to limit my fat intake to 20 grams a day and watching my weight. On most days, my fat intake, which I estimate from labels, has been below the 20-gram limit (exclusive of "dark" coffee, prepackaged "fat free" snacks and bakery products, and low-fat, nongrain produce). However, about a week after I had adopted the restriction, I ate a salad with a "lite" dressing to the tune of 38½ grams of fat. The dressing contained 7 grams of fat per 2-tablespoon serving—not my idea of "lite."

In the context of an otherwise unrestricted diet, a 20-gram fat restriction does not, in my experience, substantially impair palatability. Despite my general adherence to this restriction, my diet has included Cajun-style chicken, cheese ravioli, pizza with pepperoni and sausage, shrimp marinara with linguini (buried in a nonfat grated topping), Swedish meatballs with pasta, corn with margarine sauce, low-fat "cherry bars," and "fat free" cheesecake, cupcakes, frozen yogurt, ice cream, and soft pretzels. There's the rub with Dr. Mirkin's diet: all of these foods are no-noes except the topping and the corn (sans sauce).—J.R.

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Healthcare Pseudocredentialing

Jack Raso

What becomes a quack most? In the healthcare field, a quack is anyone who falsely claims medical skill. Some opponents of health fraud use the word to denote practitioners ranging from nonprofessionals bereft of medical skill who profess it, to physicians who make unfounded claims for methods they employ or preparations they administer. Nowadays, few quacks in the U.S. pretend to be M.D.s or osteopaths. Providing fraudulent medical degrees is a high-risk business, and medical licensing procedures are stringent. However, practicing and would-be quacks can become "doctors," or at least diplomates, through a variety of correspondence courses.

In this article, I convey the nature of credentials, define credentialism, describe pseudocredentialing and pseudocredentialism, summarize several relevant studies, report on a correspondence course I took recently, and list some suspicious characteristics of providers of alternative health education.

Credentials and "Credentials"

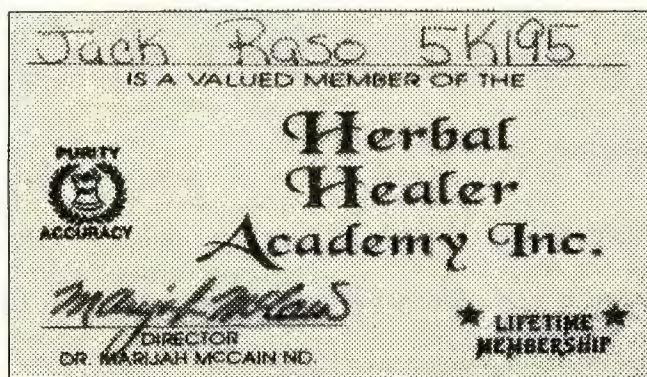
The healthcare marketplace is fraught with "credentials," some legitimate, some overrated, some dubious, and some far afield of science. A bona fide credential is any evidence that one is trustworthy or has authority. However, since authority does not guarantee trustworthiness, whether a credential deserves confidence depends ultimately on whether the tenets that underlie the credential are worthy of confidence. "Authority-type" healthcare credentials range from the science-based (e.g., podiatric [chiropracist, or "foot doctor"]

licensure) to the controversial (e.g., naturopathic licensure).

Credentials encompass (1) achievements and (2) documents that attest achievements. Many consumers mistake documentary credentials for proof of skill. Often, they are merely proof of past enrollment in an academic program, not proof of erudition or skill. Educational credentials are the professional standard because academic standing is more quantifiable than knowledge or skill.

The most commanding educational credential, and therefore the most tempting to would-be misusers, is the doctorate. There are many types of doctorates, but all are categorizable as "traditional" (e.g., a nonhonorary Ph.D. degree), "professional" (e.g., an M.D. degree), and honorary (e.g., a D.Sc. degree without academic status). Some types of doctorates in each category are considerably more doubt-

ful than others. For example, *Bears' Guide to Earning College Degrees Nontraditionally* (1995) lists as controversial "professional degree titles": D.Hyp. (hypnotism), Graph.D. ("Graphoanalysis"), and H.M.D. or "M.D.(H.)" (homeopathy). Many such degrees are available throughout the United States.



Another Brick in the Wall

In 1994, I met a lawyer who told me he had been seeing a "doctor" for nutrition counseling. Because very few science-oriented physicians specialize in this, I asked the practitioner's name. The name was not that of a physician, nor even that of a legitimate

Ph.D. or the like: The practitioner the lawyer had consulted was a "Doctor of Nutripathy" (D.N.). Nutripathy [see NF 4:57-61, 1987] is a theistic, vitalistic "religious science" that involves a variation of Bach flower therapy [see NF 12:26, 1995] and "biochemical analysis" of saliva and urine. I asked the lawyer if he would provide me with whatever printed material the "nutripath" had given him, and he sounded agreeable; but, later that year, he declined. The D.N.'s classified ad in the January/February 1995 issue of *Newlife* did not include the word "nutripath" or "nutripathy" but designated him a *naturopath* ("one who uses only safe, natural approaches"). On July 6, 1995, I phoned his office as an ad respondent and asked the man who had answered the phone what was the source of the D.N.'s (alleged) naturopathy degree. The staffer replied:

Uh, I'm not exactly sure of that. I can tell you that he's a clinical nutritionist, okay? Which means that he—we look for causes of symptoms and then deal with it in a natural fashion. Where he— Where he practiced or where he went to school, I'm not exactly sure.

After I expressed skepticism, the staffer asked me to wait a second and said he would "check the wall." Finally, he responded: "The American College of Nutripathy" (ACN) [see NF 12:15, 1995]. Founded in 1976, ACN, a nonaccredited* correspondence school in Scottsdale, Arizona, is *not* a school of naturopathy; it has never offered degrees therein. However, according to the last three editions of *Bears' Guide to Earning College Degrees Nontraditionally* (1989-1990, 1992, and 1995), ACN *does* offer doctorates in *nutripathy*. Yet, in a questionnaire he completed for me in July 1994, *nutripathy's* founder, Gary A. Martin, indicated that ACN offered only nondegree certificates. A year later, on July 6, I called ACN for clarification. I asked to speak with Martin, but the woman who had answered the phone told me that Martin did not take "incoming calls." In any event, since 1989, the American College of Nutripathy has offered more than a dozen kinds of quasi doctorates *indirectly*—through at least three nonaccredited organizations, one of which shares a toll-free number with both the school and a mail-order house that specializes in dietary supplements.

Apparently, the aforementioned lawyer lost only money. But there is much more at stake. In the late 1970s, Kurt W. Donsbach (pronounced "donsbah"), D.C., founded Donsbach University, which offered correspondence courses leading to bachelor's, master's, and doctoral degrees in nutrition. Electrical engineer Gary Pace obtained a Ph.D. degree from this nonaccredited school before it was renamed, in the late 1980s, the International University for Nutrition Education (IUNE). In 1985, Pace's ad in the Nassau County (New York) Yellow Pages stated that one could determine one's "true vitamins, minerals, enzymes & glandular needs" from such tests as "hair & diet analysis," "herbal saliva," and "computerized urine

& vascular analyzer." That year, then New York State Attorney General Robert Abrams filed a civil suit against Pace, accusing him of practicing medicine without a license, false advertising, and illegal use of educational credentials. Abrams said that at least 251 clients had paid Pace an average of \$317 in the previous four years. According to the lawsuit, Pace had massaged women's feet, had sometimes performed lengthy and/or private mammary and vaginal exams, and had routinely requested a hair specimen (sometimes pubic). Finally, an injunction prohibited Pace from practicing medicine unlawfully and from publicizing his doctoral status.

IUNE operates as a nonaccredited "distance learning" institution in Chula Vista, California. It offers, for example, programs that lead to a Ph.D. degree in "Clinical Nutrimericine and Biological Sciences." Majors include "nutri-medical dentistry," "nutri-medical eye and visual health care," "nutri-medical homeopathy," and "therapeutic nutrimericine." Five of the thirteen members of IUNE's core faculty hold graduate degrees from Donsbach University and/or IUNE.

Pseudocredentials Galore

Published studies conducted since the mid-1980s, an annual (the 1995-1996 *Holistic Health Directory*), and several books—notably the 336-page twelfth edition of *Bears' Guide* (see above) and the 200-page second edition of *The Common Boundary Graduate Education Guide: Holistic Programs and Resources Integrating Spirituality and Psychology* (1994)—suggest that healthcare-related pseudocredentialing is rampant. Pseudocredentialing includes: (1) providing certificates, degrees, diplomas, and titles in a particular field to persons who have not demonstrated competence, erudition, or expertise in that field; and (2) providing a paper facade of medical know-how to persons whose course of study in the field of the "credential" had inadequate scientific content.

Pseudocredentialism is a byproduct of credentialism, which is overemphasis on documentary (particularly educational) credentials as prerequisites to employment or as augmenters of upward mobility. In the healthcare field, where competence often is a life-or-death concern, emphasis on certificates, degrees, and licenses, which facilitate ruling out unqualified job applicants, usually does not seem undue. In some cases, however, it does

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seem distorted. For example, between mid-1987 and 1993, I worked in two healthcare facilities where non-R.D. foodservice managers without graduate degrees had authority over chief dietitians who were R.D.s with healthcare-related master's degrees.

While credentialism shortchanges some contributors to society and inappropriately aggrandizes others, pseudocredentialism tends to cheat all consumers. It encompasses: (1) the "for-profit" use of "credentials" obtained from pseudocredentialing organizations and (2) the misuse of bona fide credentials (e.g., registration with the Commission on Dietetic Registration) in an area where these credentials have little or no importance (e.g., medical diagnosis).

"Credentials" listed uncritically as "professional titles" in *The Common Boundary Graduate Education Guide* include: Acupuncture Physician (Ac. Phys.), Certified Acupuncturist (C.Ac.), Certified in Classical Homeopathy (C.C.H.), Diplomate in Homeotherapeutics [i.e., homeopathy] (D.Ht.), Doctor of Acupuncture (D.Ac.), Doctor of Oriental Medicine (D.O.M.), Homeopathic Medical Doctor (H.M.D.), Licensed Acupuncturist (L.Ac.), Master of Acupuncture and Oriental Medicine (M.Ac.O.M.), Naturopathic Medical Doctor (N.D. or N.M.D), Oriental Medical Doctor (O.M.D.), and Registered Acupuncturist (R.Ac.). Because the predominant forms of most or all of the methods that underlie each of these "titles" lack scientific substantiation, I consider them pseudocredentials — signs of shaky philosophies that inspire little or no confidence in the scientific community.

Below I describe several relevant studies.

- In early 1986, the National Council Against Health Fraud (NCAHF) published the findings of its study of practitioner listings in the Yellow Pages under the headings "Dietitians" and "Nutritionists" within the preceding four years. The principal finding of this study, which covered 41 areas of 17 states, was that only 13 percent of 439 "nutritionists" appeared qualified. Furthermore, 46 percent of 24 physicians listed in a subsection titled "Nutrition" (under the heading "Physicians and Surgeons") were "clearly spurious," and none appeared qualified. Their offerings included acupuncture, chelation therapy, life extension, orthomolecular medicine, and orthomolecular psychology.
- In a comprehensive 1992–1993 Yellow Pages study sponsored by the NCAHF, Ira Milner, R.D., collected data from 64 areas of 32 states. The principal finding was that

consumers had less than a fifty-fifty chance of finding a reliable "nutritionist" through the directory. Task-force volunteers consisted of registered dietitians (R.D.s), public health nutritionists, dietetic interns, and postsecondary nutrition students. They categorized 21 (9 percent) of the 231 businesses listed under the heading "Dietitians" as "spurious." These included Diet Center facilities, health food stores, multilevel-marketing distributors, a nutritionist with a dubious doctorate who practiced iridology [see NF 6:4–5, 1989], and a former vitamin company salesman who used hair analysis [see NF 11:23–24, 1994].

The "credential" initials used by dubious nutrition practitioners included: CCN (Certified Clinical Nutritionist), CN (Certified Nutritionist), CNC (Certified Nutrition Consultant), NC (Nutrition Counselor), NMD (Doctor of "Nutrimedicine"), ND (Doctor of Naturopathy), OMD (Doctor of Oriental Medicine), HMD (Homeopathic Medical Doctor), CCT (Certified Colon Therapist), RCT (Registered Colon Therapist), CMT (Certified Massage Therapist), and MLD (Manual Lymph Drainage).

In September 1992, I telephoned all businesses listed under the headings "Dietitians" and "Nutritionists" in the 1992–93 NYNEX Yellow Pages for Queens, a borough of New York City. Only one of the 26 businesses listed seemed a reliable source of nutrition information; at least seven were health food stores or dietary-supplement distributors. A self-styled "certified eating-disorder specialist" told me he prescribed supplements. When I complained of tiredness, he declared that tiredness is "the first sign of illness." A practitioner of "holistic nutrition" also said he prescribed supplements and stated he had an N.D. degree "from Puerto Rico." (There were, and are, no accredited naturopathy degree programs in P.R. And any naturopathy degree is a telltale of pseudoscience.) I asked where I could buy the supplements, and he said he had a "warehouse" in his office.

- In early 1994, the publishers of NUTRITION FORUM sponsored a follow-up to the 1992–1993 Yellow Pages study. In the follow-up, Milner decided that 17 of the 24 self-described Ph.D.s listed under the heading "Nutritionists" held "phony" Ph.D. degrees. Apparently, eight of the dubious doctorates came from nonaccredited correspondence schools (five from Donsbach University or the International University for Nutrition Education); one came from a nonaccredited college that required attendance; and one came from the "Clayton School of Homeopathy."

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- In a spinoff of the 1992–1993 Yellow Pages study, I examined promotional mailings from diverse providers of alternative health education, which encompasses: (1) indoctrination in alternative healthcare (or occult medicine), in particular methods thereof, or in sectarian religious “healing”; (2) nontraditional academic programs that afford such indoctrination; and (3) nontraditional academic programs in science-oriented healthcare. Between mid-July 1994 and February 27, 1995, using NUTRITION FORUM letterheads, I mailed a one-page itemized request for perusable information and a one-page questionnaire to 50 “credentialing” organizations with addresses in 23 states. Selection of organizations was arbitrary. However, all had offered health-centered or customizable academic programs within the previous seven years. By February 26, my associates and I received course descriptions from 27 organizations, including questionnaire responses from eleven. Each of these organizations offered at least one academic program that: (1) covered human health and nutrition, or was adaptable to such a focus; (2) did not involve attendance, or required short attendance; and (3) culminated in a certificate (certification), a nondegree diploma, or a graduate degree.

The following findings pertain to the 27 organizations from which we received course descriptions during the aforementioned period.

- At least 21 (78 percent) offered correspondence programs. Degrees available through nutrition-related correspondence programs included: Doctor of Divinity (D.D.), Doctor of Holistic Health (H.H.D.), Doctor of Naturology (D.N.), Doctor of Naturopathy (N.D.), Doctor of Philosophy (Ph.D.), and Doctor of Science (D.Sc.). (“D.N.” also represents two other nutrition-related pseudocredentials: the degrees of “Doctor of Naprapathy” [see NF 11: 63–64, 1994] and “Doctor of Nutripathy” [see above].) A “Master Herbalist” (M.H.) diploma was likewise available through correspondence. Obtaining a “Health Educator” (H.E.) certificate required attendance at an institute for eight consecutive weeks. The H.E. certificate, the M.H. diploma, and all the aforementioned correspondence doctorates were not trustworthy.
- Twenty of the organizations (74 percent) lacked (and still lack) accreditation by an entity recognized by the U.S. Secretary of Education or the Commission on Recognition of Postsecondary Accreditation (CORPA).
- Six of the organizations (22 percent) claimed accreditation by entities not recognized by the U.S. Secretary of Education or CORPA.

Below I contrast two providers of alternative health education.

The Herbal Healer Academy

Founded in 1988, the Herbal Healer Academy Inc. (H.H.A.) is nonaccredited. It has a letterbox in Mountain View, Arizona. I learned of the academy from a composite alternativist mailing (Health Pak™) I received in October 1995. H.H.A.’s Health Pak card quoted its founder and director, Marijah McCain, N.D., M.H. (“Master Herbalist”), “DIHom” (evidently a homeopathic “credential”): “OUR MEMBERS SAVE THOUSANDS IN DOCTOR BILLS! SOME MEMBERS SAVE THEIR LIVES!!!” H.H.A.’s “Special” offer was “Private” lifetime membership for \$5. The mailing I received the following month for five bucks included a laminated membership card, a copy of H.H.A.’s Fall ’95 newsletter (whose “front-page headline” was “...AND GOD GAVE THE HERBS FOR THE HEALING OF MANKIND”); an interview with a nonpracticing chiropractor, titled “Essiac: Nature’s Cure for Cancer” [see NF 11:54–55, 1994; and NF 12:54, 1995]; a catalog of such supplements as Pycnogenol® [see NF 11:54, 1994], shark cartilage [see NF 12:58–59, 1995], and *Super Energy* (which reportedly contains ma huang [see NF 12:33–34, 1995]); a “Natural Medicine Supply Catalog”; and order forms. The latter catalog offered correspondence courses leading to certificates in acupuncture, Bach flower therapy, footreflexology [see NF 12:61–64, 1995], “herbology,” and hypnotherapy. The acupuncture course covered “electrical acupuncture,” “electrical acupressure,” “five element theory,” “meridians,” “Oriental diagnosis,” and “Yin/Yang science”; the “herbology” course, reflexology; and the hypnotherapy course, neuro-linguistic programming (NLP [see NF 12:8, 1995]). The “Natural Medicine Supply Catalog” also stated that McCain had diplomas in aromatherapy [see NF 12:31, 1995], homeopathy [see NF 11:58–59, 1994], and Touch for Health (an offshoot of applied kinesiology [see NF 12:26, 1995]), and that she had trained with “an outstanding Brazilian psychic surgeon.” There were no prerequisites for admission to any of the courses. At least two of them did not have a time limit for completion.

The main question here is not whether H.H.A.’s manner of “credentialing” by correspondence is technically sound, nor whether its certificates represent proficiency. The nuts and bolts of an academic program are immaterial if its teachings are unfounded. The main question is: Do the certificates represent science-oriented learning, or indoctrination in unscientific methods? In other words, are they credentials or pseudocredentials? Are students learning facts about methods, absorbing propaganda, or simply learning little? To all appearances, H.H.A. wants to attract would-be practitioners of the methods that are the courses’ subjects. Certainly Bach flower therapy, foot reflexology, and traditional Chinese acupuncture lack scientific support (“Yin/Yang science” is an oxymoron). Thus I conclude that the academy is in the business of indoctrination, not education (which, ideally, is nonpartisan).

California College for Health Sciences

The main question regarding California College for Health Sciences (CCHS), in National City, California, is different: It is whether the school's manner of credentialing by correspondence is sound. In other words, do its degrees represent proficiency?

CCHS is accredited by the Accrediting Commission of the Distance Education and Training Council, which is recognized by CORPA and the U.S. Secretary of Education. Last summer I applied to the school's M.S. correspondence program in Community Health Administration and Wellness Promotion. (It also offers health-related correspondence programs leading to a B.S. degree or an Associate.) The application procedure was a breeze. There were only two entrance requirements: (1) a baccalaureate from an accredited school and (2) completion of an introductory psychology course. Graduation requires completion of 36 semester credits, 27 of which the enrollee must complete at CCHS. The school admitted me to the program within a month of my applying.

In October, I enrolled in the first course in the core curriculum: "Ethical Considerations in Healthcare Delivery." Designed for the course and published by CCHS, the colloquial, 380-page textbook *What Is a Life Worth?* (1993) is interesting despite grammatical imperfections, stylistic flaws, and typographical errors. But it's not especially user-friendly. Earning the self-contained course's three credits requires only that the student pass: (1) five "open-book" exams, which consist of multiple-choice and "true-false" items; and (2) a "closed-book" final exam, consisting of 100 items (most multiple-choice, some "true-false"), that must be supervised by a "responsible individual" who does not have a personal or professional "direct involvement" with the examinee. This is, in effect, an honor system. Students may take the final exam three times during the enrollment period (two months per semester credit).

In November, I phoned the college and inquired whether my primary candidate for proctorship was eligible. I described her as a medical librarian who (1) worked at my former place of employment and (2) was a member of the editorial board of the newsletter I coedit. An official at CCHS told me that the librarian could be my proctor.

The five "open-book" exams are half the basis of the final grade. To pass them, one need only search the textbook sections titled "Study Questions and Answers."

"Believing Is Magic"

Later in November, I enrolled in another course, titled "Health Psychology." Unlike the ethics course, this psych course has a final project requirement, which involves interviewing five patients in a clinic or hospital regarding their pain. Supervision is not mandatory. The

project is half the basis of the final grade. The course materials, which I received in December, included a 114-page booklet titled *Developing Self-Esteem: A Guide for Positive Success* (1994). My first assignment, in effect, was to "attempt" to do all the exercises in the booklet and mail the "completed" booklet to the school. The exercises, which are self-inventories, have no bearing on the final grade. On page 44, the author declares: "Believing is magic."

Because it has an easygoing exam system, requires only one internship (a 3-credit course), and does not have a thesis requirement, CCHS's M.S. degree may be more acceptable as an adjunctive credential than as a "stand-alone" master's degree. Nevertheless, I like the school's organized, uncomplicated, low-cost, continuing-education approach. For credentialed health professionals employed in a healthcare facility, the M.S. program may be worth a try.

Suspicious Characteristics

Most providers of dubious credentials make good first impressions, and many have a streamlined (and therefore inviting) application procedure and minimal entrance requirements. These are not signs of pseudocredentialing but may put consumers off guard. To evaluate a "credentialing" organization, consumers often must penetrate a veneer of friendliness and/or respectability. Below is a list of characteristics that are, in my opinion, grounds for caution.

- *The organization does not possess accreditation by an entity recognized by the U.S. Secretary of Education or CORPA. Although the institution of academic accreditation does not protect consumers against health-related rubbish and disinformation [see NF 12: 14, 1995], accreditation by an entity recognized by either of the aforementioned agencies at least weeds out fly-by-night and financially shaky organizations.*
- *The organization claims accreditation, but neither the U.S. Secretary of Education nor CORPA recognizes the accrediting entity.*
- *Potential enrollees must pay to receive a course catalog.*
- *Consumer telephone requests for printed information elicit requests for prerequisite autobiographical letters.*
- *Literature from the organization does not specify the location of its headquarters.*
- *The organization has changed its address more than twice within ten years.*
- *Letters, postcards, or phone calls from the organization foretell a fee increase. During my 1994-1995 study, one program director, a naturopath who evidently thought I was a potential enrollee, spoke of such a deadline in three messages on my answering machine.*

- *The organization makes offers of substantial tuition discounts with short time limits.* An introductory mailing from the University of Metaphysics [see NF 12:60,1995] postmarked July 12, 1995, included a "Half-Price Tuition offer" expiration-dated July 31, 1995. In a follow-up mailing, postmarked July 20, 1995, the university added to this offer a free meditation course and a "Beautiful Doctoral Graduate Lapel Pin To Wear Proudly." (See below.)
- *The organization mails unsolicited partial-scholarship applications to potential enrollees who have not requested a scholarship application.* A mailing from the University of Metaphysics (see above) postmarked September 8, 1995, included an unsolicited scholarship application whose deadline was September 30, 1995. Persons who were unemployed, disabled, or retired, or who had a financial reason for not enrolling, qualified—with prepayment by September 30, 1995—for a tuition discount of approximately 90 percent. A "LAST MINUTE SCHOLARSHIP REMINDER" followed.
- *The organization offers a degree with a nonstandard wording.* Examples are "Doctor of Holistic Health" (H.H.D.) and "Doctor of Naturology" (D.N.).
- *The person who answers the phone for the organization does not immediately state its name.*
- *Prerequisites for admission are trivial, very flexible, or nonexistent.*

The Bottom Line

Few providers of alternative health education deserve the personal consideration of health professionals who desire *additional* credentials; i.e., few deserve candidacy as sources of credentials for credentialed people. Even fewer deserve the personal consideration of *would-be* health professionals.

I think credentialing by correspondence is a viable, even promising, movement. Alas, it is a movement dominated by fast-buck artists, charlatans, and propagators of mysticism, pseudoscience, and supernaturalism.

*By "nonaccredited," I mean: "without institutional, departmental, or programmatic accreditation whose source is recognized by the U.S. Secretary of Education or the Commission on Recognition of Postsecondary Accreditation (CORPA)." The U.S. Secretary of Education and CORPA autonomously decide whether (1) to grant recognition to any functioning or would-be "accreditor" that expressly wants it, or (2) to withhold or withdraw it from such an entity. In practical terms, recognition constitutes publicizing acceptance of such an entity as an accreditor.

Healthcare Esoterica

Between *Alternative Healthcare: A Comprehensive Guide* (1994) and issues of NUTRITION FORUM published since September 1994, I have described well over 750 health-related methods that I consider mystical or supernaturalistic. All the members of this vast smorgasbord share two characteristics: (1) each has a mystical or supernaturalistic application, theory, significance, or pedigree; and (2) each has a name that proponents or uncritical writers have used to denote a method, a group of methods, a system, or a general "approach."

Aboukra: Purported ancient Egyptian "healing art" that allegedly strengthens and balances the body's "natural energy fields" and "meridians."¹

Angel Chiropractic Care: "A wholistic approach to healing and wellness" promoted by Dr. Steven B. Angel. It encompasses applied kinesiology [see NF 12:26, 1995], Bach flower therapy [see NF 12:26, 1995], biomagnetic therapy [see NF 12:27, 1995], chiropractic techniques, craniosacral therapy,* nutritional counseling, reflexology [see NF 12:61-64, 1995], and vibrational medicine [see NF 12:31, 1995].²

Aston Movement: Mode of bodywork expounded and promoted by Judith Aston, the founder of Aston-

That is, each name denotes a procedure or a group of procedures, not merely a concept (e.g., "pyramid energy" or "pyramid power"), a brand or proprietary product, a type of object or product (e.g., Chinese health balls and "crystal cards"), or a company (e.g., Imaginetics). My list does not include countless dubious "health" practices that are nameless or naturalistic, as well as inconveniently identifiable methods.

Below are descriptions of more than sixty mystical/supernaturalistic methods.—J.R.

Patterning@.* One of its premises is that bodily "patterns"—ways of moving, areas of ease, and areas of discomfort—reveal everyone's history of attitude, injury, and physical activity.³

Astrology: Alleged means of obtaining information that can provide "individualized insights" regarding emotional, professional, and health matters.⁴ (Related methods include astrological counseling [see NF 12:26, 1995], astrologic medicine,* and psychological astrology.*)

Bhuta shuddhi: Technique of kundalini yoga (see below) whose purported design is to purify the "physical and subtle body."⁵

Bi-Digital O-Ring Test Molecular Identification Method (Bi-Digital O-Ring Test, O-Ring technique): Means of determining internal-organ "representation areas" on the human tongue. Theoretically, this enhances tongue acupuncture and the "tongue diagnosis" of traditional Chinese medicine.*⁶ Yoshiaki Omura, M.D., Sc.D., developed the method in New York City.⁷ It includes the Direct Bi-Digital O-Ring Test Method and the Indirect "Bi-Digital O-Ring Test" (see below for both). Omura has promoted the method worldwide, and there are "O-ring societies" in Europe and Japan.⁷

Bio-Magnetic Healing™ (Bio-Magnetic Healing Methodology™, Bio-Magnetic Methodology™, Bio-Magnetic Touch™): Manual "technique" that allegedly helps to heal "recipients" and increases their quality of life. Practitioners, who supposedly are tools of a "greater Force," lightly touch specific points on recipients, purportedly to allow this "Force" to "reawaken" the healing process.⁸

Body Centered Therapy: Method whose components apparently include: (1) "Conscious Communication Skills," which involve learning the "language of Microscopic Truth"; (2) "Movement Therapy"; (3) "Pre- and Perinatal Psychology," which posits "cellular imprints" created at conception and between conception and birth; and (4) radiance breathwork.*⁹

Bön shamanic practices: A number of traditional methods—rituals and modes of visualization—purportedly used to generate "vital forces" and "heal" internal and external obstacles to growth. The Tibetan word "bön" literally means "invocation, recitation." "Bön" or "Pön" refers to various religious customs in Tibet that preceded the introduction of Buddhism. Bön involved worship of spirits and protectional deities (e.g., the Lord of the Soil). It reportedly survives in modified form in Nepal.¹⁰⁻¹³

Breema Bodywork: Purportedly, an ancient health-improvement method whose design is: (1) to "release" tension; (2) to promote health, vitality, and "inner harmony"; and (3) to create emotional, physiological, structural, and "energetic" balance in the practitioner and "recipient."¹⁴

Direct Bi-Digital O-Ring Test Method: Form of the Bi-Digital O-Ring Test Molecular Identification Method (see above). The subject holds in one hand: (1) a slide with a specimen of an internal organ or tumor, and (2) a rod (e.g., of bamboo). Supposedly, when the subject places the tip of the rod on (1) the skin above "identical" tissue or (2) the tissue's "organ representation area" on the tongue, the subject's other hand (apparently, the muscle tone of the forefinger and thumb) reveals the match.⁶

Emotional Energetic Healing (E.E.H., E.E.H. Healing methodology): "Holistic healing" method founded by Mari Angelique Raphael that includes "hands-on energy work" and "spiritual counseling." Supposedly, it utilizes "the divine healing energy of the Angelic Realm," activates the client's "Lightbody," and "clears" past, present, and future "lifetimes."¹⁵

Energy Integration: Group of "techniques" that posit a "human energy field," "meridians," and a system of chakras. One of its premises is that one's body is the icon of one's character.¹⁶

EnLighten™ Systems of stress management (EnLighten Systems, EnLighten™): Variation of Bach flower therapy [see NF 12:26, 1995]. Purportedly, EnLighten is a "natural" homeopathic system of liquid Traditional Flower Remedies® that bypasses physical causes and targets emotions affected by "stressful situations." It comprises: (1) the EnLighten Habit Modification System(s); (2) the EnLighten System for Animals (also called the EnLighten for Animals™ healing system and the EnLighten for Animals™ system), which supposedly improves the disposition of pets; (3) the EnLighten System for Children with Learning Difficulties; (4) the EnLighten System for Teenagers, purported help for overcoming turmoil and peer pressure; and (5) the EnLighten Weight Management System, which allegedly moderates emotions that lead to overeating.¹⁷

Er Mei Qi Gong (Er Mei, Er Mei Qi Gong Therapy, Er Mei Chi Gong Therapy, Er Mei Qi Gong Therapy External Energy Diagnosis and Treatment system, Er Mei system): Form of Qigong therapy* founded in 1227 by a Buddhist who had been a Taoist priest. Its purported focus is development of the (alleged) ability to transmit Qi ("vital energy," a "unique substance") to others with the intention of furthering their healing and/or "spiritual empowerment." In practitioners, it supposedly develops clairvoyance and precognitive and telepathic abilities. Er Mei posits "spiritual channels" and a "third eye." It includes "acu-meridian energy transmission bodywork." ("Er Mei" is also the name of a mountain visited by the system's founder.)^{18, 19} (See "Quan Chi Chi Gong," below.)

Essene way of self-healing: Purported means of tapping alleged psychic and healing powers of the universe. It reportedly involves affirmations, "color therapies," exercise, songs, visualizations, and communion with the angels of the "Earthly Mother" and "Heavenly Spirit."²⁰ (The Essenes, also called Physicians, were a Jewish sect that preceded Christianity. Their specialty was faith healing.²¹)

Healing Heart Meditation: Alleged "Healing tool" that purportedly "re-connects" people with their "spiritual roots." It includes "guided meditation." Apparently, one of its postulates is that people are unconditional love.²²

Holistic psychiatry: Form of "psychiatry" that may include "energy healing" and homeopathy.²³

Indirect "Bi-Digital O-Ring Test": Form of the Bi-Digital O-Ring Test Molecular Identification Method (see above) that involves three individuals: (1) an examiner, the practitioner who examines the empty hand of (2) an "intermediary," a surrogate who has placed the tip of a metal rod on (3) a patient (adult, child, or animal). Either the "intermediary" or the patient holds a slide with a tissue specimen. Allegedly, the metal rod transmits the patient's "electro-magnetic field" to the "intermediary."⁶

Inner bonding: Stepwise "psychospiritual process" that allegedly creates "a powerful spiritually connected Inner Adult" capable of healing addictive behavior and bringing "Love" and "Truth" from a "Higher Power."²⁴

Integrative Manual Therapy: Combination of allegedly efficient "therapies" that draws on cranio-sacral therapy* and other "modalities." Sharon Weiselfish, Ph.D., developed the method.²⁵

Intuitive Aura Reading: Component of Psychic Magic (see below) that allegedly enables users to read "subtle energy fields" surrounding people and places, and to intuit the "real" emotional, mental, physical, and spiritual states of anyone they meet.²⁶

Karga puja (karga healing ritual): One of the shamanic "healing" ceremonies of the Tamangs, a group of Tibetan Buddhists in Nepal. "Karga" is the Tamang word for a constellation of planets, and "puja" is a Nepalese word for "ritual." Karga puja is a purported remedy for simultaneous "soul loss" and "spirit possession," the Tamangs' major categories of mental illness. The ritual posits evil spirits, "healing spirits," and "planet divinities."²⁷

Kinetic Trance-Meditation (KTM): Technique that supposedly allows one to tap into the unconscious to access information and "energy" (e.g., for "self-healing*"). Teodoro (Teo) Cordova, a hypnotherapist, developed the method.²⁸

Kundalini yoga (Shakti Yoga, tantra yoga): Purported means of activating kundalini (also called *ahamkara* and *kundalini shakti*). This, allegedly, is a "dormant infinite force," "potential cosmic power," or "spiritual power" that, in most people, is asleep, without self-awareness, in a chakra at the coccyx. Supposedly, when kundalini is awake, it enriches

people's lives "spiritually, intellectually, emotionally, and physically." Moreover, its arousal purportedly contributes to the cure of many intractable diseases. Kundalini yoga includes *bhuta shuddhi* (see above).^{12, 29-34}

Lok Hop Ba Fa: Set of movements purportedly usable for self-defense and for massaging organs with *chi*. Chen Bok, a Taoist priest, invented the system in China over a thousand years ago.³⁵

Lomi work (Lomi approach): System of bodywork cofounded by "Aikidoist" Richard Strozzi Heckler, Ph.D. It purportedly is a "unique blend of contemplative disciplines and the embodiment of right action." Lomi work involves meditation and, supposedly, the use of "energy" in the context of healing.³⁶

Lung Ta: Purportedly ancient shamanic tradition of the Nam Chuks, a Tibetan tribe. It apparently involves using the "basic archetypes" of "healing deities" to augment the process of healing.³⁷

Multidimensional Cellular Healing™: Apparently, a group of "down to earth" techniques that enables "conscious connection to other realities" and involves "Achieving a State of Holographic Beingness." Author and "transformational healer" Ken Page created the method.³⁸

Nichiren Buddhism (Nichiren Shoshu, NS, Nichiren Shoshu Buddhism, Nichirenism, Nichiren): Mystical Japanese religion named after Nichiren Daishonin (1222-1282), founder of *nichiren-shu* ("School of the Lotus of the Sun"). Daishonin was a militant Japanese patriot and, supposedly, an incarnation of an early disciple of the Buddha. Chanting the Japanese expression "*Namu myoho renge-kyo*" (which literally means "Veneration to the sutra [scriptural discourse] of the lotus of the good law [i.e., the *Lotus Sutra*]) is the core of NS worship. NS chanting allegedly is a means of gaining anything one wants, notably health, influence, and material assets.³⁹⁻⁴³

Pleiadian lightwork: Subject of *The Pleiadian Workbook: Awakening Your Divine Ka*. This, allegedly, is not merely a paperback, but a transmission of the "Pleiadian Emissaries of Light" (by inference, "light beings" from the Pleiades, a cluster of stars in Taurus)—through "natural healer" and "psychic" Amorah Quan Yin—to earth. Pleiadian lightwork purportedly is a means of opening "ka channels," which supposedly pull "energy" from an individual's "multidimensional holographic selves" into the "physical body." According to Pleiadian theory, alignment of one's "divine self" and "physical body" increases one's "vibratory rate," restores youthfulness, quickens "spiritual evolution," and stimulates emotional healing.⁴⁴

Psychic Magic: Program of ten audiocassettes that allegedly fosters clairvoyance, precognitive and telepathic abilities, and the capacity for out-of-body experiences. It also purportedly increases one's "natural" ability to heal oneself, others, pets, and plants. It includes Intuitive Aura Reading (see above).²⁶

Quan Chi Chi Gong: Form of Qigong therapy (external Qi healing). Quan Chi Chi Gong purportedly involves a variant of psychokinesis or telekinesis. Supposedly, practitioners transfer *chi* (Qi, "energy") stored in their "energy body" into the patient. The method allegedly is instrumental in accelerating healing, effectively treating drug addiction, and causing weight reduction.⁴⁵ (There are more than a dozen terms for Qigong therapy.)

Quantum ReleaseWork™: "Process" that supposedly uses the "Higher Self" to perform "vibrational, multi-dimensional" healing. Its originators are two former university professors: medical anthropologist Beatrix Pfeleiderer, "DR PHIL," and "consciousness researcher" Andrew Terker, Ph.D. According to Quantum ReleaseWork theory: (1) culture and "frozen" emotions suppress one's "true core"; (2) bodily cells hold emotional and psychological "woundings"; (3) "woundings" compress information in cells; (4) such compression prevents people from fulfilling their "true" potential; and (5) as people decompress the information in their cells, they slow the aging process and access their hidden potential for bliss, "energy," and creativity.^{46, 47}

Radiant breathing (radiant breathwork): Apparently, a method for the "release" of unconscious beliefs that "block" aliveness and for becoming aware of "Deep Body Memories."⁴⁸

Santeria: Subject of the 1987 occult thriller "The Believers." Like vodou [see NF 12:22, 1995], Santeria is a combination of Catholicism and ancient African magic. The word "Santeria" literally means "the worship of saints." Believers visit Santerian "spiritual healers" for "medical help" (e.g., to cure cancer). All Santerian priests and priestesses are herbalists. Most of the plants they use supposedly serve as remedies and as magical ingredients.^{49, 50, 51}

Scientific palmistry: Variation of medical palmistry* practiced by Nathaniel Altman, author of *Medical Palmistry*, *Palmistry for Lovers*, and *The Palmistry Workbook*. Supposedly, it involves "analysis" of the consistency and flexibility of the client's hands and reveals "detailed" information about health and spirituality.⁵²

Seitai control technique (seitai technique): Alleged aid to the restoration of a "true" state of perfect physical and mental health. It is related to Yoshida

taido (see below). The Japanese word "seitai" means "true physical and spiritual state."⁵³

Shamanic midwifery: Apparently Native American form of midwifery that frames childbearing as a spiritual quest and potential sacred "initiation" into a "mystery tradition."⁵⁴

SoulWork: A "holistic counseling and educational process" that includes guided imagery* and "other" shamanic "processes," purportedly for "soul access and retrieval."²²

Spiritual surgery: Form of spirit healing* and variation of spirit surgery* promoted by Lorna Green. Green is a medium for the "Spiritual Surgeons," supposed Christian spirits who work through God.⁵⁵

Starlink: Supposedly, an "interdimensional set" of "healing" movements derived from the work of the American Taoist Healing Center* with English "crop circle energies."⁵⁶

TaeUIJu healing meditation (TaeUIJu, TaeUIJu meditation, TaeUIJu healing): Mode of meditation promoted by JeungSanDo, an organization founded in 1871 by "Supreme Lord" JeungSan SangJeNim, in Korea. Supposedly, it is a process of returning to the magnanimous "bosom" of the original "Mother," and the first step to eternal life. The practice of TaeUIJu amounts to (1) sitting comfortably and (2) repeatedly, patiently chanting a "mantra" whose meaning is that one wants to return to the "Origin of the Universe." JeungSanDo defines "mantra" as "a set of words that contain concentrated energy of the universe." The aforementioned "Origin" purportedly can cure all mental and physical illnesses. Allegedly, the "original healing mantra," called TaeUIJu, protects one from sudden accidents and helps to fight disease and to resolve conflicts.⁵⁷

T'ai Chi Dao Yin: System of exercises that resembles hatha yoga and borrows from Taoist Chi Kung* and Chen style T'ai Chi Chuan (the prototype of tai chi³⁵). It supposedly increases "internal chi cultivation."⁵⁸

Taiji Wuxigong: Form of Qigong.* It is a set of exercises whose purported focus is the opening of the body's (alleged) "middle [energy] channel." Supposedly, steady practice of these exercises "can" conduce to an improvement of health, an increase in mental stability, restoration of vitality, and "possible" activation of "certain" latent abilities.⁵⁹

Tamang shamanism: Type of shamanism* practiced by the Tamangs, a group of Tibetan Buddhists in Nepal. It borrows from Buddhism and Hinduism and includes karga puja (see above). Tamang shamans always impute the disorders they treat to evil spirits.^{27, 60}

Tao healing energy chant: Adjunct to TaeUIJu healing meditation (see above) that supposedly structures "TaeUIJu Healing Energy." Up-and-down vibration of both hands purportedly concentrates the "Healing Energy" of chanters.⁵⁷

Taoist energy touch: A "traditional healing art" taught by Nan Lu (see Chapter 4 of *"Alternative" Healthcare: A Comprehensive Guide*). It purportedly involves summoning and directing "internal energy" to alleviate common minor ailments.⁶¹

Tattva shuddhi (tattva shuddhi meditation): Tantric form of meditation that posits chakras and five elements: air, earth, ether, fire, and water. It purportedly is adaptable to "self-healing."* "Tattva shuddhi" means "purification of the elements."⁶²

Ten Jin Do: "Transformational" mode of "energy work" that includes a meditative form of absent healing* (also called distance healing and distant healing).⁶³ The "Touch" of Ten Jin Do supposedly is available anywhere on earth through distance healing.^{64, 65}

Thai-style bodywork: Variety of bodywork "therapies" whose origin is Thailand. Their purported design is to create "energetic" balance and "wholeness" of body, mind, and spirit in practitioners and their clients.⁶⁶

Thought Therapy: "Self-study process" that posits a "spiritual-self" and purportedly enables use of twelve ("not just five") senses.¹

Transformational Breath™: "Powerful catalyst" and "gift of joy" that borrows from yogic doctrines. One of its premises is that suppressed emotions limit the ability "to feel and to be in the present" and tend to keep the body "under-oxygenated" and "under-energized."⁶⁷

Uighur medicine: Medical tradition of the Uighurs, the Turkic inhabitants of Xinjiang (Xinjiang Uygur), an autonomous region of westernmost China. It is a combination of ayurveda [see NF 11:36-38, 1994], traditional Chinese medicine,* and Unani medicine* (Unani *tibb*), an Islamic development.⁶⁸

Vedic astrology (Jyotish): Ancient system that allegedly helps to resolve doubts concerning children, health, "spiritual growth," and other subjects. Suggestions regarding donations, gemstones, herbs, mantras, *yantras* (mystic "diagrams"), and rituals are integral to the system.⁶⁹

VEGAtest method (Vega in vitro test method): Variant of applied kinesiology [see NF 12:26, 1995] developed by Helmet (sic) Schimmel, M.D., D.D.S., a German. Purportedly, it is a "bioenergetic evaluation system" for revealing "disturbance patterns" in a patient's "electro-magnetic acupuncture system." The method posits Qi ("inherent human bioenergy") and features an alleged multipurpose "kinesiologic muscle test" whereby practitioners can learn the "key toxin" causing bodily problems and select "proper" homeopathic "remedies."⁷⁰ Apparently, practitioners use portable instruments that reportedly measure skin conductivity and allegedly can help in the location of areas of "energetic imbalance or weakness."⁷¹

Vietnamese traditional medicine (Vietnamese medicine): Syncretic medical tradition of Vietnam. It includes acupuncture, cupping,* moxibustion,* and scarification.⁶⁸

Waitankung: Ancient Chinese exercise system of Taoist origin. Supposedly, the Waitankung exercises allow *chi* ("inner energy") to fill the body like an electric current.⁷²

Weigh Down Workshop: Christian weight loss program founded by nutritionist Gwen Shamblin, who apparently ascribes it to divine inspiration. According to a 1995 edition of the television newsmagazine "A Current Affair," Shamblin's "gospel" is: "Eat what you want, whenever you want, and ask the lord to help you to stop when you've had enough, so you leave room for a hefty helping of the holy spirit." The program includes audiocassettes, videos, books (e.g., *Feasting on the Will of the Father*), and "revival-like religious rallies."⁷³

WooJangJu power meditation (WooJangJu power chant): Variant of TaeUIJu healing meditation (see above) whose purported design is to protect meditators, while they are healing, from vengeful spirits.⁵⁷

Yoshida taido (Yoshida taido technique): "A kind of keep-fit technique" apparently developed by Toshiro Yoshida. Its apparent main premises are that (1) all diseases stem from leg disorders, and (2) maintaining "a good physical balance" and enabling adequate intake of "natural energy" are the keys to preserving soundness of body and mind. "Taido" means "body guidance." Yoshida *taido* and the *seitai* control technique (see above) are related.⁵³

*See *"Alternative" Healthcare: A Comprehensive Guide* (Prometheus Books, 1994).

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F O R U M

Nutrition

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Love Is Like Oxygen

Oxygen, the most abundant element on earth, is like love: Buying it is riskier than getting it free. And while some people receive it inattentively, others, it seems, can't get enough.

Something in the Air

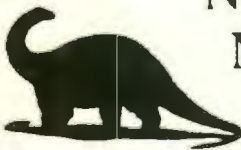
About fifteen years ago, I was a supplement buff reading *Rejuvenation*, a book in which "nutrition reporter" Linda Clark (then one of my favorite authors) recommended a liquid supplement called *Zell Oxygen*. ("Zell" is a German prefix that means "cell" (*Zelle*.) I eagerly bought at least one bottle of the refrigerated yeast preparation in a health-food store. It was unpalatable. An ad in an early 1992 issue of *Health World* magazine described *Genesis 1000*, a liquid mineral preparation, as "the oxygen supplement." It quoted a previous issue, which had designated this product "the vital nutrient." The March 1992 issue of *Let's Live* magazine carried the display for *Genesis 1000* substantially reproduced on page 15.

So-called oxygen supplements are still around. They're just obscure. Last year, I heard a vender at a health-food trade show describe oxygen as "vitamin O," the "most

vital nutrient" (see NF 12:12, 1995). *One Sickness—One Disease—One Treatment* (1995) recommends "formulas" such as *Liquid Lightning Oxygen-O₃* for "oxygen deprivation." (See the entry for Daniel's Diet in this issue's installment of "Healthcare Esoterica.") The December 1995/January 1996 issue of *To Your Health!* ("The Magazine of Healing and Hope!") included the ad below.

Where Do We Draw the Line?

Vitamins are by definition organic compounds (they contain carbon). Oxygen is not a compound and therefore not a vitamin. But is it a nutrient? Trying to define "nutrient" (or "food") is an exercise in tautology. Broadly, a nutrient is any substance that promotes development of the body, is necessary for life, or contains something necessary for life. According to *The Nutrition and Health Encyclopedia* (1989), "nutrient" is "a general term for any substance which can be used in the metabolic processes of the body." *Realities of Nutrition* (1993) states: "Nutrient is a general term that refers to any dietary substance that nourishes the body in some way."



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However, according to *The Dictionary of Nutrition and Food Technology* (1990), nutrients are "essential dietary factors such as vitamins, minerals, amino acids and fats"—substances that: are indispensable, we ingest, and have significance as part of a diet.

The meanings of words depend on general usage; and, in particular fields, the definitions of some words differ from their popular meanings. Apparently, most dietitians, qualified nutritionists, and food scientists do not designate oxygen a nutrient. Although oxygen is essential for metabolism in animals and plants, there are reasons for not considering it a nutrient:

- Oxygen is dietarily ubiquitous: It is a percentage component of air (as in ice cream) and a molecular component of carbon dioxide (as in soda pop), water, and many other food constituents (e.g., the essential nutrients lysine, tryptophan, and vitamins A, B₁, B₂, B₆, B₁₂, C, D, and K). However, oxygen is not in itself a dietary factor, because: (1) oxygen in the alimentary canal does not discretely contribute to digestion or absorption (that is, nascent (atomic) oxygen (O), ordinary (diatomic) oxygen (O₂), and triatomic oxygen (O₃), as such, do not contribute); and (2) oxygen does not contribute to metabolism as a discrete dietary component.

In short, oxygen is dietarily ubiquitous, yet oxygen whose source is food or dietary water does not discretely contribute to digestion, absorption, or metabolism. (In a related vein, the metallic element cobalt apparently is essential to humans solely because it is part of cobalamin—vitamin B₁₂. However, cobalt is not dietarily ubiquitous.)

- Hypoxia (definable as a deficiency of oxygen in body tissues) and anoxia (which includes severe hypoxia and histotoxic anoxia (a condition due to the inability of tissues to utilize oxygen)) are not related to the amount of oxygen that enters the gastrointestinal tract.
- Although O₂, like other small molecules, is absorbable from the gastrointestinal tract (particularly the small intestine), we expel most of the air we swallow. The proportion of oxygen in swallowed air that we absorb from the gastrointestinal tract appears unknown, but it is probably very small.
- It is not useful for science-oriented health professionals to consider oxygen a nutrient: Dietary supplements cannot beneficially change oxygen intake. Diet affects oxygen intake only rarely, as in cases of asthma and/or hypersensitivity to sulfites. The effect in such cases is due to the inclusion or exclusion of particular foods, not to the amount of oxygen in the diet.

Carbon, which is dietarily ubiquitous, and nitrogen, a constituent of all amino acids, are also essential to life, but I've never heard or read a description of either as a nutrient for humans. Perhaps this is because there is no financial reason to describe them as such.

The "O" Zone

Oxymania has increased considerably since I bought *Zell Oxygen* circa 1980. Self-"oxygenators" don't necessarily take supplements, though. Some introduce an allotrope of oxygen—ozone (O₃)—into their colons via the anus. (Ozone yields O₂ and atomic oxygen (O), which is more active chemically than O₂.) Some drink hydrogen peroxide solutions and/or "therapeutically" ozonized water.

Alternative Medicine: The Definitive Guide (1993) (see NF 11:57, 1994) states that *oxygen therapy* refers to "a wide range of therapies utilizing oxygen in various forms to promote healing and destroy pathogens (disease-producing microorganisms and toxins) in the body." According to the *Guide*, the two main categories of oxygen therapy (also called *oxygen therapies*) are: (1) *oxygenation therapy*, which comprises methods that purportedly add oxygen to blood or tissues (e.g., hyperbaric oxygen therapy (HBOT)); and (2) *oxidation therapy*, which includes hydrogen peroxide therapy. (Use of a "pressure chamber" that fits one person or several people distinguishes HBOT, which has utility in treating burns, carbon monoxide poisoning, smoke inhalation, and other conditions.) The *Guide* suggests that ozone therapy spans both categories. Expressions related to oxygen therapy include: *oxygen healing therapies*, *hyperoxygenation therapy* (or *hyperoxygenation therapies*) (see NF 12:55, 1995), *oxidative therapy* (or *oxidative therapies*), *bio-oxidative therapy*, and "bio-oxidative medicine." However, all of the oxygen therapy-related expressions in italics in this paragraph are elusive; there is no consensus on their meanings.

The expression "bio-oxidative medicine" is part of the name of the International Bio-oxidative Medicine Foundation, in Oklahoma City, Oklahoma. On January 17, a telephone operator told me that Southwestern Bell did not have a listing for the foundation. Later that day, I called the foundation using the phone number provided by *Alternative Medicine: The*

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Definitive Guide and the *Alternative Medicine Yellow Pages*. The call led to my hearing a "message-only recording" on what the voice referred to as voice mail.

In a two-part article, Dr. Saul Green vaporizes the mystique of "oxygenation therapy." Part I,

below, deals with hydrogen peroxide therapy and "glyoxylide," an alleged oxidizer of purported value in curing cancer. Part II, which will head the next issue of *NF*, flattens the "champagne" of oxygen therapies—ozone therapy.—*J.R.*

Oxygenation Therapy: *Healing or Hot Air?*

Part I: "Glyoxylide" and Hydrogen Peroxide

Saul Green

The universal fear of life-threatening illnesses such as cancer and AIDS smoothes the way for entrepreneurs to swindle the unsuspecting and the desperate with the promise of a safe and effective treatment. The crescendo of the rhetoric extolling oxygenation therapy is such that it must seem a medical miracle to the scientifically illiterate.

The cornerstone of oxygenation therapy is the dogma that all human diseases are caused by the absence of oxygen in body tissues. This anoxia allegedly results in: the production of "inferior" energy through anaerobic fermentation, incapacity for oxidative detoxification of metabolic poisons, and inability of the immune system to destroy pathogenic bacteria and viruses. Purportedly to correct these alleged results,

oxygenation therapists promote the use of chemicals that, supposedly, release oxygen into tissue fluids or kill germs in vivo. Their claims trace to two medical doctors: William F. Koch¹ (1885–1962) and Otto Warburg² (1883–1970).

Roots

After he noticed that removal of the parathyroid gland caused blood clotting, Detroit physician William F. Koch concluded that the cause of cancer was a metabolic defect due to a single toxin generated by an injury or irritation. In 1919, he proposed that the burning of toxins produced as metabolic byproducts, and by bacteria, normally accompanied carbo-

hydrate metabolism, but that when these toxins persisted in the blood, they damaged the toxin-burning system and converted a normally present "harmless germ" into a virulent carcinogen. Koch claimed to have invented an "antitoxin to cancer"—a supposed mixture of parabenzoquinone (which contains oxygen) and an alleged oxidant he called glyoxylide ($O=C=C=O$). He reportedly injected a millionfold dilution of this mixture into patients every six months, to "stimulate all the body's oxidation reactions to cure the cancer and a host of other diseases."³ Koch never revealed how to manufacture glyoxylide.

Otto Warburg affirmed that the solution to cancer lay in identifying a biochemical difference between the energy-producing systems of normal cells and those of cancer cells. In 1931, he won the Nobel Prize for his discovery of the oxygen-transferring enzymes in cellular respiration. In 1944 he

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won another, for identifying the enzymes that transfer hydrogen in metabolism. But his research never showed that normal cells and cancer cells use oxygen differently. He did find, however, that whereas normal cells produced lactic acid only under conditions such as oxygen depletion or deprivation, cancer cells produced lactic acid even when plenty of oxygen was present. From this observation he concluded that energy metabolism in cancer cells was defective.⁴ Moreover, he professed, erroneously, that cancer cells produced lactic acid because they could not use oxygen.

Over the next three decades, cancer researchers identified nearly all of the energy-producing metabolic pathways in normal cells and in cancer cells and learned that the energy-producing systems in both were the same.⁵ Nevertheless, Warburg insisted until his death in 1970 that "inferior" energy produced by anaerobic metabolism was the cause of cancer.⁴

Misguided by the conclusions of Koch and Warburg, proponents of oxygenation therapy claim: (a) that "toxins" in the environment, in processed foods, and in modern medicines harm normal mammalian cells; (b) that an oxygen deficiency results; (c) that this deficiency damages the oxidative metabolism of normal cells; (d) that normal cells consequently fall back on anaerobic metabolism; (e) that anaerobic metabolism produces "inferior" energy; and (f) that the final stage of this chain of (alleged) events is cancer. To restore the effective use of oxygen for proper digestion and excretion and for efficient immune function, they say, treatment should include: pure, "all-natural," poison-free nutrients; vitamin and mineral supplements; and substances that replenish tissues with oxygen and thus restore processes that burn off toxins.

Hydrogen Peroxide: "God's Given Immune System"?

Among the earliest proponents of the use of hydrogen peroxide (H_2O_2) as a treatment for "degenerative diseases" like cancer was Father Richard Willhelm, a Catholic priest.⁶ Willhelm said that, working with a microbiologist at the Mayo Clinic in the 1940s, he "learned that bacteria can gnaw at the joints, cause inflammatory arthritis, give off calcium waste that cements bones together, lodge in the liver and kidney and form stones, leave hard deposits on walls of arteries, short-circuit the energy in the brain, cut off the blood supply to cells, and cause a loss of oxidative metabolism." From Koch's and Warburg's work he gathered that "cancer doesn't like oxygen," and because hydrogen peroxide gives off oxygen when it decomposes, he concluded that it should be used to treat diseases caused by "inadequate oxygen metabolism." Willhelm has referred to hydrogen peroxide as "God's given immune system."⁶

In 1982, Willhelm met Walter Grotz, a retired employee of the United States Postal Service. When Grotz complained about his arthritic pain, Willhelm suggested that, for several weeks, the retiree drink daily between 1 and 7 glasses of pure water to which a few drops of a "food grade"

35% hydrogen peroxide solution had been added. Grotz said that doing this had freed him from pain, and he became Willhelm's disciple. As they traveled around the United States spreading their gospel, people began to use hydrogen peroxide solutions to bathe pets, disinfect aquariums, mist flowers, oxygenate garden soil, treat livestock, and wash crops. Usually, however, hydrogen peroxide was promoted as a treatment for human illness; Willhelm maintained in the 1980s that hydrogen peroxide "joyfully relieves" amebiasis, angina, arthritis, asthma, cancer, candidiasis, the common cold, emphysema, gingivitis, hemorrhoids, herpes, lupus, malaria, moles, multiple sclerosis, psoriasis, tumors, and warts.

Home Is Where the H_2O_2 Is?

A French chemist discovered hydrogen peroxide in 1818. It is present in nature in trace amounts. At solutions of 30 to 35 percent, so-called food grade hydrogen peroxide is so caustic it can burn skin severely; if one allows it to dry on a combustible surface, it can start a fire. Hydrogen peroxide decomposes violently when it is in contact with rough surfaces or with traces of organic matter. Heat, light, agitation, and substances such as carbonates, charcoal, chlorides, iron, and proteins accelerate decomposition of hydrogen peroxide in solution. Decomposition of the hydrogen peroxide in one volume of a 30% hydrogen peroxide solution generates 100 volumes of oxygen gas.

Some proponents of hydrogen peroxide therapy (e.g., in books such as *Hydrogen Peroxide Therapy: New Hope for Incurable Disease*) have suggested that patients treat themselves at home by drinking a hydrogen peroxide solution, taking homemade hydrogen peroxide pills,⁷ brushing their teeth with hydrogen peroxide preparations, massaging a hydrogen peroxide solution (e.g., a gel) into their skin, soaking in bathwater containing it, or administering it in enemas or douches. In a 1986 issue of the newsletter *Nutrition in Action*, for example, Kurt Donsbach [see NF 4:65-68, 1987; and NF 11:19, 1994] gave instructions on preparing "food grade" hydrogen peroxide for drinking. Donsbach said it took a week to "clean out" gastric flora, "good" and "bad." Although the stomach does not harbor any microbes, he stated:

When hydrogen peroxide comes in contact with virus and streptococcus in your stomach, it liberates free oxygen. If your stomach feels queasy after you drink the [hydrogen peroxide] solution, the peroxide is seeking out and destroying virus and streptococci. The normal flora, the good ones, can then be replaced by eating plain yogurt and health food supplements that contain acidophilus, bifidus and bulgaricus.

Charles H. Farr M.D., Ph.D., promotes intravenous

"Every dogma must have its day."

—H.G. Wells

infusion of hydrogen peroxide as "oxidative therapy."⁸ He has provided a detailed recipe for injectable hydrogen peroxide⁹ and declared:

There is no distinct class of patients that are best suited for intravenous hydrogen peroxide therapy because of the wide variety of pathological conditions that improve from oxidative detoxification, the oxygenation of hypoxic tissues and the stimulation of the immune system that an intravenous infusion of hydrogen peroxide induces. Specific benefits are seen in patients with peripheral-vascular, cerebrovascular and cardiovascular diseases, arrhythmias, emphysema, asthma, cancer, M.S., rheumatoid arthritis, Parkinson's, migraine, cluster and vascular headaches, allergies and pain. There may even be a reversal of atherosclerosis due to the action of the peroxide on the lipid material in blood vessel walls.⁸

Q & A: Missing Ingredients and "Farr-Out" Claims

Below are some questions whose answers shed a skeptical light on the claims for oxygenation therapy already conveyed.

• Ghostlike Glyoxylide

Does the alleged molecule Koch termed glyoxylide exist? "Glyoxylide" has been a subject of investigation or evaluation by some of the world's most distinguished organic chemists, from H. Staudinger in 1913 to J.A. Berson in 1986. In 1993, the *International Journal of Mass Spectroscopy and Ion Processes* presented a review of the literature on "glyoxylide." Therein, D. Sulzle and associates found that all efforts to prepare, isolate, or chemically characterize this alleged compound had failed. Moreover, Sulzle's inspection of the theoretical chemistry of "glyoxylide" had shown that the substance described by Koch cannot exist in nature (it's too unstable). The combination of the aforementioned finding and W.F. Jenssen's finding that Koch's "medicine" did not contain any component identifiable as glyoxylide or parabenzoquinone³ leads one to conclude that "glyoxylide" was a mere figment of Koch's imagination.

• The "Primary Cause of Cancer"?

Does anaerobic metabolism cause cancer? In a 1961 monograph,⁵ Aisenberg minutely reviewed published studies on energy metabolism in normal and tumor tissues. He came to the following conclusions.

- Most carcinogens are not respiratory poisons.
- Most respiratory poisons are not carcinogens.
- Oxygen neither prevents nor inhibits cancer growth.
- Tumor cells grow optimally in tissue-culture dishes in air.
- Tumors grow rapidly in tissues that are well supplied with oxygenated blood.

- The absence of oxygen does not stimulate tumor growth in vitro or in vivo.
- Agents effective against cancer interfere with DNA synthesis, not with fermentative metabolism.
- Tumors do not get a significant amount of their energy from fermentation.
- Tumors produce energy through oxygen-driven metabolism of carbohydrates and fats.

Since the mid 1960s, scientists have identified the processes of cancer initiation, promotion, and progression. Their findings show that cancer arises from the disruption of genetic regulation, DNA damage, and the activation of oncogenes. (Oncogenes are defective genes capable of transforming normal cells into cells that proliferate abnormally. Without a trigger, they don't do any harm.) Evidence of "poisoning" in the respiratory enzyme systems of tumors does not exist.

Although Warburg did discover scientifically significant differences in the metabolism of normal and cancer cells, these differences did not identify the replacement of respiration by fermentation as the "primary cause of cancer."⁵

• A Drop in the Bucket

Can the oxidative therapy of Charles H. Farr oxygenate hypoxic tissues?

At sea level, we normally inhale about 500 milliliters of air, about 21 percent of which is oxygen. The pressure of this oxygen is about 160 mm Hg (millimeters of mercury). When inhaled air reaches the surface of the alveoli (air sacs) of the lungs, it contacts the air already there, which has a pressure of 100 mm Hg. The difference in pressure drives the inhaled oxygen across the alveolar membrane, into the air sac. There, the difference between the pressure of the newly arrived oxygen and that of the oxygen in the venous blood that bathes the alveolar membrane—40 mm Hg—makes the additional oxygen diffuse into the venous blood. The hemoglobin in red blood cells (RBCs) takes up the oxygen, and the blood, now oxygen-rich, returns to the heart, which pumps it into arteries. When this arterial blood reaches the tissues, the oxygen carried by the hemoglobin moves into the tissue cells.

The delivery of oxygen to tissues depends on the capacity of RBC hemoglobin to carry oxygen. Normally, the hemoglobin leaving the lungs is 98% saturated with oxygen. Complete saturation is achievable only if: (a) the amount of oxygen in the inhaled air is about threefold the amount in normal air, or (b) the subject inhales oxygen exclusively for at least several hours. The hemoglobin in one liter of blood can carry about 200 milliliters of oxygen. Tissues take up about 50 milliliters of this. The tissues of a normal, 60-kilogram adult require delivery of 200 to 250 milliliters of oxygen per minute.¹⁰ Hydrogen peroxide in the amount infused into a patient during one oxidative-therapy session yields 100 milliliters of oxygen per day—an insignificant contribution.¹¹

• A Double-Edged Sword

Is hydrogen peroxide a germicide? Phagocytosis is the

principal natural mechanism for the removal of bacteria, fungi, and viruses from the body. Activated phagocytes (e.g., white blood cells) attach to pathogenic organisms and parasites and ingest (phagocytize) them. The killing of such pathogens occurs inside the phagocytes. There, an enzyme generates superoxide free radicals. Another enzyme, superoxide dismutase (SOD), fuses these free radicals into hydrogen peroxide, which turns intracellular chloride ions into free radicals that kill germs.

Proponents of oxidative therapy say that oxygen and hydrogen peroxide kill anaerobic bacteria, and that they do so because anaerobic bacteria lack: (a) SOD, which protects cells against oxidative damage; and (b) the peroxide-destroying enzymes catalase and peroxidase, without which hydrogen peroxide accumulates to toxic levels. But evidence of an oxygen intolerance in anaerobic organisms does not exist. And, though Farr has alluded to a variety of antibacterial, antiviral, and antiparasitic actions of hydrogen peroxide,⁸ he has admitted that there hasn't been any observation of a connection between peroxide-related germicidal activity and the infusion of hydrogen peroxide in patients infected with a variety of organisms.⁹ Independent investigators have confirmed this, explaining that the lack of a bactericidal effect of high concentrations of hydrogen peroxide was directly related to the presence in the blood of catalase.¹² The large amounts of catalase and peroxidase normally present in the blood precludes the existence of hydrogen peroxide there for more than a few seconds. One must conclude that hydrogen peroxide introduced into the human bloodstream does not act as a germicide.

Hydrogen peroxide does participate in bactericidal processes within activated phagocytes, but when it escapes from these cells into adjacent extracellular spaces during inflammatory processes, it becomes a major contributor to tissue damage in cases of lung disease, malignant tumors, and hemolytic disorders.

Hydrogen peroxide in pharmacologic concentrations in the blood can easily cause as much harm as good.¹³

• Viva In Vivo Peroxide?

Can infused hydrogen peroxide increase the level of oxygen in the blood? The hemoglobin of RBCs in arterial blood gives up about 25 percent of its oxygen when it passes through the tissues. Thus, the hemoglobin of venous blood (the blood leaving the tissues) is oxygen-poor. When a solution of hydrogen peroxide is injected into venous blood, the hemoglobin takes up the oxygen released by catalase. Therefore, when this venous blood reaches the lungs its hemoglobin contains more oxygen than it otherwise would have contained and requires less airborne oxygen for saturation.

Since arterial blood leaving the lungs is almost fully saturated with oxygen, it is likewise impossible for the arterial infusion of hydrogen peroxide to increase the amount of oxygen carried to the tissues. Johnson and associates¹⁴ created a theoretical model to predict the effects of such an infusion. Johnson recognized that arterial hemoglobin,

since it was saturated with oxygen, could not take up the oxygen released from hydrogen peroxide. Only the plasma could accommodate the released oxygen. But there's a hitch: Because gaseous oxygen dissolves slowly in plasma, bubbles of oxygen gas would linger in the blood for as long as half an hour. Johnson predicted that, under certain circumstances, these bubbles would cause a gas embolism. He found that, when the arterial blood of rabbits contained 0.01 volumes percent of hydrogen peroxide, bubbles of oxygen gas caused embolisms that resulted in complete shutdown of capillary blood flow.

• O₂, O₂ Everywhere, But...

Can oxygen dissolved in plasma relieve anoxia? With little or no unsaturated hemoglobin, 100 cc of plasma at 100 millimeters of ambient pressure can hold 0.3 of a milliliter of oxygen in simple solution. This means that the total amount of oxygen dissolvable in all the plasma of a 60-kilogram adult is about 20 milliliters.¹⁰ Since there is no physiological mechanism whereby tissues can extract oxygen dissolved in plasma, and since tissues require 200 to 250 milliliters of oxygen per minute,¹¹ 20 milliliters of oxygen dissolved in plasma is a triviality.

• Possible Adverse Reactions

Is ingestion or infusion of hydrogen peroxide safe? At the end of his paper on how to infuse a solution of hydrogen peroxide, Farr stated that, since the ability of the lungs to filter out microbubbles is limited, a continuous infusion of hydrogen peroxide that results in a volume of 0.01 per 100 milliliters of blood can cause an arterial gas embolism and irreversible lung damage.⁹ That such adverse reactions have occurred is clear from reports in the conventional medical literature. These incidents include: emphysema following use of a hydrogen peroxide solution as a mouthwash or gargle; gas embolism and emphysema following deep wound irrigation; gas embolism in the portal circulation; hemolytic crisis following ingestion of a hydrogen peroxide solution; necrosis and gangrene following enemas or colonic lavage with a hydrogen peroxide solution; respiratory arrest; seizures; shock; stroke and multiple cerebral infarcts; ulcerative colitis; and venous embolism following irrigation of an anal fistula and irrigation of surgical wounds.

Reports of adverse clinical incidents are absent from the literature disseminated by proponents of oxygenation therapy.

Conclusions

(1) "Glyoxylide," an alleged ingredient of William F. Koch's "antitoxin to cancer," cannot exist. (2) Neither anoxia nor anaerobic metabolism cause cancer. (3) Ingesting, infusing, or injecting hydrogen peroxide solutions cannot oxygenate body tissues, is risky, and lacks proof of therapeutic or preventive utility.

NF contributing editor Saul Green, Ph.D., is a biochemist who conducted cancer research at Memorial Sloan-Kettering Cancer Center for 23 years. He is president of ZOL Consultants, Inc., in New York City, and a board member of the National Council Against Health Fraud.

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Healthcare Esoterica

Presenting the 10th installment of descriptions of mystical and/or supernaturalistic
alternativist methods. Wonders never cease.—J.R.

Celtic shamanism: Apparent distillation of an ancient tribal tradition, promoted by Geo Cameron, M.A. It purportedly involves: meditating to cleanse "energy centers"; chanting to receive a "healing song" and enter a "web of light that connects all things"; and awakening spirits, including an arborescent warrior, "Fairy Folk," and the "transformative power of the sacred fire."¹

Chi Healing (Fa Chi): Component of Chi Lei (see below) in which "teachers" (apparently "doctors") allegedly bring "healing energy from the universe" to individuals to facilitate healing.²

Chi Lei: Variation of Qigong* and Qigong therapy* developed by Pang Ming, a physician and "chigong grandmaster," and practiced at the Wahzhan Zhineng Chigong Clinic and Training Center, a "medicineless hospital" in Qinhuangdao, China. This "healing art" has four components: (1) generation of a strong belief (*shan shin*)—e.g., by listening to testimonials—that *chi* ("life energy") can heal all ailments; (2) Chu Chong (see below); (3) Chi Healing, also called Fa Chi (see above); and (4) Lan Gong ("practice"), which includes methods from Zhineng Chigong (see below).²

Chu Chong (Group Healing): Component of Chi Lei (see above) wherein a "teacher" (apparently a "doctor") allegedly: (1) synchronizes the thinking of a group of "students" (patients) to obtain *chi* ("life energy") from the "universe," and (2) brings it into a "healing energy field."²

Daniel's Diet: Alleged medical panacea and "higher way of eating" promoted by microbiologist Robert O. Young, Ph.D., author of *Colloids of Light & Life*, *Profiles of Microscopy*, and *Sick & Tired*. In *One Sickness—One*

Disease—One Treatment (1995), Young holds that mycosis, or fungal infection, or over-acidification of the body (or blood), is the only disease.³ He further holds that an "inverted" way of living and eating, especially excessive consumption of sugars and animal protein, causes such over-acidification. Daniel's Diet excludes all foods except avocados, lemons, limes, tomatoes, vegetables (e.g., buckwheat and soybeans), dark-green vegetable juice, tofu (bean curd), millet, "sprouted" or soaked seeds and nuts, oils, sea salt, herbal teas (e.g., "Essiac Tea" [see NF 11:54-55, 1994]), specific dietary supplements (e.g., Pycnogenol [see NF 11:54, 1994]), and *LiquidLightning Oxygen-O₃* (a "formula" purportedly beneficial for "oxygen deprivation"). The diet is the namesake of a Jewish "prophet" and fortuneteller of the sixth century B.C.E. According to the Book of Daniel, in the Old Testament, Daniel refused to consume meat and wine assigned to him by a Babylonian king, requested vegetables and water, and, after eating only vegetables for ten days, appeared healthier and stronger.⁴ In the aforementioned 1995 book, Young, evidently a theist, states: "In all of Gods' [sic] creations there is order and purpose."

Dreambody Work: Mode of bodywork* [see NF 11:51-52, 1994] developed by American psychotherapist Arnold Mindell, Ph.D., at the Jung Institute in Zurich, Switzerland. It includes dreamwork.* The purported design of Dreambody Work is to heal the source of illness "as it manifests in the unconscious."⁵

Feldenkrais method: Mode of bodywork* [see NF 11:51-52, 1994] originated in Israel by physicist and engineer Moshe Feldenkrais, D.Sc. (1904-1984). It is a form of "movement reeducation" whose alleged results include "increased levels of vital energy"⁵ ("renewed inner

vitality"⁶). The method encompasses: (1) private, one-on-one instruction, called Functional Integration®, and (2) group instruction, called Awareness through Movement®.

Intuitive diagnosis: Alleged diagnosis by "accurate intuition," such as that practiced by Edgar Cayce.* Its apparent main premise is that the conscious ignores "signals" that surround humans, but that such "information" is obtainable if one's mind functions as a "super-receiver."⁷

Kali Yoga: Purported means of opening all of one's chakras and realizing one's "greatest potential."⁸

Multi incarnational recall and emotional body balancing: Form of "energetic healing" developed by author Chris Griscom, founder of the Light Institute of Galisteo, in New Mexico. It purportedly uses techniques from "Windows [or "Window"] to the Sky acupressure" to remove "blockages" and to facilitate recall of "multi incarnations."⁵

Nine Star Ki: System of "directionology"⁹ and futuristic astrology based on "Oriental five element theory,"¹⁰ Supposedly, it is a "profound science" and the most comprehensive astrological system. Members of the macrobiotic* community reportedly use Nine Star Ki to determine the best directions in which to travel and which directions to avoid.

Oriental 7-Day Quick Weight-Off Diet: "Unique" plan originated by the late "mystical philosopher" Norvell, author of *Mind Cosmology*, *Norvell's Dynamic Mental Laws for Successful Living*, and *Universal Secrets of Telecosmic Power*. It includes a "Vitalic Sustaining Diet" and techniques for using the "power of 'negative energizer foods.'"¹¹

Reiki meditation: Meditation system that purportedly involves the "healing power" of reiki.* It allegedly can bring on clairvoyance and release or transmute "negative energy."¹²

**"If everything on earth were rational,
nothing would happen."**

—Feodor Dostoyevsky

SkyDancing Tantra: Westernized form of tantra* developed by Margo Anand,* author of the bestseller *The Art of Sexual Magic*. An "approach to sexual ecstasy," it borrows from bioenergetics,* neuro-linguistic programming,* shamanism,* and transpersonal psychology* [see NF 12:60, 1995]. SkyDancing Tantra supposedly "awakens" vitality and "hidden powers of the brain."^{13, 14}

Soul reading: Variation of psychic healing* practiced by Irishman Niall Gerrard, a former student of "metamorphic techniques"¹⁵ (probably the metamorphic technique*).

Spirit releasement: Form of exorcism that purportedly removes "negative energy" from persons and property. Alleged causes of symptoms supposedly clearable with spirit releasement include curses, ghosts, and Ouija.¹⁶

Structural Alignment: Form of bodywork* whose purported design is to restore "Balance" physically, emotionally, and "energetically."¹⁷ Apparently, Structural Alignment supposedly: makes a "new way of being" available to clients and precipitates a feeling of being supported by gravity ("the earth's energy field").

Whole System Healthscan: "Healing system" that includes cranial work.* Related to contact reflex analysisSM (CRA) [see NF 11:47, 1994], it purportedly enables doctors to assess nutritional needs and "biochemical deficiencies" accurately through analysis of "electrical pathways" and "reflex points."¹⁸

Zhineng Chigong: Form of Qigong* practiced at the Wahzhan Zhineng Chigong Clinic and Training Center, a "medicineless hospital" in Qinhuagdao, China. It includes the "Lift Chi Up and Pour Down Method" and the "Three Centers Merge Standing Method."²

*See "Alternative" Healthcare: A Comprehensive Guide (Prometheus Books, 1994).

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Readers' Forum

Vegephilia, or Anticarnivorism?

Dear Jack:

“The Skinny on Low-Fat Dieting” [NF 12:65–70, 1995] states in error that “all SDAs are vegetarians.” Only half of Seventh-day Adventists are vegetarians. Unlike smoking tobacco or ingesting alcohol or pork, which can get one disfellowshipped (kicked out of the church), vegetarianism is optional. I am a nonvegetarian SDA. Only about one percent of SDAs are vegans.

John Morgan, Ph.D., an epidemiologist with the Adventist Health Study who is a board member of the National Council Against Health Fraud, tells me that the low incidence of colorectal cancer reported (retrospectively) for SDAs has not held up to prospective study. Meta-analysis of research has revealed a null effect when the study was well designed; so it is with the more reliable data on SDAs. This has not been published yet. Morgan reported some difficulty getting it published. I believe there is a lot of wishful thinking



(a form of pathological science) driving the diet-disease literature. I agree wholeheartedly with the three factors in your editor's note [“The beneficialness or harmfulness of ingesting a particular food depends on: (1) the amount consumed, (2) the frequency of consumption, and (3) the eater's health status, genetics, and long-term pattern of food consumption and physical activity.”].

Vegetarianism is wrongly named. Vegetarians are defined not by a love of vegetables, as the term suggests, but by their hatred of meat: They are anticarnivorists. I am a vegetable enthusiast because I believe that vegetables have highly desirable nutritional features, but these can be obtained without excluding meat or other animal foods. Rational, pragmatic vegetarianism and ideological vegetarianism are very different.

William Jarvis, Ph.D.
Professor of Public Health and Preventive Medicine
Loma Linda University Schools of Public Health and Medicine

BOOK REVIEWS

Title: *The Complete Book of Dental Remedies: A Guide to Nutritional and Conventional Dental Care* (1996)

Author: Flora Parsa Stay

Publisher: Avery Publishing Group, Garden City Park, New York

Price: \$15.95 softcover

Reviewed by: John E. Dodes

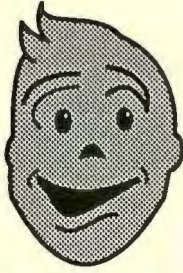
The publisher of this paperback calls it a “reliable source of information that can help you learn your options and give you plenty of reasons to smile.” I’m not smiling. The author, Flora Parsa Stay, does not help consumers distinguish methods of proven safety and efficacy from discredited or experimental ones. Stay is a dentist who

received her D.D.S. degree some twenty years ago from the University of California at San Francisco and has attended a nonaccredited acupuncture college.

Cleaning Blood at Herbal Teatime

The book has three main sections. Part One, “Exploring the Essentials,” describes: the structures of the mouth; basics of dental hygiene and ingredients of mouthwashes and toothpastes; diet and nutrition; homeopathy; herbal therapy; and how to choose a dentist. Much of the basic information is accurate, but Stay’s descriptions of nonconventional dental “therapies” do not suggest any doubt that untested and scientifically

discredited methods work. In her discussion of mouth structures, she states: "According to Chinese medical science, the tongue is divided into certain sections, with each part pertaining to an organ....Color, texture, size, and shape of the tongue are taken into consideration as a diagnostic tool to help determine the organ to be treated." However, she doesn't say whether this "science" and "approach to the diagnosis and treatment of disease" is useful to patients.



Describing homeopathy, Stay states: "Each agent is prepared by successive dilutions of the ingredients...alternating with...vigorous shaking...which is continued until the resulting medicine contains no molecules of the original substance." Yet she doesn't explain how a "medicine" or "therapeutic agent" without an active ingredient could work; and, with just a few weak caveats, she recommends homeopathic self-"treatment." [See NF 11:58-59, 1994.]

Describing "herbal therapy," she uses imprecise expressions such as "cleanse the blood" and "warm and stimulate the body." Again, her warnings are few and mild. Stay fails to note that most herbal "remedies" are untested, unregulated, and nonstandardized. Further, she recommends drinking a tea made from lobelia and other herbs to relieve jaw pain. In *The Honest Herbal* (1993), the eminent pharmacognosist Dr. Varro Tyler states that crude lobelia "has been thoroughly discredited, and any use of it...is definitely not recommended."

The "Price" is Wrong

Stay implicitly approves the discredited notions of Weston Price, the dentist who wrote *Nutrition and Physical Degeneration* (first published in 1939). Price wrongly concluded that tooth decay was a tragic consequence of our "modern degeneration," which he called "race decay." He blamed soil depletion, pasteurized milk, sugar, and white flour. The sections on vitamins and minerals are fairly accurate. Stay tacitly endorses the Recommended Dietary Allowances (RDAs), and she even mentions adverse effects of excessive intakes. However, she sometimes misrepresents the RDAs as average

suggested intakes, daily minimal requirements, daily requirements, doses, and recommended daily doses. For example, she states that the "daily requirement" for folate for adults is 400 micrograms, which is the RDA for pregnant females, not all adults.

Part Two, "Common Dental Disorders," features an alphabetical list of dental problems. Stay's "conventional," herbal, homeopathic, and dietary-supplement recommendations follow each problem's definition. This gives the dangerous impression that the herbal, homeopathic, and nutritional treatments are as effective and safe as scientifically tried and true treatments. For example,



Stay's discussion of "mercury toxicity" is loaded with innuendo and approval of discredited practices such as hair analysis and "mercury toxicity" testing with vapor-detecting machines. She cites one such device, the Jerome analyzer, which is designed for industrial use but misused by many anti-amalgam dentists. It measures the amount of mercury in a small sample of air and then multiplies that number by a factor of 8,000 to give the amount in a cubic meter of air. This volume is much larger than that of the human mouth and leads to inaccurate and, often, frightening readings. That Dr. Stay does not exhibit a firm position on the proven safety of silver amalgam fillings suggests a lack of scientific understanding.

Part Three, "Dental Techniques," deals with widely accepted methods, such as bonding, root canal therapy, orthodontics, and periodontal therapy, and—promotionally—with acupuncture, chelation therapy, and herbal treatments. Again, much of the basic dental information is accurate and useful, but there is also too much that is false and misleading,

This could have been a valuable book if the author had been much more discriminating. Carl Sagan has said that one should not keep one's mind so open that one's brain falls out. I fear that Dr. Stay checked her brain at Avery Publishing Group before she wrote this book.

John E. Dodes, D.D.S., is president of the New York Chapter of the National Council Against Health Fraud and coauthor of an upcoming book (tentatively titled *Toothache*) from St. Martin's Press.

In the Next Issue:

"Tales from the 'O' Zone"



A Professional Natural Hygienist's Review of
Chiropractic:
The Victim's Perspective

Title: *Chiropractic: The Victim's Perspective* (1995)

Author: George Magner (edited by Stephen Barrett)

Publisher: Prometheus Books, Amherst, New York

Price: \$24.95 hardcover

Reviewed by: Donald E. Paulin

In 1991, George Magner founded Victims of Chiropractic, which provides information and support to chiropractic casualties. His book is a terrific gift of the heart for all who want to separate reliable, scientific health information from health hype, propaganda, and politics. Magner tells us exactly why chiropractic's infamous subluxation theory is a fraud. We learn that its "preventive maintenance" pitch is just so much offensive twaddle. Ultimately we conclude that magical, wishful, delusional thinking in many chiropractors and their patients is the engine of chiropractic's very existence. In my observation, chiropractors think they're all things to all people. Their profession smacks of messianism.

**An Act Perhaps
...but Not a Class Act**

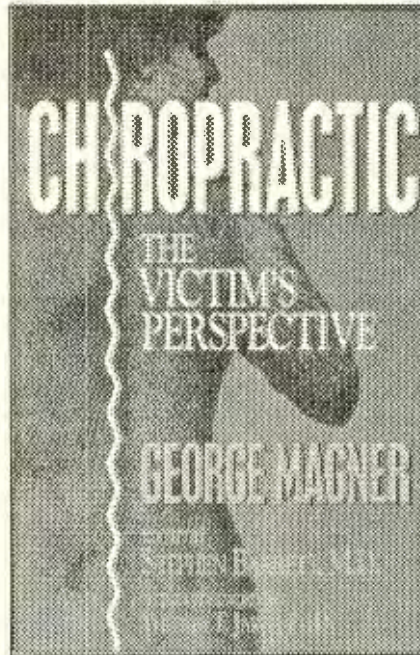
My own research into chiropractic began in 1986 after some disturbing experiences with two Orange County, California, chiropractors. Both were self-proclaimed fervent Christians. Myself a Christian, and then unemployed, I responded to the following classified ad in the *Orange County Register*.

Sales

Motivated and experienced salesperson needed for dynamic, growing Health Care Facility. To educate the public on health care, emphasize prevention and wellness. Must be enthusiastic, positive, prof'l and REALLY care about people. Potential for BIG BUCKS. Call....

Of course, the uppercase "big bucks" didn't suggest to me a "class" organization, but I sent a résumé out of curiosity. I had been both a teacher and a salesman and felt I had a good general knowledge of

health. The position turned out to be that of pitchman for a chiropractor. The hiring was to set up a table in shopping malls and at health fairs and offer "health passes" (allegedly a hundred-dollar value!) to those who signed up for a free exam. The doc said I would make \$1,000 to \$1,300 a week, working only on weekends! He asked me to undergo the exam, apparently so that I would learn about what I'd be pitching. I agreed.



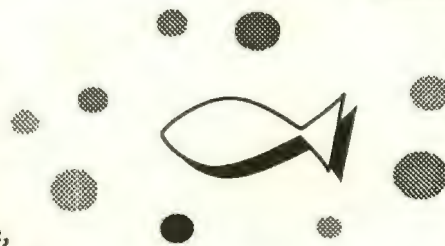
Fishy Chiropractors

A series of six interview/pre-employment propaganda sessions followed. It was a mind-boggling, almost mesmeric hustle. I stuck it out but suspected strongly that the chiropractor wanted me to become his patient, not his employee. Finally I called him a fraud to his face.

Through a large ad in the Yellow Pages, I contacted another "pious" chiropractor. I went to his office and requested advice on how to report the classified advertiser to the proper authorities. All this guy had to do was give me the address of the State Board of Chiropractic Examiners, but he hesitated and said he'd think about it and get back to me. Although his ad in the Yellow Pages featured a large Christian fish symbol, I was taken aback when he said he wanted to lead me in prayer! After we prayed, he told me he was a multilevel-marketing distributor and invited me to an "opportunity" meeting. He said he was forsaking chiropractic

because of experiences like the one I'd had with the classified advertiser. Yet he stated that the next time I had a cold, I could come by and he'd treat me without charge! Nine days later, I phoned him to ask again to whom should I complain about his "predecessor." He (the distributor) hadn't called me. And he has never answered my question. I told him (in a very "un-Christianlike" manner) that he was full of a certain waste product. He hung up.

High incomes and the title "doctor" lend too much credibility to both the medical and nonmedical pronouncements of physicians—the professionals to whom many chiropractors misrepresent themselves as



equivalent or superior. Chiropractors have lower incomes, but because all chiropractors are "doctors," and because most practicing chiropractors conduct themselves as providers of primary care, chiropractors in general have way too much popular credibility. Their pronouncements, as Magner makes clear, are

too often pseudomedical, too often ridiculous, and too often dangerous.

Mr. Paulin, an English teacher, lives in Huntington Beach, California, and hopes to start a Victims of Chiropractic group in Orange County this year.



Y.K. Rick & J. Raso

FORUM

Nutrition

Oxygenation Therapy: *Healing or Hot Air?*

Part II: Tales from the "O" Zone

Saul Green

One of the lesser come-ons on the cover of the January 1996 issue of *Penthouse*—"Ozone Therapy: Why Is Its Vast Healing Potential Being Kept Secret?"—approaches the height of presupposition. Nutritionist and "medical reporter" Gary Null, Ph.D., wrote the corresponding article, titled "Ozone: A Wide-Spectrum Healer." He states therein:

[W]hile ozone can be used to treat a wide spectrum of conditions [including AIDS, allergies, arthritis, cancer, candida infection, bladder infections, gastrointestinal disorders, hepatitis, herpes, multiple sclerosis, parasitic conditions, respiratory conditions, other sexually transmitted diseases, and "wound problems"], it can also be used prophylactically to combat harmful viruses, bacteria, and free radicals before degeneration and disease occur. Additionally, healthy people can use ozone to rejuvenate cells to stay younger longer.

Have conventional health professionals been ignoring—or, worse, suppressing—a miracle cure right under (or above) their noses?

Whither the Ozone?

Discovered in 1839, triatomic oxygen (O_3), better known as ozone, is formed when oxygen atoms from a diatomic oxygen molecule (O_2) split by an electric spark or ultraviolet light combine with O_2 . Because of the highly reactive free radicals it generates on decomposition, ozone is among the most powerful natural oxidants. These free radicals can destroy very many natural substances. The discovery of inert plastics enabled medical applications of ozone, and in the late 1930s German doctors began to use it in experiments on patients who had a variety of infections and wounds. Experimenters bubbled ozone gas directly into the bloodstream; withdrew, ozonated, and then replaced blood; applied ozone in enemas and douches; and pumped ozone into the rectum.

Except in cases of topical treatment, evaluation of the effects of ozone administration rested entirely on statements from patients.

When ozone reacts with the water in red blood cells, hydrogen peroxide is generated. This aqueous decomposition of ozone also produces germ-killing free radicals. Researchers who studied this germicidal activity in vitro found that killing microorganisms on open surfaces and in water requires a 2-hour exposure to 1200 ppm (parts per million) ozone.¹ Medical (pure, concentrated) ozone must be prepared on-site because, at room temperature, it has a "half-life" of only 45 minutes under optimal conditions.

Ozone and HIV

Human immunodeficiency virus (HIV, formerly called HTLV-III) is the retrovirus that causes AIDS. Retroviruses are viruses that contain RNA and produce an enzyme wherewith viral DNA originates from the RNA. Many produce tumors. There are two strains of HIV: HIV-1 and HIV-2, which is rare in the United States. M.T.F. Carpendale, M.D., has stated that medical ozone can inactivate extracellular HIV-1 in certain tissue-culture fluids and can inhibit the virus without detriment to tissue-culture cells. He has cited published allegations that ozone benefits AIDS patients but has added: "Further experimentation and development of methods for use of ozone as a treatment of ARC/AIDS patients are still needed."

Another proponent of ozone therapy against AIDS is writer Ed McCabe,² In testimony before Senator Tom Harkin's Subcommittee of the U.S. Senate Appropriations Committee in 1993,³ he stated that 644 German ozone therapists had "successfully" treated 384,775 patients with 5,579,238 doses of ozone "with no ill effects," and that thousands of published medical papers contained proof of ozone's effectiveness in vivo. McCabe further asserted: "Numerous U.S. physicians have converted hundreds of AIDS patients from HIV seropositive to HIV seronegative status using ozone." And he's

said that the "medical establishment" is ignoring this "help...available to AIDS patients right now."

Is ozone an effective anti-HIV medicine? In 1991, Wells and associates¹ reported that gaseous ozone inactivated HIV-1 in a culture medium from which all cells had been removed. Using increasing concentrations, they showed that a 1200-ppm dose delivered into the solution for two hours reduced the number of infectious viruses by about 10¹¹ and detectable virions (complete virus particles) by about 85 percent. However, the authors also reported a significant reduction in infectivity after exposure of the virus to a flow of nitrogen alone. The protein and plasma in the culture medium also affected the rate and degree of inactivation of HIV-1 by ozone. The researchers concluded that, while ozone had utility in decontaminating commercial blood products, far more extensive analysis of HIV-1's life cycle was necessary to define ozone's usefulness as an *in vivo* anti-retroviral agent. One of the researchers, Poiesz, wrote in August 1995: "No further *in vitro* work has been done and to my knowledge no *in vivo* work has been done."⁴

When Carpendale and Freeberg⁵ studied the effect of ozone at 4 ppm on HIV-1 suspensions *in vitro*, they found that the serous components of the culture medium degraded the ozone rapidly. They theorized that "unknown" ozone reaction products caused the (alleged) inactivation of viruses. The cellular effects of some ozonides (reaction products of ozone and fatty acids) mimic those of ozone. But Carpendale has never reported on the effects of ozonides on HIV in suspension.

Autohemotherapy

Autohemotherapy involves drawing blood from a patient, ozonating it, and returning it to the patient. Ozone has been used to treat infections for nearly fifty years. Mostly, treatments were based on impressions from clinical anecdotes conveyed by German periodicals: newspapers, popular magazines, and proponent newsletters.

When AIDS became pandemic in the 1980s, the number of patients aware of autohemotherapy rocketed. Organizations sprang up and promoted the medical use of ozone at international meetings. Most papers presented at these meetings referred to the *in vitro* germicidal activity of ozone at high concentrations. No convincing evidence was presented that autohemotherapy (with ozone concentrations ranging from 0.1 to 5.0 ppm) had an anti-HIV effect in AIDS patients.

In 1991, Garber and associates⁶ carried out the first well-controlled clinical study of autohemotherapy for AIDS. They first tested for safety and found no toxicity after 12 weeks of treatment. In the trial that followed, AIDS patients were entered into a randomized, placebo-controlled, double-blind program designed to enable comparison and evaluation of the effects of unprocessed and ozonated blood infused over eight weeks. All the subjects had CD4 (T4) cell counts of 200 to 400 per microliter of blood. (A microliter of blood normally contains 1,000 to 1,300 CD4 cells,

the primary "targets" of HIV. Also called helper cells, CD4 cells are a type of T [thymus-derived] lymphocyte.)

This trial showed that the infusion of patients' ozonated blood had no significant hematologic, biochemical, or clinical toxicologic effects in comparison with the controls. Furthermore, the investigators found that autohemotherapy had not altered CD4 cell counts or the levels of beta-2 macroglobulin, gamma interferon, interleukin-2, neopterin, and the HIV antigen p-24 (the "p" stands for "protein"). They concluded that autohemotherapy does not enhance immune response or reduce the p-24 antigen (an HIV marker) in HIV-infected patients. Independent investigators⁷ have replicated these results.

In May 1995, the twelfth World Congress of the International Ozone Association convened in Lille, France. Of the 42 papers presented, none was presented by an American and none addressed the treatment of AIDS with autohemotherapy. In a letter to me dated August 30, 1995, one of the organizers of the meeting, Prof. V. Bocci, wrote:

My position is based on theoretical grounds that ozone autohemotherapy may be useful only because there is no valid alternative. From a practical point of view I have great difficulty organizing clinical trials. I have frequently expressed my deep concern over the irresponsible, uncontrolled and unscrupulous information that is being spread around. You must understand that I am not responsible for what is being done or said by people in the U.S. Personally, my interest is in investigating whether properly performed autohemotherapy can be useful for the treatment of chronic viral diseases and other pathologies. As of this time there is no evidence of its validity.

Do CD4 cell counts have prognostic significance in determining whether autohemotherapy is effective? Upon HIV-1 infection, CD4 cells migrate to and infect lymphoid organs. This infection depletes CD4 cells, decreases their functionality, and, eventually, causes dysfunction of the immune system. The consequence is a high risk of opportunistic infections. The utility of CD4 cell counts for evaluating medicines administered to HIV-positive persons is questionable, because of the lack of standardization in: the frequency of the count, the timing thereof, and the intervals between counts. Moreover, the relationship between the numbers of CD4 cells in peripheral blood and their immune activity appears weak. This raises the possibility that immune system dysfunction precedes detection of changes in levels of CD4 cells.

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In a 1991 review of clinical histories of AIDS patients treated with ozone, H.S. Füessl, a leading German AIDS specialist, stated:⁸

After observing ozone-treated AIDS patients for long periods of time, we noted that patients who had just started on the ozone therapy showed some increases in CD4 cell counts. But a few weeks later their CD4 cell counts not only returned to their original low levels but in many cases went lower as the clinical picture clearly worsened. Two patients died before our eyes from opportunistic infections soon after beginning the ozone therapy. Those of us who treat HIV-infected patients on a daily basis recognize that monitoring the changes of the CD4 cell counts over a short period of time does not accurately reflect the effect of the treatment or the prognosis of the patient. After following a number of AIDS patients that were receiving ozone therapy, I recognized that increases in the CD4 cell counts could occur in any patient, at any time. But it did not mean that human immunodeficiency viruses were being killed or that the infection was being arrested. In spite of this knowledge, CD4 cell counts are still the primary diagnostic and prognostic tools used by ozone therapists. [my translation from the German]

Autohemotherapy proponents continually refer to the widespread use of this treatment in Germany, implying that it is sanctioned by the German medical establishment. Dr. Barbara Burkhard of the Medical Office of Patients' Insurance-Bavaria (Munich, Germany) wrote:⁹

Ozone therapy is not approved by the medical establishment in our country. The National Health Insurance (Gesetzliche Krankenversicherung) is not allowed to pay for it. In the book of laws on this subject (Sozial Gesetzbuch V), the obligations for insurance institutions are fixed. They are only required to pay for methods which are in accordance with generally accepted medical knowledge and which have made proven contributions in medicine. Doctors who have contracts with health insurance companies only get reimbursement for treatments that are approved by the "Bundesausschuss der Arzt und Krankenkassen." This committee is governed by social insurance regulations and issues the rules for

diagnostic and therapeutic medical methods. In an Appendix to their book of rules, methods not approved are listed. Ozone therapy is number 3 on that list.

Where's the Beef?

A mid-August 1995 search of the Medline, Health, AIDSline and Cancerlit databases back to 1966 generated references to more than a hundred papers citing adverse effects of ozone or ozone reaction products on humans or experimental animals. The search did not generate any references to papers in peer-reviewed medical journals that reported beneficial effects of ozone as a treatment for viral infections.

The claim that autohemotherapy can cure AIDS is being disseminated by people with more skill in advertising than in science or medicine. For example, Ed McCabe (see above), in testimony before Senator Harkin's Subcommittee in 1993, did not: (a) define "successfully treated"; (b) identify any of the "thousands of medical papers" he said provided evidence of autohemotherapy's effectiveness; (c) name the U.S. physicians he said had accomplished seroconversion in hundreds of AIDS patients; (d) state how, when or where he had interviewed the 644 German ozone therapists who had "successfully treated" the 384,775 patients with 5,579,238 ozone treatments; or (e) say when and from whom he had obtained the patients' medical records, or what evidence he'd seen in those charts that autohemotherapy was clinically effective and safe.

The Bottom Line

Not letting facts interfere with marketing, promoters of oxygenation therapy follow the line that putting oxygen-generating substances into the body will cure disease. But alternativist claims for oxygenation therapy are on shaky or nonexistent ground. Scientific evidence that autohemotherapy benefits HIV-infected persons does not exist.

NF contributing editor Saul Green, Ph.D., is a biochemist who conducted cancer research at Memorial Sloan-Kettering Cancer Center for 23 years. He is president of ZOL Consultants, Inc., in New York City, and a board member of the National Council Against Health Fraud.



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- ⁹ B. Burkhard, letter to Saul Green dated May 23, 1995.

BOOK REVIEW

Title: *Chiropractic: The Victim's Perspective* (1995)

Author: George Magner (edited by Stephen Barrett)

Publisher: Prometheus Books, Amherst, New York

Price: \$24.95 hardcover

Reviewed by: Ralph C. Cinque

This is an important and timely book that especially should be read by anyone who is either receiving or contemplating receiving chiropractic treatment. Magner is a retired agricultural researcher who, in the late '80s, visited an "upper cervical" chiropractor because of lower-back pain. After his sixth cervical "adjustment," he experienced new pains in his neck and right shoulder and ringing in his ears (tinnitus). Over the next five months, Magner received treatment from three other chiropractors, his tinnitus worsened, and he developed numbness and tingling in his left foot. Apparently, he still had these problems when this book was completed in 1995. Magner is also the founder of Victims of Chiropractic, a support and information network concerned with chiropractic's hazards.

Things that Go Bump in the Night?

After relating the nightmare of his own experience as a chiropractic patient, Magner summarizes the stories of 20 other chiropractic victims. For most of them, the consequences of chiropractic treatment—including stroke, paralysis, coma, and death—were graver than Magner's problems. Reading that section reminded me of something more frightening: a study published by the Australian Chiropractic Association in the late 1980s. It detailed over 100 cases of stroke, paralysis, coma, and other serious problems that had resulted from chiropractic "adjustments."

Magner provides a rather lively history of the founding of chiropractic at the turn of the century by D.D. Palmer, an itinerant "magnetic healer" in Iowa. Chiropractic has been mired in conflict and melodrama

from its very beginnings. As every first-semester chiropractic student knows, the first chiropractic patient was Harvey Lillard. Supposedly, Lillard was "deaf" but recovered his ability to "hear as before" by receiving the premier chiropractic adjustment from D.D. Palmer. Although it often takes weeks and months for chiropractors to resolve common back complaints in their patients, "The Founder" allegedly cured deafness in one treatment—by adjusting the fourth thoracic segment. This segment has absolutely nothing to do with hearing, but learned-sounding chiropractors have expounded how sympathetic nerve reflexes could have traveled up the cervical chain ganglia affecting the circulation to the ear and thereby restored hearing. I call this *chirobabble*. In the last hundred years, many thousands of chiropractic patients must have had some degree of hearing impairment. The number of incontrovertible cures should have famed chiropractic as a treatment for auditory problems. Another question leaps from the Lillard case: How could a single "adjustment" have quickly and safely corrected a joint displacement that had persisted for 17 years? Magner quotes Samuel Homola, D.C.:

A displacement in the spine severe enough to cause a "bump" on the back [as described by Palmer] would, of necessity, have to be a rather severe dislocation and, consequently, a quite crippling injury. In addition, adhesions usually form around displaced joints after a matter of weeks, and, over a period of time, muscles, ligaments, and other tissues shorten to accommodate changes in the joints. Yet, Palmer was supposed to have made the correction in one treatment!

I cite this because it reminds me of how often chiropractors have told me that what they really do is "break adhesions." Adhesions are made of tough, fibrous connective tissue, and I dread to think of how much force would be necessary to "break" them.

“Subluxated” Thinking

Chapter 3 deals with the elusive chiropractic “subluxation.” Magner quotes many definitions of “subluxation” from various chiropractic sources. The more definitions one reads, the funnier they sound. Here’s my favorite, which I believe the American Chiropractic Association (ACA) issued in the 1980s:

Subluxation is an aberrant relationship between two adjacent articular [joint] structures that may have functional or pathological sequelae [consequences], causing an alteration in the bio-mechanical and/or neurophysiological reflections of those articular structures, their proximal structures, and/or other body systems that may be directly or indirectly affected by them.

I don’t know if it’s possible to cram more gobbledegook into one sentence.

Magner cites Yale anatomist Edmund S. Crelin’s study of spinal movement in the 1970s, which showed that nerve impingement does not occur in the spine without major dislocation or fracture. I was then a student at Western States Chiropractic College, and I remember the furor that Crelin’s study caused within the chiropractic community. The ACA president said that the study was meaningless because it was done on cadavers. Magner quotes Crelin’s response:

In a living person there is a reflex response by the powerful spinal muscles to fight or resist any forces that would subluxe a vertebra to the degree that it and/or spinal nerves could be damaged....Thus, if the impingement on the nerves could not happen in a dead body, it definitely could not happen in a living one.

This response, which makes perfect sense, did not reach me at chiropractic college.

Love Is Blind?

Reading Chapter 5, “Questionable Marketing Tactics,” reminded me of an experience I had several years ago during a continuing-education seminar for license renewal. Ostensibly, the subject was “Chiropractic Pediatrics,” but the seminar actually dealt with how to steer parents into subjecting their children to “adjustments.” The instructor presented a “patient education” video he had made, in which he initiates his young son into chiropractic. He shows the boy a chart of the nervous system, lays him on a table, and gently performs several perfunctory-looking spinal “adjustments.” Then he stands the boy on the table and asks him: “Do you know why I gave you those chiropractic adjustments, Son?”

“Why, Dad?” the boy inquires.

“Because I love you.”

“I love you, too, Dad.”

Then the chiropractor picks his son up, hugs him, and, eyes closed, starts dancing around the room with him. In the soundtrack, Michael Jackson sings about saving children.

At this point, I was queasy, but the roomful of chiropractors burst into applause. Then the instructor stepped up to the mike and said: “Are parents going to eat this up, or what?” Copies of his video were for sale at the end of the program and, believe me, sales were brisk.

Chapter 6 deals with chiropractic “preventive maintenance”—treating well, nonsymptomatic persons on a regular basis. I receive two chiropractic newspapers (only because they are sent to me free), and I can tell you that “maintenance care” is very big. Chiropractic is less about solving particular spinal problems with manipulation than about conditioning people to the “adjustment” experience and routinizing them to interconnect “adjustments” and how they feel. In my observation, people who submit to frequent spinal “adjustments” eventually start waking up every morning with the thought, “Is my neck in or out?”

Once when I was a practicing chiropractor, a young man visited me who said he’d gone to 28 chiropractors in the previous month, searching for the perfect adjustment. I asked him: “Did any of the chiropractors, upon finding out how many others you had seen previously in such a short time, suggest that what you really needed was not another adjustment, but rather, psychological help to deal with your obsession?” He answered no. Every single one of them had stepped up to the plate and taken another crack at this kid’s neck. I assure you he did not receive an “adjustment” from me.

A Fool’s Paradise

The chapter titled “Dubious Diagnostic and Therapeutic Techniques” only scratches the surface of chiropractic’s methodological madness. There are so many different chiropractic techniques—many more than Magner lists—all allegedly comprehensive—that I honestly don’t know how chiropractors decide which ones to learn and use. I have often thought that the best way to reveal chiropractic for what it is would be to send someone undercover to at least a dozen chiropractors and record all of their responses. This has been done several times, and Magner relates three undercover investigations in which the patients were children. The chiropractic “diagnoses” were akin to what one would expect from “psychic” advisors. Magner quotes Prof. Craig Nelson, D.C. of Northwestern College of Chiropractic:

[C]hiropractic supports dozens of different techniques....The various chiropractic techniques....[have] different theoretical bases.... [M]any...are truly distinct and incompatible with each other....There is no comparable circumstance in any other health care profession.

Magner should have added that in no other healthcare profession do we find so much personality cultism. Barge, Dejarnette, Epstein, Fefferi, Fuhr, Gonstead, Goodheart, Merick, Morter, Nimmo, Pettibone, Pierce, Stillwagon, Thompson, Toftness, Van Rump—these names, and many others, are familiar to every chiropractor in America. They are the names of chiropractic gurus with devoted followings. The word “chiropractic” has become nothing more than a convenient slogan used by competing factions of a manual-therapy subculture with different and conflicting theoretical bases.

This brings me to a very important point about chiropractic research. Magner does a good job picking apart the Meade study, the RAND study, and the Manga report, all of which, according to most chiropractors, proved the effectiveness and superiority of chiropractic treatment. However, Magner did not make the following point clearly enough. Considering what a theoretic mess chiropractic is, and how much chiropractors contradict each other in what they say and do, what good is there in trying to measure chiropractic effects? Here’s an analogy: Imagine a study in which physicians prescribe whatever medicines they deem appropriate without identifying their prescriptions. Because of the plethora of medicines available and the lack of medicine identification, all this study could possibly demonstrate is the subjective effect of the belief that one is taking medicine—the placebo effect. Unless one precisely identifies and limits the object of evaluation, a study has no meaning. But this is exactly the case with chiropractic research. In most instances, no attempt is made to define or limit the “adjustive” and ancillary techniques to be evaluated. No one looks into what the chiropractors actually did, so long as they did something that was called chiropractic. The results, therefore, are absolutely meaningless, yet chiropractors shout and jump for joy at their “vindication.” It’s a fool’s paradise.

The chapter titled “Nutrition-Related Nonsense” brought to mind another experience I had at chiropractic college. An instructor who loved “muscle testing” à la applied kinesiology [see NF 11:47, 1994] claimed not only that he could determine thereby whether a person needed a particular vitamin, but also that he could find out exactly how much the person needed and which brand would be best. A friend of mine and I played a trick on him one day. We emptied a vitamin capsule and filled it with plain sucrose. We produced it during class and told the professor it was vitamin C. Through “muscle testing,” he seemingly determined that a particular student was deficient in table sugar. The “muscle tester” wasn’t happy when he learned of the prank but of course had an explanation. Chiropractors always do. **Editor’s note:** With tongue in cheek, I’ll offer a “spirited” alternativist explanation: The capsule contained an infinitesimal quantity of vitamin C or just the “energy” of vitamin C. This increased muscle strength, indicating need of a homeopathic “dose” of vitamin C to treat hypervitaminosis C.—J.R.]

Just What Chiropractors Need—Another Fixation?

I think the book’s only major shortcoming is that it does not adequately address the shift underway within chiropractic toward motion palpation and the fixation concept. Many chiropractors, realizing the bankruptcy of the “bone-out-of-place,” “kink-in-the-nerve” dogma, have abandoned the classical subluxation theory in favor of the “motion paradigm.” According to this up-and-coming chiropractic theory, the bone is not “out of place” but, rather, stuck in place, unable to move throughout its normal range of motion and thus in need of mobilization. Although some chiropractors are fighting it kicking and screaming, this theory is being hailed as the profession’s ticket into the realm of science. Also, the belief that this is the right direction for chiropractic to take seems to be a growing within medicine.

I, however, think that this transition is fraught with danger—to patients. It’s a piece of cake for chiropractors to come up with misalignments, but conjuring fixations is a snap. Usually, fixations are relative. If I palpate a segment and turn the patient to the right and to the left, one side may move significantly less than the other, and I can pronounce the less mobile side “fixated.” But the body is not structurally symmetrical, and there is no reason to expect it to be functionally symmetrical. Another way to find “fixations” is to “motion palpate” several successive vertebral segments. One could declare that the segment with the shortest range of motion is fixated. But one of them had to have the least mobility.

Finding chiropractic “fixations” is even more arbitrary than finding chiropractic “subluxations.” Typically, it hinges on the intuitions, the feelings, of the chiropractor, and it might surprise you to know just how different those feelings can be. Magner did point out that “most studies have demonstrated marginal-to-poor interexaminer reliability” for motion palpation, but I would like to give a specific example. Several years ago, the *Journal of Manipulative and Physiological Therapeutics (JMPT)*, a chiropractic publication out of National College, reported on a study of the reliability of cervical motion palpation. The report stated: “The palpatory task consisted of determining whether end-range joint resistance on lateral flexion was greater on one side of a given cervical segment when compared to that of the contralateral joint.” In other words, the test involved just one segment and the principal question was unambiguous: Did it bend better to the right or to the left? The main finding of the study was that “interexaminer agreement rates with respect to the side of greatest fixation were not found to be significantly different from that expected by chance alone.” In other words, fixation-finding is a crap shoot. The chiropractors could not agree on whether one segment moved better to the right or to the left. In light of this, what chance is there of concordance if the field of observation is expanded to include the whole spine or the entire body? Other studies

reported in *JMPT* and the *American Journal of Chiropractic Medicine* have demonstrated the interexaminer unreliability of motion palpation. Yet, "life is motion" is chiropractic's new battle cry.

There is another problem with the fixation concept: It is difficult to drum up dire consequences from it. After all, how harmful can a fixation be? As far as I know, no one has ever died from one. Restricted motion may be the only significant consequence of a joint fixation. What is the real correlation between joint fixations and symptoms? In other words, do people with joint fixations tend to have more symptoms (such as pain) than those whose joints are more mobile? To my knowledge, no one has ever tried to answer that question scientifically. Until such a study is done, it is only an assumption that joint fixations are the cause of anyone's pain. Inadequacy of joint mobility can be troublesome, but whether high-velocity thrusting is the best way to rectify it is highly questionable.

Rotten Apple

The last chapter of the book deals with how to reform chiropractic. Wagner advocates the establishment of chiropractic training programs within universities that

teach medicine and dentistry. He proposes a new kind of degree, "Doctor of Chiropractic Medicine," to represent the science-oriented chiropractors. He states: (a) that standards should be established for the upgrading of D.C. degrees to D.C.M. degrees; (b) that D.C.M.s "should be permitted to utilize prescription drugs appropriate to the scope of their practices"; and (c) that the plan of Western States Chiropractic College (my alma mater) to start a D.C.M. program "appears to be a step in the right direction." I think that Wagner is being a Pollyanna here. I don't think there is any way to divorce chiropractic from its historical and philosophical roots. You can't remove subluxation theory and inanities such as "Innate Intelligence" from chiropractic and still call it chiropractic. Spinal manipulation has limited therapeutic utility in healthcare and can be taught and administered in nonchiropractic settings.

The chiropractic apple is rotten to the core with dogmatism and cultism. I say chuck it.

Dr. Cinque, a nonpracticing chiropractor, directs Dr. Cinque's Health Retreat ("A Residential Facility for Fasting and Hygienic [Natural Hygiene] Care"), in Buda, Texas. He is the author of *Quit For Good: How to Break a Bad Habit* (Monarch Books of Canada, 1994) and a founding member and past president of the International Association of Hygienic Physicians.

Healthcare Esoterica

Preesenting... the 11th installment of descriptions of mystical and/or supernaturalistic alternativist methods.—*J.R.*



Biodynamic psychology (Biodynamic therapy): "Therapeutic approach" developed by Gerda Boyesen, a clinical psychologist and physiotherapist of Norwegian birth.¹ It is related to bioenergetics.^{*} One of its premises is that, when bodily fluids do not circulate efficiently or tissues are not "properly cleansed," "emotional tensions or blockages" show up and prevent "bioenergy" from vitalizing the body.

Bowen technique (Bowen therapeutic technique, Bowen therapy): Form of bodywork^{*} and vibrational healing² [see NF 12: 31, 1995] originated by Australian engineer Tom Bowen (deceased) in the early 1950s,^{3, 4, 5} developed by Oswald Rentsch (an osteopath²) and Elaine Rentsch (who holds a diploma in Bach flower therapy² [see NF 12:26, 1995]) in Australia, and introduced in the United States in 1990.² Its theory affirms the concepts of *chi* ("universal life energy")⁷ and human "energy vortexes."²



Dō-In (Dao In, Tao-in, Taoist yoga, Taoist hatha yoga): Ancient system of stretching, bodily postures, and movements, comparable to hatha yoga.⁸ Michio Kushi⁸ introduced Do-In in the United States in 1968.⁹ Its theory posits "Chi energy flow"⁸ and the "energy meridians" of acupuncture⁸ and shiatsu.⁹ Although Do-In is a discipline of "self-healing,"⁸ its "ultimate goal" is "spiritual harmony with the universe."⁹

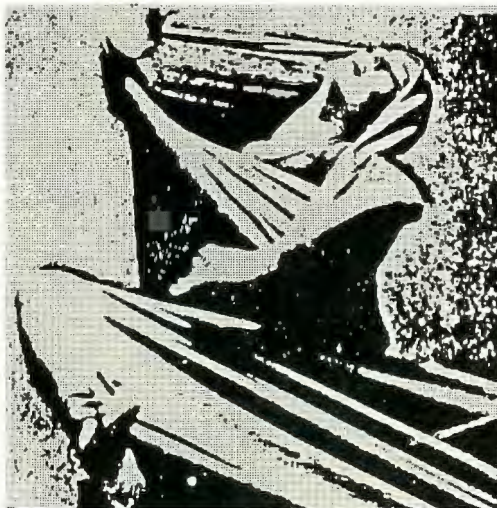
Gnosis: "The enduring philosophy of the universe....as old as the world itself," according to the Gnostic Association of Anthropology and Scientific Studies (AGEACAC), a bilingual (Spanish/English) organization whose National Center is in Elmhurst, New York.¹⁰ AGEACAC holds that humans cannot develop their faculties if they lose "sexual energy" in any way (e.g., masturbation), that religious principles are eternal and universal truths, that there are no false religions, and that "Cosmic Religion" vibrates in every atom. Gnosis supposedly permits the "harmonious" development of "infinite human possibilities."

Inner Peace Facilitation (inner peace counseling): Philosophy of spiritual counseling marked by the goal of increasing clients' awareness of "inner spaciousness."¹¹ An "inner peace facilitator" is anyone committed to discovering and "melting" obstacles to "the natural radiance and transforming power of the spirit dwelling within."

Nwoti (Cherokee herbal medicine): Native American form of botanical "healing" that purportedly treats all human components: emotional, physical, societal, and spiritual.¹²

Oriental medicine: In general, the use of acupuncture,⁸ "Chinese herbal combinations," diet, and "emotional changes" with the purported aim of eliminating problems with meridians ("invisible energy pathways").¹³

Psychography: Purportedly, a unique, nonhypnotic, "altered-state" technique, a form of "regression therapy" developed by Rev. Dr. Franklin Loehr (deceased).¹⁴ Psychography supposedly "allows" one to "look back" between one's lives and over one's past, present, and future lives. One of its premises is that each human has an omniscient inner "part" that can help to bring healing to souls.



Rolfing Movement Integration (RMI): Spinoff of Rolfing®¹⁵ whose groundwork was laid in the 1960s and 1970s by rolfer Dorothy Nolte and Judith Aston, the dancer who developed Aston-Patterning®¹⁵ and Aston Movement

[see NF 13:6, 1996].¹⁵ RMI somewhat resembles the Alexander Technique®¹⁵ [see NF 11:57, 1994]; both involve a "teacher" who gives tactile and oral guidance to a "student" (in the Alexander Technique, also called a pupil). An alleged effect of RMI is the experience of a "transformation of energy"—the release (very possibly "chaotic") of "energy" the body stored.



Spiritual Counseling: As taught by the National Interfaith Seminary, in St. Paul, Minnesota, a ministerial approach that apparently embraces chakra therapy,¹⁶ inner child work,¹⁶ and "Totem Psychology."¹⁶

Tai Chi-Chi Kung (taiji qigong): Alleged "path to self mastery" that consists mainly of *chi kung*¹⁷ exercises and tai chi.¹⁷ Its purported key is dynamic balance of "the mind and body energy." Tai Chi-Chi Kung includes "Chi Kung Meridian exercises," "Chi meditation," and "Five Element Energy Balancing exercises." The *chi kung* exercises supposedly release very potent "healing energy" in the body for dramatic health benefits.



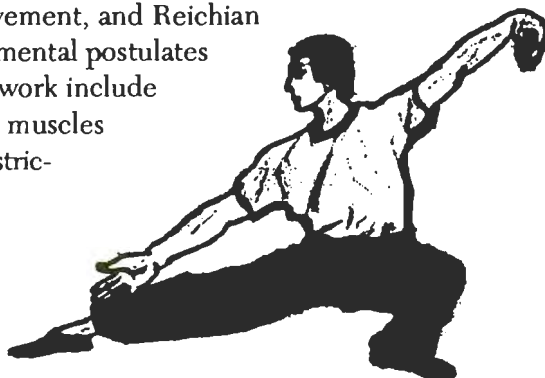
Thai Massage-Reflex Yoga with Metta Touch: Purported powerful synthesis of acupressure massage, reflexology [see NF 12: 61-64, 1995], and yoga¹⁸ (see below).¹⁸ Allegedly, it stimulates

meridians ("energy lines"), vitalizes bodies, and clears "energy blocks" that cause fatigue and illness. The Thai word "metta" means "loving kindness."



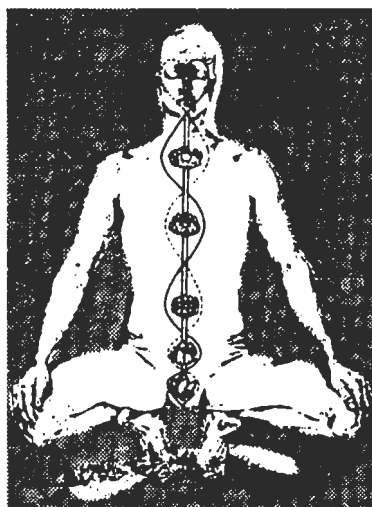
Transformation-oriented bodywork (transformational bodywork):

Philosophy of bodywork* involved in many forms of "energetic balancing," psychotherapy, spiritual counseling, and touch therapy [see NF 11:51, 1994].¹¹ Transformation-oriented bodywork descends from Bioenergetic Analysis (also called bioenergetics¹⁹), massage, the personal/spiritual growth movement, and Reichian therapy.* Apparently, the fundamental postulates of transformation-oriented bodywork include the following. (1) Constricted muscles block "energy" in the body. (2) Constriction shows up as pettiness. (3) The "Highest Ideal" lies in "the realm of Divinity—the Source from which we and our planet derive our life and meaning."

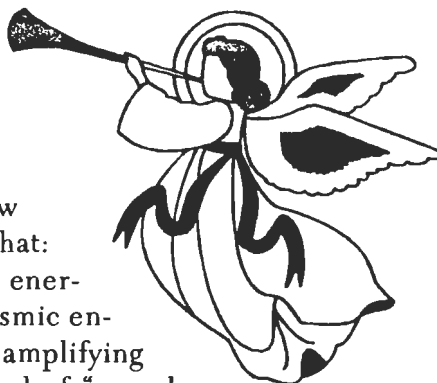


Windows to the Sky acupressure (Window to the Sky acupressure):

Apparently, a form of acupressure²⁰ whose focus is the neck. The term "windows to the sky" refers to most of the "acupressure points" thereon.²¹



Yoga: Hodgepodge of dozens of religious and quasi-religious systems and methods, many of which are health-related. The word "yoga" comes from a Sanskrit term that literally means "yoke" and, in Hinduism [see NF 11:34–37, 1994], implies harnessing oneself to God.²² However, contextually or with a qualifier (e.g., *chakra*, *Chinese*, *polarity*, *Taoist*, or *Tibetan*), the word "yoga" often seems to mean simply "religious or quasi-religious practice or group of practices." For instance, according to yoga teacher Mary Mickelson of Long Island City, New York, yoga is a relaxation method that: increases vitality by oxygenating and energizing nervous plexuses, brings in "cosmic energy," improves sexual response by amplifying "erotic energy," and causes the control of "sexual energy" for "psychomental" and spiritual purposes.²³



*See "Alternative" Healthcare: A Comprehensive Guide (Prometheus Books, 1994).

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- ⁵ Leaflet © Bowtech Pty. Ltd., Australia; part of mailing postmarked March 8, 1996, from Dr. Jenefer Scripps Huntoon, in Seattle, Washington.
- ⁶ Display, *Natural Health*, Vol. 26, No. 2, March/April 1996, p. 180.
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- ¹⁰ Leaflet from the National Center of the Gnostic Association of Anthropology and Scientific Studies, in Elmhurst, New York (Queens, New York City); found in display case at the BQE Racquetball and Fitness Complex, Woodside, New York, on February 28, 1996.

Readers' Forum

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- 13 A. Fox and B. Fox. *The Healthy Prostate: A Doctor's Comprehensive Program for Preventing and Treating Common Problems*. New York: John Wiley & Sons, Inc., 1996.
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- 15 M. Bond. *Rolfing Movement Integration: A Self-help Approach to Balancing the Body*. Rochester, Vt.: Healing Arts Press, 1993.
- 16 Leaflet postmarked January 29, 1996, from the National Interfaith Seminary, in St. Paul, Minnesota.
- 17 Leaflet from the Tai Chi Chi Kung Studio, in Bayside, New York; on display at the BQE Racquetball and Fitness Complex, Woodside, New York, on February 24, 1996.
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- 21 Listing, Winter/Spring 1996 course catalog of the New York Open Center (Manhattan), p. 69.
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Editor's note: Testimonials are the lifeblood of alternative healthcare. The word "testimonial" commonly refers to an individual's commendatory statement of facts and/or opinions. Antitestimonials, or reverse testimonials, differ from testimonials only in that their design is not to foster confidence in a person or thing but to provoke caution. An example is the "Supplement Junkie" section in Chapter 1 of my 1993 book *Mystical Diets*. Testimonials and antitestimonials share a fatal flaw: Despite appearances, they cannot establish causation. Indeed, they tend to blur causation. Nevertheless, often a single testimonial or antitestimonial, upbeat or lurid, can outperform a thousand icily scientific papers in changing behavior.

I present the following antitestimonial as a human-interest story and food for thought, not as a blanket condemnation of veganism.—J.R.

Quicksand

Dear Mr. Raso:

I've been a subscriber to NUTRITION FORUM for many years and applaud all you are doing to throw light on today's problems. I am particularly pleased that you are exposing pseudocredentials [e.g., in the March/April 1995, July/August 1995, and January/February 1996 issues of *NF*].

Not long ago in *NF*, you requested written accounts of personal experiences that might be of interest to your readers. Hence I submit the following.

Fifty-four years ago, struggling to shake off poor health, I turned to veganism—a diet of plant foods only, with the promise of excellent health. Little did I know that horrors would result.

How could I have credited dietary advice inconsistent with what I had learned studying biochemistry as a chemistry major at Cornell University? My trust arose from desperation: Two years after the birth of my second son, I suffered from constant fatigue and an endless cold, but my family physician couldn't get to the bottom of my problems. Physical exercise only exhausted me, and practicing relaxation improved my condition only temporarily.

I called a friend, a cellist with the Cincinnati Symphony, who seemed somewhat knowledgeable about food. My husband and I didn't approve of his vegetarian philosophy, but I hadn't tried diet and was ready for a change. He referred me to a chiropractor. Following the chiropractor's instructions, I enthusiastically ate lots of fresh and dried fruits, vegetables, and nuts. I also ate whole wheat bread, but not much, for in 1942 it was hard to find.

The change in diet worked wonderfully well at first. I had needed to lose weight, and did. Friends and acquaintances raved about how much better I looked. What was I to think—except that I'd made an important discovery? I devoured vegetarian newspapers and numerous books like Arnold Ehret's *Mucusless Diet Healing System* [see *NF* 12:28, 1995]. Many such books are still in print.

However, even after a couple of years, I hadn't attained good health. The chiropractor told me he knew of women in poor health who

had improved after becoming pregnant. "They lost a lot of blood, and that cleansed their systems," he said.

That was all I needed to hear. Having had two boys, I wanted a girl.

In a year on a vegan diet, my children had not grown; so I began serving them and my husband eggs, milk, and cheese. I continued to consume mostly fruits (fresh and dried) and vegetables (raw and steamed). Occasionally, and sparingly, I also ate homemade desserts: bread pudding, cookies, gingerbread, ice cream, and sponge cake. Otherwise, I avoided consuming foods of animal origin. About five months after I became pregnant, I resolved to follow an "all raw" diet. For more than six weeks, I consumed only fresh fruits, juices, raw vegetables, and nuts. Then I included cooked vegetables and whole grains in my diet, but I often abstained from eating them (whenever I felt I had a cold). Frequently, I ate only at night. I thought that fasting could cure anything. I gained only 15 pounds during my pregnancy. I was gaunt, always tired and cross, and often faint; my skin was flaky and my throat always sore.

I gave birth to our daughter at home, without anesthesia. I used my knowledge of relaxation techniques to sail through labor. The infant weighed 5 $\frac{3}{4}$ lbs and seemed fine. The doctor remarked that she was "clean."

I maintained records and kept a diary. On the day of the birth, I consumed only grapefruit juice. The next day, I ate 7 oranges, 4 grapefruits, 2 peaches, a cantaloupe, bananas, and many almonds. Later, I ate in addition raw and steamed vegetables, other nuts, other fruits, and, occasionally, dark rye bread, not whole-grain, but the best we could find.

Six days after the birth of my daughter, my head hurt and I was woozy. Ten days later, I developed hives, which I'd never had. The itch was maddening, and I couldn't fall asleep until 4 o'clock the next morning. A body temperature of 100° F and breast pain shortly followed. Meanwhile I was trying to nurse the baby.

Poor health with flu-like symptoms persisted. Worse was to come. I was on a bus, taking my seven-year-old to a magic show, when I suddenly became frightened. This was the first of many crippling panic attacks over several years. They would happen without warning, even when I was lying on a couch.

I insisted on nursing the baby. Whenever I fell acutely ill, the chiropractor would tell me to give the baby fruit juices "If you give her milk, she'll have colds and sinus trouble all her life," he would say. He vehemently discouraged consumption of dairy products.

When my daughter was about ten months old, she developed a facial rash. She became steadily weaker and weighed only 11 pounds at 11 months. My health was so poor, I couldn't understand what was happening. Alarmed, I called a pediatrician, who

immediately put our child in the hospital. After five weeks, the baby hadn't gained much weight on an amino acid formula and drugs like phenobarbital. Over the phone, the doctor said she was dying. We decided that, if she was going to die, we wanted her home. It had been frustrating to see her only through glass walls. We could never touch her.

Our 13-month-old daughter returned from the hospital with a tremor over her entire body. With another pediatrician's help, we administered a formula of condensed milk plus vegetable broth. Improvement was slow, but eventually the tremor left every part of her body except her mouth. Later, it disappeared.

The child relearned all that a baby does. She turned over, sat up, and walked at 18 months. But she was five years old before she talked, and she never learned how to read or write.

Epileptic seizures began when she was two. She was an emotional wreck with vast fear. When something frightened her, she would bite her arm, breaking the skin; or her hands would fly to the neck of her dress and, no matter how tough the material, she would tear it to shreds. Whenever I picked her up from her slow-learner class, safety pins were keeping her dress on. If we picnicked in a park, she would bury her head and cry: "He's looking at me."

Finally, we knew we could not manage her at home. When she was 10, she left Cincinnati for an institute for retardates, in a black car apparently designed to hold criminals. She died at the institute during a seizure when she was 21.

After five years of veganism, I found a chiropractor with an M.D. degree. On my second visit, he came in waving a paper and said: "I don't know why you are alive. According to your tests, you should be dead. It must be your maternal instinct keeping you alive."

I didn't have to be told how poor my health was. On the trolley I took to his office, I had had an agonizing loss of breath and forced myself to count telephone poles to keep from crying out.

This doctor helped me get over my devotion to vegetarian ethics. He said many animals wouldn't have any life at all if they hadn't been raised for food.

I recovered on an unrestricted diet that included fresh fruits, vegetables, nuts, whole grains, meat, fish, chicken, eggs, dairy products, and organ meats such as liver, heart, and kidney. The vitamin B₁₂ in the organ meats undoubtedly helped banish my aberrations. Now, at the age of 82, I travel around the world and climb mountains 4,000 feet high.

A poor diet during pregnancy can cause many defects, including epilepsy and mental disturbances. Our daughter had severe malocclusion and a deficient chin, both due to a prenatal lack of calcium and protein.

Appropriate dietary supplementation and careful selection of foods for nutritional adequacy can make veganism safe and even helpful for many adults. But extremely little is said about its effects in pregnancy. I've spent the years since our tragedy trying to find out what went wrong. After age 40, I returned to college for another four years to study nutrition, and I became keenly aware of the influence of "never-say-die" nutritional folklores.

- **Protein.** In 1942 I heard that a handful of almonds contains all the protein one needs. Hardly. It would take at least 115 almonds to match the amount of protein in one "Whopper" hamburger. Potatoes, too, were supposed to furnish ample protein. But it would take ten 4-oz potatoes (providing about twice as many calories as the Whopper) to match the amount of protein in one Whopper.
- **Human history.** We were nomadic hunter-gatherers for tens of thousands of years. Our physiology hasn't had time to change.
- **Anatomy.** We are omnivorous. The length of our intestines is midway that of carnivores and that of herbivores. Twenty of our teeth are carnivorous, twelve herbivorous.
- **Vitamin B₁₂.** Recently I heard, as I had years ago, that to be strong, we should eat grass like a cow. This shows disregard for the ability of a cow to make its own B₁₂ in one of its stomachs. I have also heard claims that there is B₁₂ in algae and

fermented soy products. We know now that there are only analogs of B₁₂ in those foods [see NF 12:44, 1995]. Moreover, they can cause a B₁₂ deficiency.

- **Teeth.** I couldn't understand why I was losing teeth on a vegan diet. A disturbance of acid-base balance can destroy teeth. Excessive consumption of fruits and vegetables with an alkaline reaction can cause as much damage as overconsumption of acid-forming foods (e.g., fish, meat, and poultry).
- **Zinc.** This trace element is difficult to absorb from plant foods because of their phytate content. Time after time, animal experiments have shown that even a small deficiency of zinc in the diet of pregnant animals will produce birth defects such as clubfoot and cleft palate.

How many tragedies have silently resulted from vegetarian irrationalism?

Ruth F. Rosevear, L.D.
Cincinnati, Ohio

I spoke with *NF* scientific consultant John Dodes, D.D.S., regarding the dental effects of veganism. It is unlikely that a vegan diet would significantly change the pH of saliva. However, excessive consumption of acidic fruits, particularly those with high concentrations of acetic acid (e.g., oranges and grapefruits) can, under certain circumstances, cause dissolution of tooth enamel. Moreover, periodontal bone loss can result from adherence to very restricted diets deficient in protein.—J.R.

ARE YOU A GAME?

I had the pleasure of reading the prepublication version of *Chiropractic: The Victim's Perspective*, as a consultant. It is a powerful, comprehensive, amply illustrated indictment of a "healing" system I consider an abomination. Last January, I asked four very different professionals to review the book for *NF*: Dr. Cinque, an eminent Natural Hygienist who has described himself as a "chiropractic heretic" and nonreligionist; Don Paulin, a self-described chiropractic victim and an avowed Christian (see the previous issue of *NF* for his review); and two practicing chiropractors, one a prospective Catholic priest, the other a "nutritional consultant" and bodybuilder. Dr. Cinque and Mr. Paulin submitted their reviews in short

order. The practicing chiropractors acknowledged their review copies when I ran into them within a month of my request. The "nutritional consultant" said he didn't have time to write the review, but he implied that he would do so in two months. The priest-to-be said the book was interesting. On February 6, he asked to see an issue of *NF*, and I mailed two issues to him. The next day, he said he feared writing a review that might bring on violence against him, and he requested a sit-down, face-to-face collaboration with me.

I have not received reviews from the practicing chiropractors. Any chiropractor game for reviewing the book is welcome to contact me.—J.R.

FORUM

Nutrition

RASO'S LIST

Index to Mystical and Supernaturalistic Health-Related Methods

Below are references to descriptions published in NUTRITION FORUM, *"Alternative" Healthcare: A Comprehensive Guide* (AH), and *Mystical Diets: Paranormal, Spiritual, and Occult Nutrition Practices*. An asterisk follows the name of every method that is the subject of a chapter in each book. *Mystical Diets* is cited as "MD" only when the method is the subject of a chapter in that book only or not described in AH or NF. *"Alternative" Healthcare, Mystical Diets*, and all back issues of NF (\$6 per copy) are available from Prometheus Books (1-800-853-7545). Only photocopies are available from Prometheus for the first four issues of Volume 11 (pages 1-42). Readers may mail requests for original copies of these issues to Jack Raso.

- Aboukra—13:6, 1996
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- Breema—12:59, 1995
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- Network Spinal Analysis (Network, Network Chiropractic, Network Chiropractic spinal analysis)—11:61, 1994
- Neural therapy—11:49, 1994
- Neural Organization Technique (NOT)—AH
- Neuro-bioenergetic treatment—12:49, 1995
- New age shiatsu—AH
- N.I.A. technique—11:49, 1994
- Nichiren Buddhism (Nichirenism, Nichiren Shoshu [NS], Nichiren Shoshu Buddhism)—AH; 13:8, 1996
- Nine Gates Training Program—12:59, 1995
- Nine Star Ki—13:20, 1996
- Non-Contact Therapeutic Touch (NCTT)—below
- Norse magic—12:71, 1995
- Nsoromma body therapy—12:49, 1995
- Numbers Diet™ (Jean Simpson's Numbers Diet)—AH

- Numerology—AH
 Nutripathy—AH; MD; 4:57–61, 1987; 12:29, 1995
 Nutritional herbology—AH, MD
 Nutrition kinesiology (NK)—11:49, 1994
 Nvwoti (Cherokee herbal medicine)—13:32, 1996
- Ohashiatsu®—AH
 Oki-do (okido, okido way of living)—AH; 12:29, 1995
 Okinawan karate (Shorin Ryu karate)—12:30, 1995
 OMEGA—AH
 OMNI-FORCE—11:49, 1994
 One Brain™—11:49, 1994; 12:2–3, 1995
 Open Mind™ programming (Open Mind advanced programming)—11:61, 1994
 Optimum Health Balance—12:30, 1995
 Organic process therapy (OPT)—AH
 Organismic psychotherapy—AH
 Orgone therapy (medical orgonomy, orgonomic medicine therapy)—AH
 Oriental body and facial diagnosis—below
 Oriental massage (amma massage) [probably amma]—below
 Oriental medicine—13:32, 1996
 Oriental 7-Day Quick Weight-Off Diet—13:20, 1996
 Original Ingham Method™ (Ingham method, Ingham method of foot reflexology, Ingham technique)—AH; 12:30, 1995
 Orionic healing system—AH
 Ortho-Bionomy™ (OB)—AH; 12:21, 1995
 Osteokinetics®—11:61, 1994
- Panchakarma*—AH; 11:37, 1994
 Paneurhythmy—below
 Passion-for-life psychotherapy—11:61, 1994
 Past-life therapy (past life regression therapy [PLRT], past lives therapy, regression therapy, transformational therapy)—AH
 Pathwork—AH
 Pealeism (Norman Vincent Pealeism)—AH; 12:71, 1995
 P.E.E.R. (Primary Emotional Energy Recovery, P.E.E.R. counseling)—12:49, 1995
 Pendular diagnosis (radiesthetic diagnosis)—AH
 Pentecostal faith healing [not described by Jack Raso]
 Periosteal acupuncture—AH
 Personal prayer—AH
 Personal totem pole process—12:71, 1995
 Pesse Boyden System/Psychomotor (psychomotor therapy, Pesse system)—12:8, 1995
 Petitionary prayer—AH
 Phoenix rising yoga therapy—AH
 Phrenology (head-reading)—AH
 Phreno-mesmerism (phreno-magnetism, phrenopathy)—AH
 Physiognomy—AH
 Physio-Spiritual Etheric Body healingSM (PSEBSM)—below
 Pigeon remedy (pigeon therapy)—AH
 Planetary herbology (planetary herbalism)—11:49, 1994
 Plant alchemy (spagyrics)—AH
 Pleiadian lightwork—13:8, 1996
 Pointing therapy—11:49, 1994
- Polarity balancing (Polarity, polarity energy balancing, polarity energy balancing system, polarity energy healing, polarity system, polarity therapy, polarity wellness®)—AH
 Polarity energy balancing massage—AH; 11:49, 1994
 Polarity reflexology—12:71, 1995
 Polarity testing—AH
 Polarity yoga (polarity exercise)—AH; 11:49, 1994
 Positive confession (Word-Faith movement, faith movement)—12:71, 1995
 Positive imaging—12:71, 1995
 Possibility thinking—12:71, 1995
 Possibility thinking meditation (PTM)—12:71, 1995
 Postural integration—AH
 Power animal imagery—12:71, 1995
 Power yoga—11:49, 1994
Praktika cikitsa (naturopathy)—AH
Pranayama—AH; 12:31, 1995
 Pranic healing (bioplasmic healing, radiatory healing)—AH
 Pranic psychotherapy—AH; 11:49, 1994; 11:60, 1994
 Pranic therapy—12:20, 1995
 Prayer (metaphysical healing)—AH; 12:45–46, 1995
 Pre- and Perinatal Psychology—13:7, 1996
 Pre-cognitive re-education—12:21, 1995
 Primal therapy (primal scream therapy)—AH
 Primordial Sound Meditation—below
 Process acupressure—12:21, 1995
 Process psychology (process oriented psychology, Process-Oriented Psychotherapy, Process Work)—AH
 Professional Kinesiology Practice (PKP, PKP approach)—12:30, 1995
 Progression/regression therapy—AH
 Psionic medicine (psionics)—AH
 Psychic dentistry—AH
 Psychic healing (psi healing, psychic therapy)—AH
 Psychic Magic—13:9, 1996
 Psychic Self-Defense—12:21, 1995
 Psychic Shield—12:21, 1995
 Psychic surgery—AH
 Psychogenetics—11:49, 1994
 Psychography—13:32, 1996
 Psycho-kinetic Health (PKH)—12:30, 1995
 Psychological astrology (astro-psychology)—AH
 Psychology of evil [from M. Scott Peck, M.D.]—AH
 Psychometric analysis (short for “psychometric analysis of human character and mentality”)—AH
 Psychometry (object reading)—AH
 Psycho-neuroaligning (PNA)—12:71, 1995
 Psycho-neuro integration (PNI, psychic healing)—AH
 Psycho-pictography—12:49, 1995
 Psycho-regression—AH
 Psychospiritual holistic healing—AH
 Psychospiritual therapy—AH
 Psychosynthesis (psychosynthesis therapy)—AH; 12:49, 1995
 Psycho-Therapeutic ReikiSM (Psycho-therapeutic ReikiSM healing)—below

- Qigong (Qi Gong, internal Qigong; also spelled "chi gong," "chi gung," and "chi kung")—AH
- Qi Gong Meridian Therapy (QGMT)—AH
- Qigong therapy (*buqi*, *buqi* therapy, external Qigong healing, external Qi healing, medical Qigong, Qi An Mo, Qigong healing, Qi healing, Qi Massage, *wai Qi liao fa*, *wai Qi zhi liao*)—AH
- Quan Chi Chi Gong—13:9, 1996
- Quantum ReleaseWork™—13:9, 1996
- Radiance breathwork—AH
- Radiance movement therapy—AH
- Radiance prenatal process—AH
- The Radiance Technique® (TRT, The Official Reiki Program®, Real Reiki®)—AH
- Radiant breathing (radiant breathwork)—13:9, 1996
- Radiant Healing Massage Method®—below
- Radiesthesia (medical dowsing, medical radiesthesia)—AH
- Radionic diagnosis (radionic analysis)—AH
- Radionic photography—AH
- Radionics (psionics)—AH
- Radionic therapy (radionic healing, radionic treatment)—AH
- Radix™ (neo-Reichian therapy)—AH
- Rainbow diet—AH
- Rakta moksha*—12:49, 1995
- Rational fasting—12:30, 1995
- Raw juice therapy—12:30, 1995
- Ray methods of healing—AH
- Rebirthing (circular breathing, conscious breathing, conscious connected breathing, free breathing, vivation)—AH; 12:19, 1995
- Reflexology—AH; 12:61–64, 1995
- Reflexology workout—12:30, 1995
- Reflexotherapy—AH
- Regression therapy (hypnotic regression therapy)—below
- Reich Blood Test—11:49–50, 1994
- Reichian therapy (psychiatric orgone therapy, Reichian bodywork therapy, Reichian massage; called *vegetal therapy* in Europe)—AH
- Reiki (reiki healing, reiki therapy, Usui *shiki ryoho*, Usui *shiko ryoho*, Usui system of natural healing; formerly called *leiki*)—AH
- Reiki-alchemia®—12:21, 1995
- Reiki meditation—13:20, 1996
- Reiki Plus® (Reiki Plus Natural Healing, Reiki Plus System of Natural Healing)—AH
- Reimprinting with divine intervention—12:21, 1995
- Rei-so* (spiritual diagnosis)—AH; 12:30, 1995
- Remote diagnosis—AH
- Resonant kinesiologySM—12:21, 1995
- Rhythmajik—AH
- Rhythmical Massage—below
- Rolfing® (structural integration, structural processing)—AH
- Rolfing Movement Integration (RMI)—13:32, 1996
- Rosen method—12:21, 1995
- Rubinfeld Synergy® Method (Rubinfeld Synergy)—AH
- Sacral/spinal energy balancing—12:71, 1995
- Sacred psychology—12:49, 1995
- Santeria—13:9, 1996
- Seed-pressure method—12:27, 1995
- Schuessler [also spelled "Schussler"] biochemic system of medicine (biochemic medicine, biochemic system of medicine, tissue salts therapy)—AH
- Scientific palmistry—13:9, 1996
- Sclerology—AH
- Scrying (crystal ball, crystal gazing, crystalomancy)—AH
- Seichim—AH
- Seichim reiki—AH; 12:6, 1995
- Seicho-No-Ie—12:6, 1995
- Seiki-jutsu*—AH
- Seitai* control technique (*seitai* technique)—13:9, 1996
- Self-applied health enhancement methods (SAHEM)—AH
- Self expansion therapy—12:30, 1995 [incorrectly listed as "self expression therapy" in 11:62, 1994]
- Self-healing (direct healing)—AH
- Self-Help for Stress and Pain (Self-Help Approach)—12:30, 1995
- 7 keys meditation program—11:46, 1994
- Sexual Energy Massage—below
- Shadow sound therapy©—12:6, 1995
- Shamanic counseling—12:21, 1995
- Shamanic extraction healing (extraction method of healing)—12:30, 1995
- Shamanic midwifery—13:9, 1996
- Shamanic psychotherapy—11:50, 1994
- Shamanism (shamanic healing, shamanistic medicine)—AH
- Shaman stone healing—below
- Shandra-chi—12:9, 1995
- SHENSM (Specific Human Energy Nexus Therapy, SHEN therapy)—12:9, 1995
- Shiatsu (schiatsu, shiatsu therapy, shiatzu)—AH
- Shiatsu massage—AH
- Shinkiko (true ki energy flow)—12:30, 1995
- Siddha (Siddha medicine)—AH
- Silva mind control (Silva mental dynamics, Silva method, Silva method of mind development, Silva mind control method, Silva mind control method of mental dynamics, Silva mind control system)—AH; 12:21, 1995; 12:36, 1995
- Simonton method—AH
- Six Healing Sounds—AH
- 61-points relaxation exercise (61-points exercise, 61-points, *shavayatra*)—12:30, 1995
- SkyDancing Tantra—13:20, 1996
- Soaring crane Qigong (crane style *chi gong*)—AH
- Somasynthesis—12:9, 1995
- Somatic dialogue—11:50, 1994
- SomatoEmotional ReleaseSM—12:21, 1995
- Somatic emotional therapy—11:50, 1994
- Song channeling—11:50, 1994
- Sonopuncture—12:30, 1995
- Sotai (sotai therapy, sotai treatment)—AH
- Soul amplification—11:50, 1994
- Soul-centered psychology—12:22, 1995
- Soul part integration—AH
- Soul reading—13:20, 1996
- Soul retrieval—AH
- SoulWork—13:9, 1996

- Sound energetics™—11:62, 1994; 12:30, 1995
- Spinal Attunement™ Technique (SAT™)—below
- Spinal balancing—AH
- Spirit healing (spiritual healing)—AH
- Spirit releasement—13:20, 1996
- Spirit releasement therapy—11:62, 1994
- Spirit surgery—AH
- Spiritual Counseling—13:32, 1996
- Spiritual midwifery—12:30, 1995
- Spiritual psychology—AH
- Spiritual surgery—13:9, 1996
- Starlink—13:9, 1996
- Stress pattern processing™—12:30, 1995
- Stress Release (Stress Release approach)—12:31, 1995
- Structural Alignment—13:20, 1996
- Subatomic healing—12:31, 1995
- Subtle aromatherapy—12:31, 1995
- Sufi healing—AH
- Suggestive therapy (suggestive therapeutics, suggestive therapy work)—AH
- Suggestive therapy zone procedure (concept-therapy adjusting technique, health zone analysis, zone testing, zone therapy diagnosis)—AH
- Superior Fast (superior fasting)—12:30, 1995
- SuperShape psychological conditioning system—11:62, 1994
- Swedish-Esalen—12:59, 1995
- Synergy hypnosis—AH
- Syntonics—11:50, 1994
- Systematic nutritional muscle testing (SNMT)—AH
- TaeUlJu healing meditation (TaeUlJu, TaeUlJu healing, TaeUlJu meditation)—13:9, 1996
- Tai chi (tai chi chuan, *Tai Ji*, *tai ji chuan*, *Tai Ji Juan*, *tai ji quan*)—AH; 12:8, 1995
- Tai Chi-Chi Kung—13:32, 1996
- T'ai Chi Dao Yin—13:9, 1996
- Taido—11:50, 1994; 12:31, 1995
- Taiji Wuxigong—13:9, 1996
- Tamang shamanism—13:9, 1996
- Tanden breathing [component of *ki* breathing]—AH
- Tantra—AH
- Tantsu [component of Bodywork Tantra]—AH
- Tao healing energy chant—13:10, 1996
- Taoist energy touch—13:10, 1996
- Taoist five element nutrition (Taoist healing diet)—AH
- Taoist healing imagery—12:9, 1995
- Taoist Qigong (Daoist *chi kung*, Taoist Chi Kung)—AH
- "Tap, Tap" system—12:22, 1995
- Tattva shuddhi* (*tattva shuddhi* meditation)—13:10, 1996
- Tatwa meditation—11:50, 1994
- Telediagnosis (distant biological detection)—AH
- Ten Jin Do—13:10, 1996
- Tenrikyo—12:49, 1995
- Tensegrity—12:31, 1995
- Thai massage—11:62, 1994; 12:31, 1995
- Thai Massage-Reflex Yoga with MettaTouch—13:32-33, 1996
- Thai-style bodywork—13:10, 1996
- Theocentric psychology—12:22, 1995
- Theotherapy—AH
- Therapeutic eurythmy (curative eurythmy; also spelled "eurhythmy")—AH
- Therapeutic shiatsu [description not found]
- Therapeutic Touch (TT)—AH
- Thought Therapy—13:10, 1996
- Three in One (Three in One Concepts process, Three in One approach)—12:31, 1995
- Tibetan medicine (Emchi)—AH
- Tibetan Pulsing Healing (Tibetan Pulsing)—AH
- Tibetan reiki—12:49-50, 1995
- Time Line Therapy™ (TLT)—12:31, 1995
- TM-Sidhi (Transcendental Meditation Sidhi program, yogic flying)—MD
- Tongue diagnosis—below
- Toning—AH; 12:27, 1995; 12:28, 1995
- Touch for Health (TFH)—AH
- Traditional acupuncture—below
- Traditional Dhanur Veda diagnosis—12:50, 1995
- Trager (Trager approach, Tragering, Trager psychophysical integration®, Tragerwork)—AH
- Trager mentastics (Mentastics®)—AH
- Trance channeling—AH
- Transcendental Meditation® (TM®)*—11:38-40, 1994
- Transformation* [from Dr. Wayne W. Dyer]—AH
- Transformational Breath™—13:10, 1996
- Transformational counseling—12:22, 1995
- Transformational bodywork—AH
- Transformation-oriented bodywork (transformational bodywork)—13:33, 1996
- Transition method—12:22, 1995
- Transpersonal hypnotherapy [listed in AH, but description not found]
- Transpersonal psychology (transpersonal counseling, transpersonal counseling psychology)—AH
- Triggers™ Mind Programming System (Triggers, Triggers™ System)—AH
- Tui na* (Push Grab Massage, *Tui Na An Mo*)—AH
- Twelve stages of healing—11:62, 1994
- Twelve Steps—AH
- Uighur medicine—13:10, 1996
- Ujjayi* (*ujjayi* breathing)—12:31, 1995
- UltraVit 7-day juice slimming program—11:62, 1994
- Unani (Unani medicine, *Unani tibb*)—AH
- Unergic© method (Unergic holistic therapy)—12:22, 1995
- UN system™—11:62, 1994
- Urine therapy (*amaroli*, auto-urine-therapy, *shivambu kalpa*, uropathy)—AH
- Vedic astrology (*Jyotish*)—13:10, 1996
- VEGAtest method (Vega in vitro test method)—13:10, 1996
- Vibrational medicine (energy medicine, subtle-energy medicine, vibrational healing)—11:49, 1994; 11:51, 1994; 12:20, 1995; 12:31, 1995; 13:6, 1996; 13:31, 1996
- Vietnamese traditional medicine (Vietnamese medicine)—13:10, 1996

- Visceral meridian manipulation technique (VMM)—12:20, 1995
 Vita flex (reflex system)—AH
 Vitality fasting and rejuvenation—11:50, 1994
 Viviano method—AH
 Vodou (vodoun, vodun, voodoo, voodooism, voodooism)—12:22, 1995
 Waitankung—13:10, 1996
 Warriorobics—AH
 Watsu (water shiatsu) [component of Bodywork Tantra]—AH
 Weigh Down Workshop—13:10, 1996
 Weight No More (Body, Mind, and Spirit Diet; Weight No More approach to weight loss; Weight No More program)—12:50, 1995
 White tantra—AH
 Whole health shiatsu—11:50, 1994
 Whole person bodywork—AH
 Whole System Healthscan—13:20, 1996
 Wicca (modern witchcraft)—12:71, 1995
 Windows to the Sky acupressure (Window to the Sky acupressure)—13:33, 1996
 Wise woman healing (wisewoman healing ways, wisewoman ways)—AH
 Witchcraft—AH
 Woojangju power meditation (Woojangju power chant)—13:10, 1996
 Wortcunning—12:71, 1995
 Wu Ming Qigong—12:59, 1995
 Yantra yoga (Tibetan yantra yoga, yantra Tibetan yoga)—AH
 Yoga—AH; 13:33, 1996
 Yoga of perfect sight—AH
 Yoga therapy—AH
 Yoshida *taido* (Yoshida *taido* technique)—13:10, 1996
 Zarlén therapy (Zarlén direct channelling)—AH; 12:50, 1995
 Zazen—below
 Zen Alexander technique—AH
 Zen shiatsu—AH
 Zen-touch™—AH
 Zhan zhuang *chi kung* (*zhan zhuang*)—11:50, 1994
 Zhenjiu (acu-moxibustion, acupuncture-moxibustion therapy, *chen-chiou* therapy, China zhenjiuology, zhenjiuological therapy)—11:50, 1994
 Zhineng Chigong—13:20, 1996
 Zone therapy (reflex zone therapy, reflex zone massage)—AH; 12:31, 1995
 Zulu Sangoma bones—12:50, 1995

Healthcare Esoterica

Acupressure massage: Acupressure* [see NF 11:47, 1994] in the form of a massage (*An Mo*). Apparently, it is the equivalent of amma.* Acupressure massage purportedly is usable to promote the flow of *Qi* (*chi*) through the “meridian system.” Yet, supposedly, everything in the universe is composed of *Qi*.¹

Body acupuncture: Apparently, “ordinary” acupuncture: any form of acupuncture whose “channel theory” is that of traditional Chinese medicine* and whose scope is the entire human body (e.g., not just the ears).²

Cayce diet: Diet that stems from the “readings” of Edgar Cayce.* One of its “concepts” is that emphasizing in one’s diet fruits and vegetables that are “locally-grown” promotes acclimation and helps to align bodily “energies” with environmental “energies.”³

Celestial Training: Program that includes Awareness Release Technique® [see NF 12:26, 1995].⁴

Chakral pranic healing: Component of advanced pranic healing [see NF 12:59, 1995].⁵

Chinese herbal medicine: A “major pillar” of Chinese medicine (see below). Its theory holds that herbs can influence the “Yin and Yang energy patterns” of the body.¹

Chinese medicine: “Holistic” system of “medical analysis, interpretation and treatment” whose “basic foundation” consists of acupuncture meridian theory, “Five Phase Theory,”* “herbology,” nutrition, and yin/yang theory.*⁶

Chinese Qigong massage (An Mo, Chinese massage, Qigong massage): Component of traditional Chinese medicine that emphasizes the “proper level,” quality of “circulation,” and alleged preventive uses of *Qi*, “the energy circulating in human or animal bodies.” The categories of Chinese Qigong massage are: (1) Pu Tong An Mo* (General Massage), (2) Tui Na An Mo* (Push Grab Massage), (3) Dian Xue An Mo* (Cavity Press Massage), and (4) Qi An Mo* (Qi Massage).⁷

Chi Weight Lifting: Component of Bone Marrow Nei Kung* that purportedly can rejuvenate bone marrow by supplying the body with abundant “Ching Chi,” an alleged combination of sex hormones and “sexual energy.” It involves genitally lifting weights attached to the penis and scrotum or to the vagina.⁸

Co-Centering: Component of Bodywork Tantra.* It supposedly “connects” one’s alleged three “basic centers”: body, heart, and mind. Co-Centering includes Basic Co-Centering and Expanded Co-centering.⁹

Color pranic healing (pranic color healing): Component of advanced pranic healing [see NF 12:59, 1995]. Its theory posits “color pranas.” In the “visualization approach,” the “pranic healer” visualizes *prana* (*ki*, “vital energy”) of an appropriate color emanating from his or her “hand chakra.”⁵

Direct moxabustion: Form of moxabustion* that requires placing small cones of “moxa” (a dried herb) on

specific acupuncture points and burning them almost to the skin.¹

Distant pranic healing: Form of distant healing (absent healing*) propounded by Choa Kok Sui.*⁵

FITONICS™: Purportedly revolutionary “natural health and weight-loss program” promoted by Marilyn Diamond* (coauthor of the bestseller *Fit for Life* [see NF 3:57–59, 1986]) and clinical hypnotherapist Donald Burton Schnell, M.S., coauthors of *Fitonics for Life* (Avon Books, 1996).¹⁰ It apparently encompasses “enzyme nutrition” [see NF 12:3–4, 1995], “*khanda* (sweetness of life) meditation,” Mindtonic training, and the “spine-based Bodytonic routine for toning and flexibility.” Mindtonic training supposedly allows union of one’s conscious mind and one’s “subconscious spiritual core.”

HaelanWork™: “Complementary healing therapy” that purportedly blends “centering prayer,” “healing dialogue,” Holotropic Breathwork,* meditation, and Therapeutic Touch.*¹¹

Indirect moxabustion: Form of moxabustion* that requires burning “moxa” (a dried herb) not in contact with skin. Forms of indirect moxabustion include: burning moxa cones on a slice of garlic or ginger, or on a layer of salt; manipulating burning moxa sticks over the “affected” area; burning pieces of moxa sticks on needles inserted into acupuncture points; and burning moxa on a grill in a box over the “affected” area.¹

Invocative pranic healing (Invocative healing): Form of pranic healing* in which “mighty invisible spiritual beings” or “healing angels” supposedly control the “healing energy” and the “bioplasmic body” of patients.⁵

Jin shinn (jin shin): Form of bodywork* whose modes are jin shin do* and jin shin jitsu.*¹²

Motional Processing®: Form of bodywork* developed by Alice Rutkowski, Ph.D., R.M.T. (“registered movement therapist”). Its purported design is “to get us out of our heads and into the memories housed in the body.” Motional Processing supposedly is appropriate for “those seeking to unlock their bodies to access more life energy.”¹³

Non-Contact Therapeutic Touch (NCTT): Variation of Therapeutic Touch* (TT) that does not involve touching.

In the early 1980s, NCTT replaced TT in the TT community. Apparently, “Therapeutic Touch” and “TT” now refer primarily to NCTT.¹⁴

Oriental body and facial diagnosis: “Ancient art of health evaluation” taught by author Steven Acuff. One of its principles is that “life energy” is balance or imbalance of “the polarity between” yin and yang.¹⁵

Oriental massage (amma massage): Form of massage that emphasizes alleged acupuncture meridians whereby the body’s “vital energy force” is channeled.¹⁶

Paneurhythmy: Purportedly sacred “circle dance” created by Beinsa Douno, a Bulgarian mystic of the early 20th century.¹⁷ It supposedly has “individual and universal healing properties” and nourishes the “auric field.”*

Physio-Spiritual Etheric Body healingSM (PSEBSM):

One of several Reiki Plus* “healing modalities” allegedly co-created by God and Reverend David G. Jarrell. It purportedly “balances” the “biomagnetic energy” surrounding the “physical body.”¹⁸

Primordial Sound Meditation:

Ancient form of “mantra (or sound) meditation” revived by Deepak Chopra, M.D.* [see NF 11:40–41, 1994]. It purportedly involves selection of a mantra (“primordial sounds”) based on the date, time, and place of the prospective meditator’s birth.¹⁹

Psycho-Therapeutic ReikiSM (Psycho-therapeutic ReikiSM healing):

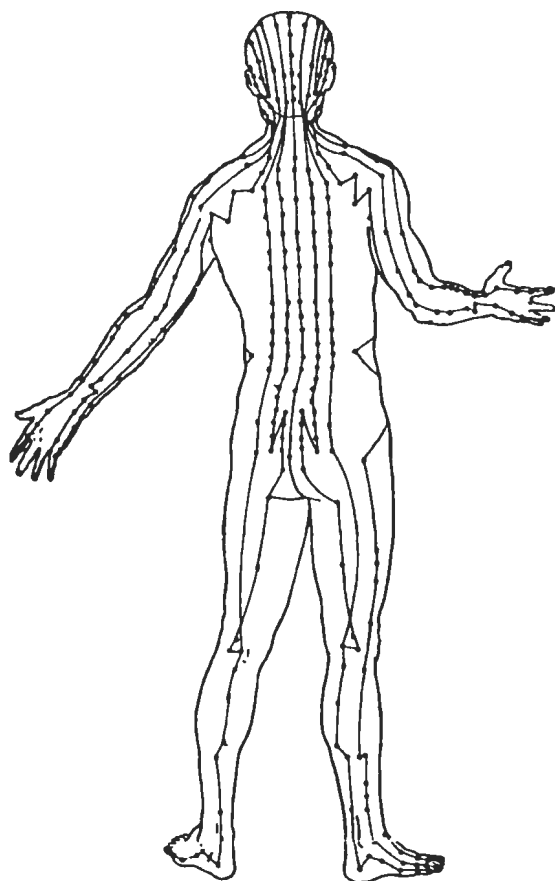
One of several Reiki Plus* “healing modalities” allegedly co-created by God and Reverend David G. Jarrell. Its purported design is to release “the memories retained in the bodies and conscious and soul memory.”¹⁸

Radiant Healing Massage Method®: Combination of massage techniques that allegedly

was developed because all massage methods are not equally able to “unlock” one’s “healing potential.”²⁰

Regression therapy (hypnotic regression therapy): Method that allegedly evokes memories of, symbols of, and/or fantasies about adolescent, childhood, in utero, and “past-life” events.²¹

Sexual Energy Massage: The “primary practice” of Bone Marrow Nei Kung.* It involves simultaneous digital massage of one’s genitals and “meditative breathing.” The



purported purpose of Sexual Energy Massage is to release "Ching Chi" from the genitals for dissemination in the body and absorption by the bones.⁸ "Ching Chi" is an alleged combination of sex hormones and "sexual energy" that can regenerate bone marrow.

Shaman stone healing: "Therapy" practiced by Anju T. Myodo, an "empathic healing channel."²² It integrates hand reflexology, "psychic palmistry," and "spiritual healing" [see NF 11:50–51, 1994].

Spinal AttunementSM Technique (SATSM): One of several Reiki Plus* "healing modalities" allegedly co-created by God and Reverend David G. Jarrell.¹⁸

Tongue diagnosis: Form of pseudodiagnosis whose theory posits *Qi* (pronounced "chee") [see NF 12:46, 1995].²³ Allegedly, *Qi*—often called "energy," "life-force," and "vitality"—is that which defines life.

Traditional acupuncture: Form of acupuncture* usually practiced in the context of traditional Chinese medicine.²⁴

Zazen: Ancient form of meditation that purportedly enables touching the "source of life." Apparently, Zazen supposedly also helps to "awaken" *jariki*, "the spiritual energy necessary to be of true service."²⁵

*See "Alternative" Healthcare: A Comprehensive Guide (Prometheus Books, 1994).

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- ¹⁴ L.A. Rosa, "Therapeutic Touch," *Skeptic*, Vol. 3, No. 1, 1994, p. 43.
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- ¹⁶ B.Q. Hafen and K.J. Frandsen. *From Acupuncture to Yoga: Alternative Methods of Healing*. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1983.
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- ¹⁹ Page 10, Summer 1996 May–October catalog, Omega Institute for Holistic Studies, Rhinebeck, New York.
- ²⁰ Leaflet from the Gentle Touch Natural Therapy Center, taped to several copies of the Summer 1995 issue of *Healthy Answers* on display at the BQE Racquetball and Fitness Complex, in Woodside, New York, on March 16, 1996.
- ²¹ Page 37, Summer 1996 May–October catalog, Omega Institute for Holistic Studies, Rhinebeck, New York.
- ²² Display, *Newlife*, Vol. 10, No. 47, March 1996, p. 40.
- ²³ P. Firebrace and S. Hill. *Acupuncture: How It Works, How It Cures*. New Canaan, Ct.: Keats Publishing, Inc., 1994.
- ²⁴ K.G. Olsen. *The Encyclopedia of Alternative Health Care*. New York: Pocket Books, 1990.
- ²⁵ Page 95, Summer 1996 May–October catalog, Omega Institute for Holistic Studies, Rhinebeck, New York.

Addendum

Fit for Life program: Variation of the pseudo-dietetics of Natural Hygiene developed by Harvey and Marilyn Diamond. [H. Diamond and M. Diamond. *Fit for Life*. New York: Warner Books, Inc., 1985.]

Fountain of Youth Qigong (Fountain of Youth): Purported ancient secret to increasing "original Qi Energy" ("the Primordial Qi"). It allegedly restores youth. [Display, *Newlife* (special expo edition), Vol. 10, No. 48, April 1996, p. 34.]

Living Health life-style: Apparently, a long-term variation of the Living Health program (see below).

Living Health program: Apparently, the two-week program expounded and recommended by Harvey and Marilyn Diamond in *Fit for Life II: Living Health* (Warner Books, 1987). Its philosophy posits an "inner voice" in everyone that knows what is right.

Rhythmical Massage: "Approach to massage" developed by physician and anthroposophist Ita Wegman. According to its theory, *effleurage* (light manual rubbing) in the form of the figure "8" strengthens the "etheric (life) body." [E. Bristol, "Rhythmical Massage: A New Approach," *LILIPOH*, Vol. 1, No. 4, Winter/Spring 1996, p. 6.]

SHADOW, SUBSTANCE, and *THE ZONE*

A REVIEW

James J. Kenney

In his bestseller, *The Zone: A Revolutionary Life Plan to Put Your Body in Total Balance for Permanent Weight Loss*, published last year by HarperCollins, Barry Sears, Ph.D., says he is “firmly convinced” that certain low-fat, low-protein, high-carbohydrate diets (by implication, all such diets) “can actually be dangerous,” that they “can actually help bring on the diseases they’re supposed to prevent...[b]ecause they violate the basic biochemical laws required to enter the Zone” (p. xvi).

Twilight Zone?

The book’s dust cover gives the appearance that its title is “Enter the Zone” and describes the work as a “dietary road map.” Yet “the Zone” is not a place; at least, it’s not a “place” in the usual sense of the word. Is it a distinct physiological or psychological state? According to the book’s index, “Zone” is defined on pages 1–3 and on page 7. The word is not defined on page 7, however. I gleaned the following phrases from pages xvi and 1–3.

- “...that state of optimal good health, physical performance, and mental alertness...” (p. xvi)
- “...that mysterious but very real state in which your body and mind work together at their ultimate best... In the Zone, the mind is relaxed, yet alert and exquisitely focused. Meanwhile, the body is fluid, strong, and apparently indefatigable. It’s almost euphoric. There are no distractions, and time seems to slow down to a graceful waltz.” (p. 1)
- “[T]here’s nothing mystical about the Zone. *The Zone is a real metabolic state that can be reached by everyone, and maintained indefinitely on a lifelong basis.*” (p. 2)
- “Simply put, [the Zone is] the metabolic state in which the body works at peak efficiency... In the Zone, problems don’t go away, but their solutions become more obvious... In the Zone [weight loss] is painless, almost automatic.” (p. 2)

- “The Zone is beyond wellness. The Zone is about *optimal health.*” (p. 2)
- “The truth is that *every time you open your mouth to eat, you’re applying for a passport to the Zone.*” (p. 3)

Is this “the truth,” or is it an attempt at euphemizing mysticism? Another author, Phil Scott, defines “the Zone” as “the level of peak performance at which an athlete feels capable of doing anything, effortlessly and efficiently.”¹ Scott equates the Zone and “runner’s high.”² Whereas Sears claims that the “only...route to reach the Zone at will” is dietary (p. 3), Scott states that the “secret” to “get[ting] to the Zone with consistency” is respiratory³ (specifically, a routine characterized by “Ayurvedic breathing” and a series of yoga postures).

The concept of “the Zone” is comparable to that of “flow,” the subject of a much more scholarly work, Prof. Mihaly Csikszentmihaly’s *Flow: The Psychology of Optimal Experience*. Therein, Dr. Csikszentmihaly defines “flow” as “the way people describe their state of mind when consciousness is harmoniously ordered, and they want to pursue whatever they are doing for its own sake.”⁴ He suggests that an “almost infinite range” of activities “produce flow,” and he states that some—including art, games, hobbies, and sports—do so consistently.⁵

My point is that “the Zone” is, at best, ill-defined, and, at worst, a fantasy with a host of roadmaps and gurus showing the “path” from which we have “strayed” (p. 104).

Danger Zone?

The Zone is a confusing blend of science and nonsense. As its popularity has soared, its claims about the dangers of high-carbohydrate diets have become a source of consternation for people following the Pritikin Eating Plan, which emphasizes a diet composed primarily of high-carbohydrate foods. The chief potential danger of Sears’ book is the suggestion, based on little more than anecdotes,

that the “Zone-favorable diet” (herein referred to as “the Zone diet”) has powerful effects on many major diseases. However, there is no credible research to support the use of the Zone diet to treat *any* disease. Furthermore, Sears contends that other diets—diets of proven efficacy—are dangerous! If people abandon such diets, and medical treatments with good track records, to adopt Sears’ untested and highly speculative approach, the likely result will be needless deaths and suffering.

Using a variation of bait and switch, HarperCollins repeats on the back of the dust cover a claim made by Sears on page 11: “Eating fat doesn’t make you fat.” But, on page 87, Sears states: “[R]emember, a Zone-favorable diet is a low-fat diet.” Indeed—despite statements such as “[Y]ou may have trouble eating all the food required to reach the Zone” (p. 97)—the Zone diet is simply a thinly disguised calorie-restricted, tightly portion-controlled diet.

Although Sears states that when one has reached one’s ideal weight or percentage of body fat, one must consume more calories, he claims that all these extra calories must come from fat in order for one to stay in “the Zone.” For most people, that prescription translates into a diet with 45–60 percent of calories from fat. This means that unless one is actively losing weight, one will be on a very high-fat diet for the rest of one’s life. The appeal of this book stems in part from the marketing of the Zone diet as a scientific breakthrough that enables eating fatty foods without gaining weight. In fact, high-fat diets have been shown to *promote* weight gain. For example, a high-fat diet (in which fat provided 59 percent of the calories) was shown to increase ad-lib caloric intake by 40 percent over a two-week period, relative to a diet in which fat provided only 20 percent of the calories.⁶

There *is* reason to believe that diets very low in carbohydrate (less than 40–50 grams per day) may reduce caloric intake because of the metabolic effects of the ketosis they produce. However, even at Sears’ most restrictive carbohydrate level, his diet is not deficient enough to trigger ketosis. It should not be confused with ketogenic diets, such as Atkins’, Stillman’s, and the ketogenic diet recommended more recently, by the Eades, in *Protein Power* (Bantam Books, 1996).

It may be hard to believe that someone with a doctorate in biochemistry from Indiana University could come up with the unlikely thesis that diets high in carbohydrates, rather than fat, are the main cause of heart disease and obesity. Of course, as Ted Kaczynski, the suspected “Unabomber,” has demonstrated, some very bright people with doctorates from excellent schools can concoct some pretty lame theories. This is particularly true when one ventures too far from one’s area of expertise. Despite Kaczynski’s brilliance in mathematics, his ideas about psychology, sociology, and ecology are rather naive. Likewise, Sears’ extensive training in biochemistry has not prevented him from making some rather naive statements about clinical nutrition and sports nutrition.

But let’s give Sears credit for having a much better

strategy for promoting, and profiting from, his flawed thesis than Kaczynski apparently had. Clearly, writing books with wacky ideas about nutrition is about as American as apple pie. Mailing bombs to maim and kill people is not nearly as acceptable. The alleged Unabomber appears to have a grudge against nearly all of modern society, whereas Sears’ grudge appears aimed primarily at Pritikinesque “low-fat radicals” (p. 11). According to Sears, anyone who supports a high-carbohydrate diet for Americans cannot be trusted. This includes *Consumer Reports* magazine and the National Research Council’s Committee on Diet and Health (p. 10).

Number Munching?

Let’s take a closer look at Sears’ central thesis: He claims that a diet with a caloric makeup of 40 percent carbohydrate, 30 percent protein, and 30 percent fat (or simply 40/30/30) is the secret to good health, optimal athletic performance, and longevity. One who wants to maintain one’s current weight may change this makeup to 25/19/56.

In Chapter 9, Sears correctly points out that grains were not part of our ancestral diet. He then implies that human beings are not genetically adapted to eating grains. This is naive. Grains are rich in starch, a form of carbohydrate that was certainly a major part of our ancestral diet. Starchy vegetables like beets, cassava root, potatoes, squashes, and yams have long been part of human and prehuman primate diets. Our pancreas and salivary glands produce the starch-digesting enzyme amylase. Amylase works quite well on starch from grains, beans, and starchy vegetables alike, even though only starchy vegetables were a major part of our ancient ancestral diet. Tuna was not part of our ancestral diet either, but that doesn’t mean we aren’t genetically designed to eat it. Furthermore, it’s extremely implausible that our ancestors ate three small meals and two snacks daily, and that each meal and snack had a 40/30/30 makeup. Indeed, it’s hard to think of a single food item likely to have constituted a meal for our ancestors that approaches this caloric makeup. It’s even harder to believe that Sears’ diet is the “*evolutionary diet*,” the “genetically correct” diet for all humankind (p. 104).

Yet Sears doesn’t stop there: He contends that his 40/30/30 diet is the key to “living in the nearly euphoric metabolic state called the Zone” ((p. 8). Forget for the moment that “the Zone” is ill-defined. Has anyone done any scientific research that supports the notion of an evolutionary adaptation to a caloric makeup of 40/30/30? Nope! I gather from the book that

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the only support for this claim consists of fossil evidence and anthropological studies suggesting that Paleolithic humans consumed about 3000 calories a day in a 45/34/22 ratio.⁷ However, the report of these findings also included an estimate of the sodium content of this Paleolithic diet: 690 mg—much less than a Zone dieter would consume if he or she followed the recipes in Sears' book.

In the Preface (p. xv), Sears states that cancer drugs function in "a Zone...known as the therapeutic zone." In a sense, this is true: Too low a concentration results in insufficient destruction of cancer cells, and too high a concentration in the destruction of too many normal cells. However, no scientific evidence suggests that this pharmacologic range or "zone" has any relationship to the "flow"-like "Zone" posited by Sears.

Nevertheless, he speculates: (a) that an "eicosanoid Zone" combines "properties" of the "Zone" of cancer drugs and that of optimum athletic performance (p. xv), and (b) that the ratio of caloric nutrients in the diet determines whether one gets into this supposed "eicosanoid Zone." There are a few holes in this theory. For example, no scientific evidence, or rationale, connects the "flow"-like "Zone" and the "therapeutic zone" of drugs.

Then there is a problem with Sears' claim that a specific proportion of macronutrients (carbohydrate, protein, and fat) can put one in the "eicosanoid Zone." Eicosanoids are hormonelike substances derived from polyunsaturated fatty acids such as arachidonic acid. While diet does affect eicosanoid levels, the effect depends primarily on which types of fat one consumes. So why does Sears stress the ratio of macronutrients? Hard to say. A cynic might contend that the 40/30/30 ratio he pedestals is just a marketing ploy for *BioZone* "nutrition bars," which Sears developed. Was *The Zone* designed as a marketing tool for this product? One can get 14 little *BioZone* bars for \$35, plus \$5 for shipping and handling, by calling the toll-free number in the book (p. 213). That's a week's supply if one follows the "Spartacus Quick Start Plan" from Envion International. This company is part of Surfactant Technologies, Inc., of which Sears is an owner.

(Reportedly, before he left Balance Foods, Inc., Sears helped to develop that company's "nutritional food bar," *Balance*. A June press release claimed: "Balance combines nutrients in the clinically proven 40-30-30 ratio of carbohydrates, protein, and dietary fat; a nutritional concept that helps the body access body fat for energy, and maintain steady blood sugar levels.")

Has Sears done any research to see if his 40/30/30 diet really does alter eicosanoid levels? Nope. On August 22,

1995, on a KSRO radio show with Dr. John McDougall, he admitted that he'd never even looked at eicosanoid levels in people following his dietary advice. Have any studies demonstrated that changes in macronutrient ratios affect eicosanoid levels? Limited research suggests some effects, but their relationship to health is unclear. Furthermore, there is absolutely no credible support for the claim that changing the proportion of carbohydrate, protein, and fat in one's diet affects athletic performance by altering eicosanoid levels.

Despite the holes in his thesis, and the complete lack of data from controlled scientific studies to substantiate the macronutrient/eicosanoid relationship he posits, Sears claims that his Zone diet is the ticket to feeling great, preventing or eliminating many diseases, and optimizing athletic performance. That's good marketing, but bad science.

Trimming the Fat

Okay, so the Zone diet's theoretical basis is shaky. Perhaps Sears and the rest of us don't understand yet how the diet works. After all, if the diet could do just ten percent of what Sears says it can, it would be a breakthrough even if its theory posited the tooth fairy. Sears claims or suggests (p. xvi) that his diet: can help prevent, or even help reverse, heart disease; prevents cancer; has a "positive impact" on a "host of other diseases"; helps one to live a longer and more satisfying life; keeps one performing at one's "absolute best"; and can help one lose weight permanently. The dust cover suggests that one can use it to reset one's genetic code and fight cancer, depression, diabetes, PMS, and symptoms of HIV infection and multiple sclerosis. The trouble is, no one has done any credible research to determine whether any of these claims and hints deserve even a whit of confidence.

The claim, on the back of the book's cover, that apple juice, orange juice, bananas, raisins, carrots, lima beans, rice, bagels, bread, dry cereal, pasta, popcorn, and ketchup "could be dangerous to your health" is meaningless except as a come-on. The real danger is his "guess" (p. 153) that people who follow very low-fat, high-carbohydrate diets, such as those advocated by Dean Ornish and Pritikin Longevity Centers, "will ultimately have more heart attacks, strokes, and a higher cardiovascular death rate" than those who do not. This seems absurd, since Ornish showed that most people following his program experienced regression or reversal of their atherosclerosis.⁸ Atherosclerotic lesions (which clog arteries) are the underlying cause of most cardiovascular deaths, yet Sears is suggesting that a diet

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with the proven ability to counteract such lesions increases cardiovascular mortality.

Of course, Sears is correct in pointing out that we don't know how Ornish's patients will fare in the end. However, many years ago, Lester Morrison, M.D., conducted a study of diet and heart disease that involved 100 people. Their average age at the start of the study (in the late 1940s) was 62, and all of them had had at least one heart attack before that time. Morrison put half of them on a very low-fat, low-cholesterol diet similar to diets later formulated by Ornish, Nathan Pritikin, and others. The other fifty subjects continued eating as usual. After twelve years, 31 of the 50 low-fat dieters had died. Even though the study took place before the introduction of bypass surgery and effective cholesterol-lowering drugs, and before the American Heart Association's advocacy of fat-and-cholesterol restriction, a 38-percent survival rate is not great.

Do the fates of the other fifty subjects bear out Sears' "guess" that low-fat, high-carbohydrate dieters "will ultimately have more heart attacks, strokes, and a higher cardiovascular death rate"? Their diets were much higher in fat and cholesterol, and much lower in carbohydrate, than the experimental diet. After twelve years, all of them had died, most from cardiovascular disease.⁹

Lose Weight Now. Ask Me How.

Morrison's study is also instructive regarding the effect of a high-carbohydrate diet on weight. The subjects on the low-fat, high-carbohydrate diet lost an average of about 25 lbs and remained lighter for 12 years. This makes me wonder why Sears claims that "eating fat doesn't make you fat" (p. 11). Most scientific researchers have found that increasing dietary fat increases caloric intake and promotes weight gain. That's why most people in China are slim, and so many Americans are overweight. Americans derive about a third of their calories from fat—which is awfully close to the percentage that Sears recommends. Lauren Lissner, Ph.D., found that adding fat to foods caused both a spontaneous increase in caloric intake and weight gain in human subjects who lost weight when they consumed the same foods prepared so as to make them much lower in fat.¹⁰

Sears makes much of the modest decrease in the percentage of calories Americans derive from fat and the increasing incidence of obesity in America. In fact, the reason Americans are getting fatter relates more to a decrease in activity and smoking than to dietary changes. It's true that Americans are deriving a smaller percentage of calories from fat today than they were five or ten years ago. However, this is more attributable to an increase in refined-carbohydrate intake than to a decrease in fat consumption. In 1995, the average daily intake of fat by Americans was 74.2 grams in 1995—up slightly from 71.8 grams in 1990.

Consider that adding three tablespoons of "fat free" chocolate syrup to a glass of whole milk decreases the percent-

age of fat-derived calories from 50 percent to 30 percent, but it doesn't decrease the amount of fat in the drink or make the drink less "fattening." To imply that Americans are getting fatter because they are ingesting less fat demonstrates a lack of understanding of nutrition and weight control. Sears also claims (p. 59): "[Y]ou can burn body fat...by watching TV...." A statement on the back of the dust cover is stronger: "You can burn more fat watching TV than by exercising." Let's face it: If watching television and eating high-fat foods were the key to permanent weight loss, Americans would be thin and the Chinese would be fat.

Rest assured that you'll lose weight if you follow the dictates in Chapter 8 of *The Zone*. How could someone who apparently lacks understanding of nutrition and weight control devise a diet that can effect weight loss? It's easy! The reason you would lose weight on the Zone diet has nothing to do with insulin levels or eicosanoid levels, as Sears suggests, and everything to do with caloric restriction. Most women who calculate how much protein, carbohydrate, and fat they may consume daily according to the diet would wind up with a daily caloric value between 800 and 1400. Of course, calorie-restricted diets whose daily caloric value is significantly lower than that of the dieter's ad-lib intake—slow one's metabolism and leave one hungry and craving high-fat and/or high-sugar foods. They also can impair athletic performance by decreasing glycogen synthesis in muscles.

Whence Carbophobia?

Sears bases much of his criticism of high-carbohydrate diets on research that demonstrated some adverse metabolic effects of a diet higher in carbohydrate compared to one higher in monounsaturated fat. Most of this research was conducted by Gerald Reaven, M.D., Ph.D., at Stanford University. These adverse effects include hyperinsulinemia, hypertriglyceridemia, and a decrease in HDL-cholesterol. However, as we shall see, the protocols of Reaven's studies make their findings largely irrelevant to free-living subjects (who rarely can adhere for long to a prescribed caloric level). Perhaps we should not be too hard on Sears for failing to see the design flaws in Reaven's research. Other researchers, plus a disturbing number of health professionals, have also failed to perceive the clinical irrelevance of Reaven's short-term studies.

All the studies that have shown adverse effects of a diet higher in carbohydrate relative to a diet higher in monounsaturated fat have had similar design flaws. The most important flaw has been inappropriate control of caloric intake and/or body weight. Although the findings of these studies have scientific value, they have been misinterpreted or overinterpreted in terms of clinical application.

Studies of human populations have linked the development of obesity and/or NIDDM (non-insulin dependent diabetes mellitus) with diets high in fat and refined carbohydrates,^{11,12,13,14} particularly when a low level of physical activity

accompanies such a diet. There seems to be little doubt that adopting a Western lifestyle with its rich diet and sedentariness has a tendency to result in obesity and/or NIDDM in genetically predisposed members of the population. The unanswered question is: Are processed, particularly refined, carbohydrates more conducive than fat to obesity? Most studies suggest that fat is worse, but few researchers would propose that “fat free” products like *SnackWells* and *Entenmann’s* are key to quick and permanent weight loss.

In 1988, Antonio Garg, M.D., and associates concluded that partial replacement of complex digestible carbohydrates with monounsaturated fatty acids may, in non-insulin dependent diabetics, improve both glycemic (blood sugar level) control and levels of triglycerides and HDL-cholesterol.¹⁵ In a letter to the editor,¹⁶ my associates and I pointed out that Garg’s findings were largely the result of a faulty experimental design: The high-fat diet and the high-carbohydrate diet were isocaloric (at the same caloric level). We cited studies clearly demonstrating that most people reduce caloric intake and lose weight when carbohydrate replaces fat in their diets.

Although they have never successfully refuted this criticism, Reaven, Scott Grundy, M.D., and their associates have continued to publish research with protocols that are similarly flawed and limit the clinical relevance of the research. Yet this research is fueling a growing anti-carbohydrate backlash.

Most recently, the Reaven and Garg groups collaborated on a study published in the *Journal of the American Medical Association*. The researchers concluded that, “in NIDDM patients, high-carbohydrate diets compared with high monounsaturated-fat diets caused persistent deterioration of glycemic control and exaggeration of hyperinsulinemia, as well as increased plasma triglyceride and [VLDL-cholesterol] levels.”¹⁷ This is what Sears claims. I sent a letter to the editor that challenged the clinical relevance of the study (in sum, the diets were isocaloric), but the editor decided not to publish it. My letter reportedly was forwarded to Garg, from whom I have not received a response.

Stay Hungry?

The findings of researchers at the Pritikin Longevity Center in Santa Monica, California, contrast markedly with those of Garg and associates. The Pritikin researchers found both improvement in glycemic control and a decrease in insulin and triglyceride levels in patients on a diet very low in fat and high in fiber.^{18,19} However, in the two Pritikin studies, the caloric intake of the subjects was ad-lib, they were discouraged from going hungry, and they began an exercise program. What does Sears say in his book about published research that refutes one of the main tenets of the Zone diet? Nothing.

The vast majority of people—perhaps because of a body-weight “set point” (a hypothetical physiological predisposition to “settling” at a particular weight)—cannot spontaneously control their caloric intake over the long term.²⁰

However, it has been shown repeatedly that both a decrease in caloric intake and weight loss result when people follow calorically unrestricted, high-carbohydrate diets relative to diets higher in fat.^{21,22,23,24} Moreover, when the same amount of weight was lost on a calorically unrestricted, high-carbohydrate diet, relative to a calorie-restricted diet higher in fat, the high-carbohydrate dieters reported less hunger, more gustatory enjoyment, and a higher quality of life.²⁵

A recent study conducted by Alice Lichtenstein, Ph.D., and associates compared the metabolic effects of: (a) a moderate-fat diet (29% of calories from fat), (b) a low-fat diet (15% of calories from fat) isocaloric with the moderate-fat diet, and (c) the same low-fat diet consumed ad lib. The moderate-fat diet was advantageous only when the caloric intake was the same as that occurring with the low-fat diet.²⁶ In this study, the more favorable blood-lipid changes due to the low-fat diet, relative to a diet higher in monounsaturated fat, occurred when caloric intake was ad-lib, even though the ratio of polyunsaturated to saturated fats (P/S ratio) was significantly lower with the low-fat diet (0.51) than with the moderate-fat diet (.62). Presumably, if the P/S ratios had been similar, the low-fat diet would have been yet more advantageous than the moderate-fat diet.²⁷

The most striking finding of Lichtenstein’s study was the significantly lower postprandial level of serum triglycerides with the ad-lib low-fat diet, relative to the moderate-fat diet. Triglyceride levels, both fasting and postprandial, were much higher in subjects who followed the low-fat diet that was isocaloric with the moderate-fat diet. This study and a follow-up study from the same group²⁸ clearly refute the claim that high-carbohydrate diets elevate serum triglycerides relative to diets higher in fat. High-carbohydrate diets do so only when caloric intake is not ad-lib. Since Sears bases his thesis that high-carbohydrate diets cause an increase in insulin levels primarily on Reaven’s work, these studies likewise refute the theoretical basis of the Zone diet. Unfortunately, the media paid little attention to them.

Perhaps the main advantage of a diet very high in complex carbohydrates (relative to one higher in unsaturated fatty acids) is that, under most circumstances, calorie for calorie, dietary carbohydrates cause more satiety than dietary fat. Since few people can lose weight and then maintain their lower body weight by spontaneous caloric restriction, a diet higher in complex carbohydrates, compared to one higher in monounsaturated fatty acids, is useful in that it generally leads to a decrease in caloric intake and a loss of excess body fat, especially in people with central adiposity (a high waist-to-hip ratio) and hyperinsulinemia.

The Right Stuff

But let’s give credit where credit is due. There is some reality in Sears’ claim that different high-carbohydrate foods have different metabolic effects. Work by Reaven and other researchers does indicate that a focus on the percentage of

calories derived from fat is too narrow. Apparently, the metabolic effects of individual high-carbohydrate foods differ just as the blood-lipid effects of some types of fat are worse than those of other types. For example, there is reason to believe that different high-carbohydrate foods (or even different foods high in complex carbohydrates) have different satiety values and different effects on the levels of sugar and insulin in the blood. A recent study suggested that obesity is maintained not only by a diet high in fat but also by one high in refined sugar and low in fiber.²⁹ In general, it appears that those high-carbohydrate foods that cause the greatest insulin response are less likely to conduce to satiety and more likely to increase caloric intake.^{30,31,32} A plausible explanation for these apparent effects is that insulin promotes fat storage and decreases fat oxidation.³³ So there is a point to minding the types of carbohydrate one ingests, and Sears' thesis is not 100% wrong.

That doesn't mean his thesis is sound. After all, even Kaczynski's published anti-technology "manifesto" was not completely off base. If Sears had limited himself to pointing out that "fat free" bakery products aren't great diet aids, his book may have been socially beneficial. But, in Kaczynski style, he started off with some legitimate concerns about too much of the wrong type of high-carbohydrate foods and—with his coauthor, professional writer Bill Lawren—wove those concerns into a self-styled manifesto³⁴ that is sometimes self-contradictory and irrational.

If the main advantages of a high-carbohydrate diet over a high-monounsaturated fat diet are a decrease in caloric intake and a loss of body fat, it seems wise to encourage the consumption of high-carbohydrate foods with a high satiety value. A recent study clearly demonstrated that less-processed starchy foods caused lower glycemic and insulin responses than more-processed starchy foods.³⁵ Even if those high-carbohydrate foods that caused a lower insulin response did not have a higher satiety value and did not conduce more to weight loss, they would be preferable for persons with insulin resistance (Reaven's Syndrome X), because higher insulin levels appear to figure independently in the etiology of atherosclerosis.^{36,37,38}

Another potential advantage of high-carbohydrate diets over the diet higher in monounsaturated fat advocated by Sears is a decrease in clotting factor VII. Diets higher in monounsaturated fatty acids and lower in carbohydrate are likely to conduce to an increase in clotting factor VII, which has been associated with an increased risk of thrombosis.³⁹ Often, persons with extensive atherosclerosis are at high risk of forming blood clots (thrombi) in diseased parts of their arteries. Even a single high-fat meal can cause an increase in clotting factor VII and in the tendency to form blood clots, which can block an artery and trigger a heart attack or stroke. Researchers have also shown that increasing dietary protein tends to increase clotting factor VII.⁴⁰ Sears does not mention this potential problem in his book.

High-carbohydrate diets have other advantages over diets higher in monounsaturated fat. However, to some extent,

these advantages depend on the types of high-carbohydrate foods consumed. Unfortunately, we do not know enough about the particular metabolic effects of different high-carbohydrate foods to prioritize them comprehensively.

Probably one important characteristic of starchy foods is how they affect insulin levels. In general, the more rapidly insulin is released in response to ingestion of a high-carbohydrate food, or the greater the amount released, the less desirable that food would be for one who wants to lose weight, improve blood-lipid conditions, and/or improve blood-sugar regulation in NIDDM.⁴¹

Clinically it appears that foods capable of triggering hyper-insulinemia are likely to be more of a problem for Type II diabetics (who cannot produce enough insulin to prevent abnormal blood-sugar elevations) and/or persons trying to lose body fat (perhaps because insulin promotes oxidation of carbohydrate rather than of fat). High-carbohydrate foods that cause a greater insulin response would seem to be most detrimental to persons with insulin resistance, partly because hyperinsulinemia is very probably an independent factor for the progression of atherosclerosis.⁴²

Refined Tastes

However, Sears overemphasizes avoidance of high-carbohydrate foods that cause the greatest rise in blood-sugar and insulin levels. Other factors are important as well. Many foods rich in complex carbohydrates—such as beans, brown rice, corn, hot whole-grain cereals, potatoes, and whole-wheat pasta—furnish about 500 to 650 kcal per pound. But the most calorie-dense grain products—such as breads, crackers, and dry cereals—furnish about 1250 to 1750 kcal per pound. In many people, consumption of those high-carbohydrate foods that are more calorie-dense apparently leads to greater caloric intake and/or insulin output than consumption of those that are less calorie-dense. The human stomach can hold about 2–3 lbs of food; and increasing the amount of carbohydrate one consumes at one sitting increases the overall insulin response. Therefore, it is easier to overeat calorie-dense foods than it is to overeat foods of low caloric density. Breads, dry cereals, and crackers (even whole-grain crackers) are more likely to exaggerate an insulin response than hot cereals, pasta, potatoes, and rice.

"Fat free" chips and pretzels have a very high caloric density, about 1600–1700 kcal/lb. "Fat free" cakes, cookies, pastries, and muffins furnish 1400–1800 kcal/lb and presumably trigger marked hyperinsulinemia and/or excessive caloric intake in many people. Persons with insulin resistance (Syndrome X) who consume such high-carbohydrate foods ad lib may incur particularly adverse metabolic effects. So here, again, Sears' reasoning (apparently inspired by some of Reaven's studies) is fairly close to reality.

Generally it appears that foods of high caloric density are more conducive to an increase in caloric intake and/or a

decrease in meal frequency than foods of low caloric density. This effect seems at least partially independent of that of dietary fat.⁴³ When the ratio of fat to carbohydrate is changed covertly but the caloric density of diets is maintained, much of the apparent benefit of decreasing the proportion of fat-derived calories disappears.^{44,45} Both an increase in caloric intake and a decrease in meal frequency are likely to increase overall insulin secretion. And the injection of extra insulin both into animals and into humans is associated with weight gain.

The protective effects of consuming starchy foods of relatively low caloric density may be partly due to the tendency to consume fewer calories per sitting when the caloric density of the meal is lower. Consuming meals of lower caloric density may lead to consuming a greater number of meals or to grazing (eating only snacks throughout the day). Grazing, even without a change in the types or quantity of carbohydrate consumed, has been shown to decrease insulin production and insulin resistance and to affect blood-lipid conditions favorably.⁴⁶ As Sears stresses eating small meals, I again give him credit for being reasonable some of the time.

Altering starch structure, or altering or disrupting the cell walls that surround starch granules, increases the caloric density of starchy foods. It also may increase the rate of digestion and absorption. Generally, this results in a higher glycemic index (the blood-sugar response value of a food relative to that of glucose) and a higher insulin index (the relative insulin response value of a food). Such elevations would likely be disadvantageous, particularly for persons with NIDDM and/or Syndrome X and central adiposity. In contrast, there is reason to believe that less processed forms of the same foods (which have a lower glycemic index and/or insulin index) may help to moderate the adverse effects of high-carbohydrate diets on blood-lipid conditions.^{47,48} (For example, whole-wheat berries have a lower glycemic index and/or insulin index than whole-wheat crackers.) Processing that disrupts the botanical structure of the food usually increases the rate at which the carbohydrate is digested and absorbed.^{49,50} Generally, the more rapid the absorption of a food high in complex carbohydrates, the greater the glycemic and insulin response.⁵¹ Insulin elevations have been shown not only to promote fat storage and decrease fat oxidation, but also to decrease the satiety effect of dietary fat.³³

Refining wheat and other flours entails the removal of dietary fibers. The consumption of soluble fibers with starch and/or sugar generally lowers the glycemic and/or insulin index.⁵² Soluble fiber has been shown to decrease ad-lib caloric intake.^{53,54} There is also evidence that soluble fibers may both reduce ad-lib caloric intake and conduce to weight loss (and/or inhibit weight gain).⁵⁵ The evidence that insoluble fibers reduce insulin response and/or facilitate weight loss is inconsistent. A

finding of one study was that intact wheat berries had a much lower insulin index than whole wheat bread, but it is not clear whether the greater insulin response to the bread was due to the effect of processing on its fiber or to the type of starch.

Refining high-carbohydrate foods not only removes most of the dietary fiber but also can increase caloric density. It should come as no surprise that the diets of obese persons have been found to be both higher in fat and refined sugar and lower in fiber than the diets of thin people.⁵⁶

Compared to processed, particularly refined, high-carbohydrate foods, most whole grains and starchy vegetables are rich in nutrients. This is another reason to emphasize relatively unprocessed high-carbohydrate foods. It is especially important for persons attempting to lose weight to consume high-carbohydrate foods that have both a high nutrient density and a low caloric density.

End Zone

This review of *The Zone* provides much more useful information than the book itself. Yet my criticisms herein are just the tip of the iceberg. Some of the recipes in *The Zone* violate its dietary dogma. For example, a computer analysis of the recipe for "Breakfast Burritos" (p. 92) revealed that 46.5 percent, rather than 30 percent, of the dish's calories come from fat. It is also high in saturated fat and cholesterol. Furthermore, many of the recipes are high in salt.

You may ask about all those people with serious diseases that, according to the book, improved on Sears' diet. This is merely anecdotal. And, in *The Zone*, Sears contradicts himself, garbles facts, and often exaggerates.

What about those Zone-dieting athletes winning gold medals? Please, these athletes were world-class before they ever heard of Sears and his *BioZone* bars. I don't doubt that some athletes can perform better on a diet higher in fat and protein. For example, heavyweight Olympic weightlifters, professional football lineman, and sumo wrestlers stand to gain from such a diet. Their average life expectancy is nearly 20 years lower than the overall average.

Athletes and couch potatoes alike usually have good days and bad days whose goodness and badness are unrelated to the particular day's food intake. And it seems reasonable to assume that it takes more than dieting à la Sears to experience a "flow" state or to "Enter the Zone."

I suggest a detour.

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Editor's Note

NUTRITION FORUM has been renamed NUTRITION AND HEALTH FORUM. The new name represents the somewhat different direction the newsletter has taken since I became coeditor in early 1994.

For years, I have had a "bee in my bonnet": unnaturalistic healthcare, the subject of *NF*'s now-defunct "Healthcare Esoterica" series. Producing the related index in the previous issue of *NF* enabled me to complete *The Dictionary of Metaphysical Healthcare*, a compilation of about 1,100 descriptions of mystical and supernaturalistic methods related to health. This book, edited by *NHF*'s Dr. Kroger and published by The National Council Against Health Fraud, is available—in printed form and in an expanded diskette version—through LVCAHF, Inc.: (610) 437-1795.

Update: *BioZone* bars, to which Dr. Kenney refers in this issue, are passé. On September 11, I received a mailing from Barry Sears that included a leaflet from Eicotech Foods and Nutrition Products (whose address matches that which *The Zone* gives for Surfactant Technologies). The leaflet portrays the "EicoZone Meal Replacement Bar" as "the easiest, most convenient and delicious way to enter the Zone." Later that day, I phoned the toll-free number in the book. In a prerecorded message, Sears described the EicoZone Bar as "similar to the prototype bar mentioned in my book, but now far more technically advanced." *Mastering the Zone*, a sequel, will become available early next year—*J.R.*

In the Next Issue:

"Why I Am Not a Vegetarian"

WHY I AM NOT A VEGETARIAN

William T. Jarvis

Vegetarianism has taken on a “political correctness” comparable to the respectability it had in the last century, when many social and scientific progressives advocated it. Today, crusaders extol meatless eating not only as healthful but also as a solution to world hunger and as a safeguard of “Mother Earth.” The Physicians Committee for Responsible Medicine (PCRM) aggressively attacks the use of animal foods and has proposed its own food-groups model, which excludes all animal products. Several scientific conferences have focused on vegetarian health. And nutrition policymakers have urgently recommended that people eat more fruits and vegetables.

I disclaimed vegetarianism after many years of observance. Although the arguments in favor of it appear compelling, I have learned to be suspicious, and to search for hidden agendas, when I evaluate claims of the benefits of vegetarianism. Vegetarianism is riddled with delusional thinking from which even scientists and medical professionals are not immune.

Don’t get me wrong: I know that meatless diets can be healthful, even desirable, for some people. For example: (a) Men with an iron-loading gene are better off without red meat, because it contains *heme iron*, which is highly absorbable and can increase their risk of heart disease. (b) Because vegetarian diets are likely to contain less saturated fat than nonvegetarian diets, they may be preferable for persons with familial hypercholesterolemia. (c) Vegetables contain phytochemicals that appear protective against colorectal cancer. (d) Homocysteinemia (elevated plasma homocysteine) approximately doubles the risk of coronary artery disease. Several congenital and nutritional disorders, including deficiencies of vitamins B₆ and B₁₂ and folic acid, can cause this condition. Since folic acid occurs mostly in vegetables, low intakes of the vitamin are less likely among vegetarians than among nonvegetarians. (e) Some people find that being a vegetarian helps to control their weight. Vegetarianism tends to facilitate weight control because it is a form of food restriction; and in our overfed society, food restriction is a plus unless it entails a deficit of some essential nutrient.

However, one need not eliminate meat from one’s diet for any of the foregoing reasons. Apparently, it is ample consumption of fruits and vegetables, not the exclusion of meat, that makes vegetarianism healthful.

Dog Day Afternoon?

The term “vegetarian” is misleading, for it is not a name for people who favor vegetable consumption, but a code

word for those who *disfavor* or protest the consumption of animal foods. The neologism *anticarnivorist* better characterizes the majority of those who call themselves vegetarians. I call myself a “vegetable enthusiast,” because I strongly encourage eating lots of vegetables, including legumes, whole grains, and fruits. I believe that these foods are desirable not only because of their high nutrient density and low caloric density, but also because of aesthetic and gustatory factors. Being a vegetable enthusiast doesn’t entail rejecting the use of meat or animal products.

Most people who categorize vegetarians identify at least five different kinds, based on which types of animal food they consume: *Semivegetarians* consume dairy products, eggs, fish, and chicken; *pesco-vegetarians* consume dairy products, eggs, and fish; *lacto-ovo-vegetarians*, dairy products and eggs; *ovo-vegetarians*, eggs; and *vegans*, no animal foods except honey. From a behavioral standpoint, I categorize vegetarians as either *pragmatic* or *ideologic*. A *pragmatic vegetarian* is one whose dietary behavior stems from objective health considerations (e.g., hypercholesterolemia or obesity). Pragmatic vegetarians are rational, rather than emotional, in their approach to making lifestyle decisions. In contrast, vegetarianism is a “matter of principle” for *ideologic vegetarians*; its appropriateness is a given.

One can spot ideologic vegetarians by their exaggerations of the benefits of vegetarianism, their lack of skepticism, and their failure to recognize (or their glossing over of) the potential risks even of extreme vegetarian diets. Ideologic vegetarians make a pretense of being scientific, but they approach the subject of vegetarianism more like lawyers than scientists. Promoters of vegetarianism gather data selectively and gear their arguments toward discrediting information that is contrary to their dogma. This approach to defending a position is suitable for a debate, but it cannot engender scientific understanding.

Because of the influence of my Seventh-day Adventist (SDA) environment, I practiced vegetarianism for many years. My wife and I even tried to give up consuming all animal products, but this didn’t work. We sometimes muse aloud about the morning we put soymilk on our breakfast cereal. We ended up eating the cereal with a fork because we found the mixture repulsive. We had another unforgettable experience when we ate with a group of vegetarian hippies in the Oregon woods. We were there at their request to advise them on vegetarian eating. They had already prepared the worst-looking vegetarian stew I have ever seen or tasted. It consisted of raw peanuts and a

variety of half-cooked vegetables. After eating it, I had heartburn for hours.

Digestive distress is legendary among SDAs. The heroic attempts by the faithful to chow down on experimental meat substitutes were, to me, a major tip-off that health was not the thrust of their vegetarianism.

Reasons for adopting vegetarianism can be very personal. Some years ago I shared a podium for several days with a vegetarian. It became clear from our informal conversations that he was not religious; so I asked him why he had opted for vegetarianism. He told me a touching story about having been a lonely boy whose closest companion was his pet dog. He said that, one day, as he peered into the dog's eyes, he had come to see the animal as a fellow being. Soon he had applied this view to all animals, and since he could not bear the thought of eating his dog, he could no longer eat other animals.

North by Northwest

Darla Erhardt, R.D., M.P.H., listed five vegetarian postulates: (1) All forms of life are sacred, and all creatures have a right to live out their natural lives. (2) It is anatomically clear that God did not design humans to eat meat. (3) Slaughter is repugnant and degrading. (4) Raising animals for meat is inefficient and misuses available land. (5) Animal flesh is unhealthy because it contains toxins, virulent bacteria, uric acid, impure fluids, and the wrong kinds of nutrients.¹

I find all of these axioms flawed:

(1) The belief that all life is sacred can lead to absurdities such as allowing mosquitoes to spread malaria, or vipers to run loose on one's premises. Inherent in the idea that all life is sacred is the supposition that all forms of life have equal value. The natural world reveals hierarchies in the food chain, the dominance of certain species over others. And most creatures in the wild die (usually the victim of a predator) long before they have reached the genetic limit on their longevity.

(2) The multifarious dietary practices of human populations belie the notion that humans are designed to be vegetarians rather than omnivores. For example, Australian aborigines consume insect larvae and reptiles, Eskimos eat raw meat, and traditional Hindus are vegetarians.

The first SDA physician, John Harvey Kellogg (1852–1943), was a vegetarian zealot. Alonzo Baker, Ph.D., his former private secretary, told me of an incident that occurred circa 1939: Kellogg awakened him in the middle of the night and ordered him to board the morning train for Cleveland. There, Weston Price, D.D.S. [see NF 13:22, 1996], who had just returned from the mysterious high north, was to give a report on Eskimo dietary habits. When Baker returned, he informed Kellogg of Price's finding that Eskimos ate raw meat almost exclusively (*eskimo* literally means "raw meat eater"). Kellogg accused Price of lying.

Perhaps Kellogg disbelieved Price partly because it was widely known that the 1898 Yukon gold rushers had suffered extensively from scurvy. People generally believed that Eskimos derived their vitamin C from berries the snow had preserved. In fact, Eskimos derive vitamin C from the raw meat of animals who synthesize ascorbic acid. If they had cooked their meat, they would have developed scurvy like the gold rushers. (When I visited Northwest Territories, Canada, in 1973, a Franciscan monk who raised beautiful vegetables in a greenhouse in Pelly Bay told me that the Inuits [North American Eskimos] didn't like their taste and wouldn't eat them.)

(3) Whether something is repugnant is highly individual. Hindus who will not eat animal foods readily drink their own urine for the sake of health. And what is repugnant—for example, chores such as changing a baby's diaper or caring for sick people—is not necessarily wrong. Whether such activities are degrading is a matter of opinion. That most prey are eaten while they are still alive testifies to the heartlessness of nature compared to slaughterhouses, where death is generally quick and painless.

(4) The idea that animal-raising is an inefficient way to produce food is half-baked. Animals pull their weight when it comes to land-use and food-production efficiency: They graze on lands unsuitable for crop-growing, eat those portions of plants that are considered inedible (e.g., corn stalks and husks), and provide byproducts and services that ease human burdens.² Many nomadic populations survive on lands that lack farming potential by feeding on animals whose nourishment is coarse vegetation humans can't digest.

(5) The postulate that toxins render meat unfit as food also lacks merit. Plants also contain naturally occurring toxicants, many of which are far more deadly than those of animal flesh.³ Vegetarian evangelists who revel in portraying animal foods as unhealthy disregard the fact that those societies that consume the most animal products enjoy record longevity. They also overlook the reality that the animals they brand as diseased are herbivores whose diet consists entirely of raw vegetation. These animals develop many diseases "despite" becoming vegans after weaning.

Ideologic Vegetarianism

Much of my professional life has been spent studying health fraud, quackery, and related misinformation, and their impact on people's lives. Aware that one's personal philosophy can be a powerful determinant of health, I have tried to

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understand the psychosocial dynamics of the suffering and death that people impose on themselves and their children. I have been struck by how often vegetarianism has been a part of such situations, and I have discerned a recurrent sequence of behaviors: First, the concerned person eliminates reportedly unhealthy foods from his or her diet, beginning with foods that society considers “bad for you” (e.g., sugar, coffee, and white bread). Next, if concerns about food safety grow to neurotic proportions, the person scrutinizes labels and worries about ingredients indicated by terms he doesn’t understand. Then he may patronize health food stores, where clerks and publications can feed his phobias. He may treat modern foods as poisonous. Finally, if he deems vegetarianism not restrictive enough, the “health foodist” may turn to veganism [see NF 13:34–36, 1996]. In my opinion, it is at this point that vegetarianism becomes hazardous, especially for children.

The case of Sonja and Khachadour Atikian illustrates what can happen to those seduced by ideologic vegetarianism. The Atikians were émigrés from Lebanon who—because of unrelenting media barrages focusing on environmental pollution, diet, and health—became overly concerned about the safety and healthfulness of modern foods. Sonja Atikian began shopping at health food stores instead of supermarkets. Gerhard Hanswille, a self-styled herbalist from Germany, taught classes in the rear of a health food store she patronized. Although Hanswille was not licensed to practice medicine, he saw 40 to 45 “patients” day. He treated Ms. Atikian for a sore knee, and she took some of his courses. Hanswille taught that: (a) people should not kill animals, nor consume animal products; (b) God intended cow’s milk to be food for calves, not human babies; (c) eating eggs deprives hens of fulfilling their divinely intended role as mothers; (d) people should not poison themselves or the earth with the unnatural products of modern living; (e) using herbs both as food and as medicine is God’s way; and (f) the medicines of doctors are poisons. “Choose whom you will believe,” said Hanswille, “me or the doctors. You can’t have it both ways.”

Ms. Atikian chose poorly. Except for eating fish occasionally, she followed the herbalist’s advice during pregnancy. She delivered a healthy 8.2-lb girl named Loreie. Hanswille convinced the Atikians that the newborn would become a superbaby if they gave her a vegetarian diet of raw, organic foods. He dissuaded them from having the infant immunized and from continuing to see a pediatrician. And he induced them to rely on him for healthcare advice.

Four and a half months after her birth, Loreie’s weight

was still at the 75th percentile, but when she was 11 months old, breast-feeding—her sole source of animal food—discontinued. Fed only fruits, vegetables, and rice, she eventually stopped growing, slept more and more, and had more and more infections. As the baby’s health spiraled downward, Hanswille assured the parents that her decline was merely “the poisons coming out of her body” and that she would eventually become the superbaby they desired. In 1987, 17-month-old Loreie died of bronchial pneumonia complicated by severe malnutrition. She weighed 11¼ lbs. The Atikians were charged with failing to provide their daughter with the “necessaries of life.” Their defense was that they had truly believed they had been providing the “necessaries of life” when they followed Hanswille’s advice. The judge acquitted them after the discovery that the prosecution had failed to provide important information supporting the couple’s story.

Let’s run through some other examples of ideologic vegetarian extremism:

- It caused mental and growth retardation in two boys underfed from birth to ages 3 and 5. Their mother had become a vegetarian, later eliminated sugar and dairy products from her diet, and eventually adopted a macrobiotic diet.⁴
- Ten cases of nutritional rickets were reported among infants (most of whom were breast-fed) of strict-vegetarian mothers who had not sought medical counsel during pregnancy but had obtained advice from health food stores.⁵
- Scurvy and rickets occurred in two boys, 1½ and 2½ years old, whose parents were adherents of the Zen Macrobiotic diet [see NF 7:17–21, 1990].⁶
- A 36-year-old former college professor who was a follower of the Temple Beautiful diet died of malnutrition attempting to become a “breatharian”—one who supposedly feeds on air alone. First he became a vegetarian, then a fruitarian, then a “liquidarian” (consuming juices only), and finally, a would-be breatharian.⁷
- A 2-month-old boy died because his mother, following the invalid recommendation for colic in Adelle Davis’s *Let’s Have Healthy Children*, overdosed him with potassium.⁸ In a television interview, the mother said that, as she became increasingly estranged toward conventional medicine, she had adopted vegetarianism and then veganism.
- A 24-year-old woman who was head of San Jose State University’s student art program died after taking an extract

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of pennyroyal to induce an abortion. She was described as “a strict vegetarian who was involved in holistic medicine.”⁹

A review of the literature includes reports of cases in which vegetarian zealotry played a role in harm to a child.¹⁰

For the ideologist, vegetarianism is a hygienic religion. It enables believers to practice self-denial. As a religion, vegetarianism attracts the guilt-ridden. It attracts masochists because it gives guilt a boost. And it seduces the unskeptical by causing guilt and/or by instilling false guilt. Guilt leads to self-denial, even asceticism. The belief that salvation is attainable by eschewing worldly pleasures marked the asceticism of early Christian zealots. Similarly, health neurotics with medical problems seem to believe that the more they restrict their alimentary pleasures, the more their health will improve. Fasting, austere diets, enemas, and the ingestion of bitter herbs are consistent with the psychological needs of health neurotics, many of whom shun those voices of conventional medicine and public health that might disenchant them.

Of course, I don't blame ideologic vegetarianism *per se entirely* for tragedies such as those outlined above. Mental or emotional disorders apparently figure in many instances. In such cases, extremism is more to blame. However, this doesn't take ideologic vegetarianism off the hook, for it is a potential fuel for, and a potential igniter of, psychological problems.

Eating by the Book?

SDA vegetarianism is rooted in the Bible, according to which for food God gave humans “all plants that bear seed everywhere on earth, and every tree bearing fruit that yields seed” (Genesis 1:29). Meat is said to have become a part of the human diet after the Flood, when all plant life had been destroyed: “Every creature that lives and moves shall be food for you” (Genesis 9:3). Adventists are taught that the introduction of meat into the human diet at that time decreased the human life span from the more than 900 years of the first humans to today's “three-score and ten.”

However, the Bible warns against confusing dietary practices with moral behavior:

For the kingdom of God is not food and drink but righteousness and peace. (Romans 14:17)

Let no one pass judgment on you in questions of food and drink. (Colossians 2:16)

One believes he may eat anything, while the weak man eats only vegetables, let not him who eats despise him who abstains, and let not him who abstains pass judgment on him who eats. (Romans 14:2-4)

It also seems to condemn vegetarianism:

The Holy Spirit tells us clearly that in the last times some in the church will turn away from Christ and

become eager followers of teachers with devil inspired ideas. These teachers will tell lies with straight faces and do it so often that their consciences won't even bother them. They will say that it is wrong to be married and wrong to eat meat, even though God gave these things to well-taught Christians to enjoy and be thankful for. For everything God made is good, and we may eat it gladly if we are thankful for it. (1 Timothy 4:1-4, *Living Bible*)

SDA Church pioneer Ellen G. White (1827–1915) was a proponent of vegetarianism even though she did not practice it herself. Like the Grahamites of her time, she taught that gradually the earth would become more corrupted, diseases and calamities worse, and the food—particularly animal foods—unsafe. In 1902 she wrote that the time might come when the use of milk should be discontinued. Although White was an advocate of science and chiefly responsible for making SDA healthcare a science-based enterprise, clearly she did not anticipate twentieth-century advances in public health and medical science. Despite the record longevity now enjoyed by people in the developed nations, vegetarian zealots within the church caught up in the doomsday hysteria of the 1990s have decided that the time has come to give up all animal foods and are fervidly preaching veganism.

East of Eden

It is now widely recognized that it is possible to provide all essential nutrients except vitamin B₁₂ without using animal foods. It is noteworthy, however, that it is possible to provide all essential nutrients with a diet composed only of meat. Personal dietary appropriateness—including the value of a diet as a source of essential nutrients and its value as a preventative—for oneself and one's significant others is the foremost dietary consideration of pragmatic vegetarians. In contrast, the overriding dietary consideration of ideologic vegetarians varies with the particular ideology. Typically, their motivation is a blend of physical, psychosocial, societal, and moral, often religious, concerns.

A continual problem for SDAs who espouse the “back to Eden” ideology is the absence of a non-animal food source of vitamin B₁₂. A Registered Dietitian, a vegetarian who wrote a column for a church periodical, asked me if I thought vegans could derive vitamin B₁₂ from organic vegetables that were unwashed before ingestion. I opined that it would be better to eat animal foods than fecal residues. She agreed.

A perennial assumption among vegetarians is that vegetarianism increases longevity. In the last century, Grahamites—devotees of the Christian “hygienic” philosophy of Sylvester Graham (1794-1851)—taught that adherence to the Garden of Eden lifestyle would eventuate in humankind's reclamation of the potential for superlongevity, such as that

ascribed to Adam (930 years) or Methuselah (969 years). I discussed this matter 25 years ago with an SDA physician who was dean of the Loma Linda University (LLU) School of Health. Although he admitted that lifelong SDA vegetarians had not exhibited spectacular longevity, he professed that longevity of the antediluvian sort might become possible over several generations of vegetarianism. SDA periodicals publicize centenarians and often attribute their longevity to the SDA lifestyle. However, of 1200 people who reached the century mark between 1932 and 1952, only four were vegetarians.¹¹ I continue to ask: Where on Earth is there an exceptionally longevous population of vegetarians? Hindus have practiced vegetarianism for many generations but have not set longevity records.

At best, the whole of scientific data from nutrition-related research supports vegetarianism only tentatively. The incidence of colorectal cancer among nonvegetarian Mormons is lower than that of SDAs.¹² A review of populations at low risk for cancer showed that World War I veterans who never smoked had the lowest risk of all.¹³ As data accumulate, optimism that diet is a significant factor in cancer appears to be diminishing. An analysis of 13 case-control studies of colorectal cancer and dietary fiber showed that, for the studies with the best research methods, risk estimates for dietary fiber and colorectal cancer were closer to zero.¹⁴ A pooled analysis of studies of fat intake and the risk of breast cancer that included SDA data showed no association.¹⁵

A meatless diet can facilitate weight control because it is a form of food restriction. But one need not eliminate meat to maintain a healthy weight, and there are many overweight vegetarians. Surely prudence and selectivity overshadow mere abstinence from animal products.

In an interview on the school's Christian radio station in the mid-1970s, an LLU nutrition graduate student (who was not an SDA) claimed that vegetarianism produced superior intellects. To make her case, she stated:

Linus Pauling says that vitamin C improves intelligence. Vegetarians get more vitamin C in their diets than meat-eaters. The probable reason why George Bernard Shaw and Leo Tolstoy were brilliant was because they were vegetarians.

The interviewer agreed, extolling the health and intellect of vegetarians. That Adolf Hitler was a vegetarian went unmentioned during the interview. Also unmentioned was that Jesus Christ, Mohammed, and other eminent moralists were not vegetarians. Animal behavioral scientists have noted that, to survive, meat-eating predators must outsmart their vegetarian prey. However, I believe that all such theories break down because of the difficulty of defining intelligence.

Among the claims of vegetarian superiority that SDAs have made again and again is that most beasts of burden are herbivorous. They note that meat-eating predators such as

wolves and lions have tremendous speed but lack endurance. However, Arctic sled dogs that run the 1200-mile Iditarod cover more than a hundred miles per day—a feat no horse, mule or ox can accomplish.

The idea that vegetarians have superior physical endurance was reinforced in 1974 when a group of male vegetarian runners called “the vegetarian seven” set a 24-hour distance record. This inspired an undergraduate dietetics major to seek me out as a coach for a group of seven female vegetarian long-distance runners. I asked her what their motivations were—something every coach needs to know. She said they wanted to demonstrate the superiority of a vegetarian diet. I asked who would be representing the meat-eaters. She said that, because the event would not be a standard competition, no one would represent the meat-eaters. I revealed to her that three of the male runners had not been vegetarians until training for the record-setting event but merely had pledged to become so. I also told her: that genetic factors, principally the capacity for oxygen uptake, determine distance-running ability; that whether a diet is vegetarian is inconsequential to distance-running ability; and that a 24-hour run is a perilous way to try proving vegetarian superiority. “What will you do,” I inquired, “if seven meat-eating, beer-drinking atheists who are world-class runners decide to beat your record?” She got the point. And although she became an accomplished amateur runner, she didn't use her success to propagandize for vegetarianism.

John Harvey Kellogg sought to prove that vegetarians were physically superior by fielding a Battle Creek College football team, which he personally coached. According to a former player, “Brother” Wright, whenever Kellogg's players lost, he railed at them for cheating on their diets and held them captive until one would say he had broken training rules and eaten meat. Wright stated that sometimes a player would eventually lie that he had eaten meat just to get the team released. He described Kellogg's efforts as “a crusade to prove the superiority of vegetarianism.” Ellen G. White's condemnation of this approach to proving SDA superiority led to a policy restricting interscholastic sports by Adventist schools.

Odorless Doo-doo?

The John Harvey Kellogg character in the film *Road to Wellville* stated that his feces had no more odor than that of “freshly baked biscuits.” One evening I offered a ride home from the university to an elderly colleague, an avid vegetarian. Upon entering my car, he declared: “When I drink carrot juice, my bowel movements have no odor.” Before I could respond, he said: “Rabbits eat lots of carrots, and their feces have no odor.” The thought of someone running around sniffing little piles of rabbit doo-doo almost made me laugh, but I didn't want to be disrespectful. His idea that rabbits eat many carrots intrigued me. I had raised them in my boyhood and discovered that, despite the passion for carrots shown by Bugs Bunny, real

bunnies are not particularly fond of carrots. Furthermore, wild rabbits seldom would have an opportunity to eat carrots. Luckily the ride was short.

The late Pulitzer Prize-winning anthropologist Ernest Becker argued that defecation is most closely associated with humankind's animality and mortality.¹⁶ During a Bible class at an SDA school, I was taught that people did not defecate in the Garden of Eden but utilized the food they ingested in its entirety. Apparently, foul odors did not befit Paradise. (Perhaps the persistence of the miasmatic theory of disease—the theory that diseases are due to foul-smelling emanations from the earth—well into the nineteenth century, when SDA beliefs were developed, reinforced the idea of a poopless Paradise.) I was also taught that roughage became part of the human diet after the Fall. Allegedly, this broadening of the diet to include “the herb of the field” (Genesis 3:18, King James version) occurred because humans were now under the “death sentence” caused by original sin. Whether this reportedly was a voluntary dietary change or part of the curse of being ousted from Paradise is debatable. Some versions of the Bible imply that “the herb of the field” merely meant “wild foods” (New English Version), not a new source of food.

Heavy “PETAing”

In the last century, the pacifist movement was vegetarian because of the belief that meat-eating animals were fierce and vegetarian animals were docile. The British poet Percy Bysshe Shelley claimed that the French revolution had been bloody and the English revolution bloodless because the French ate more meat than the English.¹⁷ Such invalid notions have been discredited, but not abandoned. Some boxers still eat raw meat or drink blood before a fight to increase their aggressiveness.

People who fancy themselves morally superior often have a mission to convert humanity to their worldview. The most violent ideological vegetarians are the animal-rights activists, who have destroyed animal research facilities and threatened researchers' lives. Animal-rights groups such as People for the Ethical Treatment of Animals (PETA) consider animals on par with humans. On April 24, 1996, PETA's Ingrid Newkirk appeared on the television newsmagazine *Day & Date* opposing sport fishing. She began her argument by seeking commiseration for suffocating fish. Then she said that fish were unhealthful food because they contained mercury and other environmental contaminants. The solution, according to Newkirk, was vegetarianism. Her opponent, a TV talk-show host, pressed her into acknowledging the PETA creed. The talk-show host described an on-air encounter she had had with another PETA representative. A scenario had been presented in which the representative's daughter needed a vital organ from a beloved household pet in order to survive. The ethical question had been whether the child's life was

worth more than the pet's. The PETA representative had held that the child had no more value than the pet. Newkirk did not contest the assertion that PETA considers the life of a child no more valuable than that of a pet.

When an LLU medical team transplanted a baboon's heart into an infant whose pseudonym was “Baby Fae,” animal-rights activists picketed the medical center. They seemed disillusioned with SDAs, who have no qualms about prioritizing humans over animals. In October 1992, after a pig's liver had been transplanted into a 30-year-old woman to enable her to survive until a human liver was secured, a representative of PCRM engaged in a televised debate with one of the physicians who had performed the transplant. The representative lamented that the pig's consent had not been obtained.

PCRM appears to be largely a personal forum for its leader, Neal Barnard, M.D., and is said to be substantially funded by PETA. (In fiscal year 1994, donations and grants to PCRM reportedly totaled more than a million dollars.¹⁸) Barnard extols the longevity value of vegetarianism. He has claimed: “It's not genetics or fate that gives people long, healthy lives and cuts other people short; for those who want to take care of themselves, it all comes down to diet.” The surgeon argued that pigs were killed daily for meat, including their livers. The PCRM doctor retorted that the consumption of animal fat (which is highly saturated) was responsible for most deaths in modern society. He cited a study conducted by Colin Campbell in China. Campbell had focused on the relative morbidity for certain diseases without pointing out that life expectancy in China (66 years) is lower than that in the United States (75 years).¹⁹

Because they consider themselves morally superior, many vegetarians exhibit no reservations against using mind-control techniques or terrorism to actualize their agenda. Mind control includes using information selectively to “educate” people about the alleged superiority of vegetarianism. It may also include traumatizing people emotionally to condition them against the use of animal foods. Early in my teaching experience, I attended a meeting of SDA secondary school health teachers where many said that they converted students to vegetarianism by taking them on field trips to slaughterhouses to witness the bloodshed. This strategy offended me even though I was a practicing vegetarian at the time. Having studied for years how people have been manipulated by cults and quacks, it is now clear to me that the slaughterhouse tactic is a form of mind control—that it is as unethical as discouraging little girls from having sex by inducing them to watch a difficult childbirth.

Terrorism involves trying to coerce people to behave in ways the perpetrators desire. In December 1994, to keep people from having turkey for Christmas dinner, self-described animal-rights terrorists claimed they had injected rat poison into supermarket turkeys in Vancouver, British Columbia. The scare caused the destruction of more than \$1 million in turkeys. Apparently, the activists had not foreseen the ensuing slaughter of turkeys as replacements.

Disclosure

Research into vegetarianism by vegetarians always involves at least unconscious bias. All humans have entrenched beliefs—beliefs whose rootedness makes doing related scientific research unwise. Kenneth J. Rothman, Dr.P.H., referred to SDAs in a recent discussion of conflicts of interest in research:

We might expect conflict of interest concerns to be raised, for example, about Seventh Day Adventists who are studying the health effects of the comparatively abstemious lifestyle of their fellow Adventists. Whereas policies at [the *Journal of the American Medical Association*] and *The New England Journal of Medicine* emphasize financial conflicts, *Science* asks authors to divulge “any relationships that they believe could be construed as causing a conflict of interest, whether or not the individual believes that is actually so.” In other words, to comply with disclosure policies at *Science*, authors might need to disclose to editors their religion and sexual orientation along with their financial portfolio.²⁰

Although Rothman argues for letting work stand on its own merit rather than judging cynically any possible connection to a funding source, his example makes the point that motivations more powerful than money can distort data. Science fraud can be extremely difficult to detect, because the perpetrators control the information. Mark Twain observed: “Figures don’t lie, but liars figure!”

I don’t believe that *all* research done by vegetarians is untrustworthy. My experience with the ongoing Seventh-day Adventist Health Study (SDAHS), a series of studies conducted from LLU School of Public Health, has been largely positive. Its chief researcher, the late Roland Phillips, M.D., Dr.P.H., was an outstanding scientist in whose objectivity I had the utmost confidence. He recognized the problem of the influence of social expectations on SDAs responding to questions about their lifestyle. Adventist groupthink makes it likely that SDAs will underreport activities disfavored by the church community (e.g., meat-eating, coffee drinking, and imbibing) and overreport those that are approved (e.g., dining meatlessly and exercising). Phillips seemed to feel that the benefits of vegetarianism per se were limited, and that one must take account of heredity, socioeconomic status, and the total SDA lifestyle. Abstinence from tobacco, access to state-of-the-art healthcare, and strong social support probably are responsible for most of the health benefits SDAs enjoy. The main problem with SDA vegetarian science is how the scientific information is used. To paraphrase

an old Pennsylvania Dutch saying: Among SDAs, when the news about vegetarianism and health is good, “we hear it ever”; when the news is not good, “we hear it never.”

I have received numerous reports from SDA health professionals, and have personal knowledge of other cases, in which church members’ overconfidence in vegetarianism prevented them from obtaining effective medical care. Some reports have involved true believers in vegetarianism who were members of physicians’ families. Some denied symptoms, and their denial kept them from seeking effective intervention in time. Others rejected medical care for “natural remedies” that emphasized diet. The attitudes evidenced are consistent with those identified in cancer patients who had turned to quackery because they believed they had brought the disease upon themselves and could cure it by “natural” practices.²¹ The SDA Church has bent over backward to document the benefits of the SDA lifestyle and to persuade members to adopt vegetarian diets. I would like to see the church seek earnestly to expose the harm that its vegetarian teachings have caused its members. Alas, there’s the rub with ideologic vegetarianism: Objectivity always takes a back seat to proselytism.

The data suggest that most SDAs are reasonable in their approach to vegetarianism. In the 1970s, the SDAHS revealed that only one percent were vegans.²² This may change as vegetarianism becomes more popular in the general population. SDAs tend to be overachievers. If we regard something as “good,” we strive to adopt it completely. If we consider something “bad,” we avoid it completely. SDA vegetarian evangelists have become more aggressive in recent years because of the widespread belief in the SDA community that doomsday is nigh.

I recall an SDA church leader’s reply to the question of whether he ate meat: “I eat just enough to keep me from becoming a fanatic!” This impresses me as good advice for body, mind, and society.

One Less “Ism”

I gave up vegetarianism because I found that commitment thereto meant surrendering the objectivity that is essential to the personal and professional integrity of a scientist. As a health educator, I feel I have an obligation to endeavor to stick to whatever unvarnished facts scientific research uncovers. I can support pragmatic vegetarianism, but I believe that crusading vegetarian ideologues are a danger to themselves and to society.

William T. Jarvis, Ph.D., is a professor of public health and preventive medicine at Loma Linda University and founder and president of The National Council Against Health Fraud.

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Readers' Forum

Dear Mr. Raso,

I would like to comment on the letter from Ruth Rosevear that appeared in the May/June 1996 issue of *NF*. I am very sorry about the tragedy of her daughter's lifelong impairment and untimely death, and I have no doubt that it resulted from Ms. Rosevear's inadequate vegan diet during pregnancy. I believe that it takes careful planning to make an all-plant diet adequate during pregnancy, and there would certainly be a need to supplement with vitamin B₁₂, and perhaps also with vitamin D, calcium, iron, and zinc. It seems that virtually all obstetricians today require their pregnant patients to take a prenatal vitamin/mineral supplement (whether or not they are vegetarian). I don't know what the practice was in 1942, but consider that vitamin B₁₂ was not even discovered until 1951. Therefore, in 1942, it was impossible to make any vegan diet adequate during pregnancy.

There certainly are vegan women today who have given birth to normal, healthy babies. Much documentation exists pertaining to a vegan community in Tennessee called "The Farm." Medical records have demonstrated not only normal births, but also normal, healthy development for these vegan children, and normal percentiles for height and weight and other variables. At The Farm, they make ample use of highly digestible soy protein products, whole grains, and vegetables, and they supplement with vitamin B₁₂. However, I am still of the opinion that if a woman is not fully adapted to a vegan diet, it is unwise for her to switch to it radically at the time of pregnancy.

But the most important thing I have to say is that there is ample evidence that low-fat vegan diets have benefited nonpregnant adults who have suffered from hypertension, cardiovascular disease, rheumatoid arthritis, gout, adult-onset diabetes, and a host of other chronic diseases. It would be a shame, as you suggested, if Ms. Rosevear's letter fostered "a blanket condemnation of veganism."

Ralph C. Cinque, D.C.
Buda, Texas

While I do not regard voluntary veganism as condemnable across the board, I do consider it an unnecessary extreme. The Farm, by the way, gave us spiritual midwifery [sec NF 12:30, 1995].—J.R.

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SHARK CARTILAGE THERAPY AGAINST CANCER

Saul Green

Shark cartilage has displaced laetrile [see NF 12:56, 1995] as the cancer pseudocure of choice. Reportedly, more than 25,000 people a year buy shark-cartilage pills and powders at health food stores.¹ The most influential proponent of so-called shark cartilage therapy is entrepreneur I. William Lane, Ph.D., the coauthor of two books: *Sharks Don't Get Cancer* (1992) and *Sharks Still Don't Get Cancer: The Continuing Story of Shark Cartilage Therapy* (1996). Lane claims or suggests that shark cartilage therapy is effective against osteoarthritis, rheumatoid arthritis, psoriasis, enteritis (inflammation of the intestinal tract), certain eye diseases (e.g., diabetic retinopathy), Kaposi's sarcoma, and cancer of the breast, cervix, uterus, ovary, prostate, kidney, liver, and central nervous system.

Proponents allege that shark cartilage works by inhibiting the formation of blood vessels.

Angiogenesis

The continual emergence of cells in a tumor—cells that are different from their parent cells and that therefore may be resistant to conventional cancer therapy—is the main impediment to successful treatment of advanced cancer. A potential effective approach to cancer is to alter the microenvironmental processes on which tumor growth depends.

Research conducted by Judah Folkman, M.D., in the early 1960s showed that the growth of some solid tumors depends on the formation of blood vessels around the tumor.^{2,3} The term for this complex process is *angiogenesis*. Folkman's work revealed that tumors produce substances that trigger angiogenesis in adjacent tissues and cause the new blood vessels to converge on and enter the tumor.⁴ Folkman hypothesized that inhibition of any step in angiogenesis could be the basis for a mode of cancer

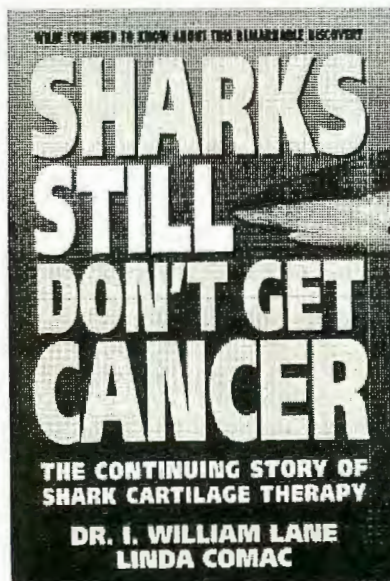
therapy.⁵ Researchers recognized early that angiogenesis occurs only infrequently in normal tissues and that, because normal tissues contain natural inhibitors of angiogenesis, the process concludes after a bed of capillaries has formed. (Angiogenesis normally takes place, for example, during chronic inflammation, wound healing, ovulation, and replacement of intestinal and retinal cells.) In contrast, tumor angiogenesis is not self-limiting; it continues until the tumor is removed or the host dies.⁶

Numerous agents trigger angiogenesis. Besides tumor cells, biological sources of such substances include activated phagocytes (cells that can engulf bacteria and foreign particles), white blood cells, endothelial cells (cells that line particular bodily cavities), and immune system cells in tissue that adjoins a wound or tumor.⁷

Solid tumors require angiogenesis for growth because of their high density (10^8 – 10^9 cells per cubic centimeter); tumor cells that grow separately from one another (as in leukemia) do not.⁸

Since angiogenesis is not unique to tumors, each of its steps represents an opportunity to stop tumor growth by interrupting the process. An inhibitor might:

- prevent the formation, release, or transmission of the angiogenic signal;
- arrest the process by which the signal triggers angiogenesis;
- restrain synthesis of proteins that are structurally essential to blood vessels;
- prevent attachment of new blood vessels to normal tissues; or
- prevent entry of new blood vessels into cancerous tissues.



By *in vitro* experiments, researchers have identified a number of substances that inhibit one or more of these steps. Most of these substances have been isolated, purified, and chemically characterized (vitamin D₃ analogs and sulfated chitin derivatives, for example).^{9,10,11} Three are being tested clinically as treatments for AIDS-related Kaposi's sarcoma.¹²

Angiogenesis Inhibitors in Cartilage

Scientists recognized in 1945 that tumors induce angiogenesis,¹³ but three decades passed before they identified the mechanisms. In 1973 Robert Eisenstein and associates presented the first experimental evidence that cartilage contains inhibitors of angiogenesis.¹⁴ Eisenstein found that, after extraction with the metabolite guanidine, cartilage—which normally does not contain blood vessels—lost its ability to prevent invasion by blood vessels. Eventually researchers learned that cartilage contained certain bioactive enzyme inhibitors.^{15,16} In 1975 Folkman and a colleague found evidence for the presence of an inhibitor of tumor-induced angiogenesis in cartilage from newborn calves.¹⁷ Subsequently, Robert Langer and associates isolated and partially purified an inhibitor from calf cartilage¹⁸ and showed that, after injection into the area around tumors in mice or rabbits, it stopped tumor growth.¹⁹

The scarcity of available cartilage from bony mammals, however, limited the scope of scientific study; thus many researchers considered using shark cartilage instead. Consequently, Langer and a colleague discovered that shark cartilage contains an antiangiogenic agent.²⁰ Despite numerous confirmations of their finding, however, the identity of the inhibitor, the site of inhibition, and clinical proof of its efficacy against cancer in humans have not been reported in the scientific literature.

Shark-Infested Waters?

Alas, sharks rush in where scientists fear to tread. The titles of Lane's two books are misnomers: Sharks do get cancer. Lane himself admits this, but soft-pedals it, in both books. Various forms of cancer in sharks have been reported.^{21,22,23} Indeed, researchers have observed that chondrosarcoma—cancer of the cartilage—is common to all species of shark.

Lane's conclusion that shark cartilage powder can stop tumor growth in humans did not arise from his own research but from the scientific work of others. With a professional background in poultry nutrition and the production of fish meal, Lane spent three years developing a process for powdering shark cartilage. He persuaded Belgian researcher Dr. Ghanem Atassi to feed it to mice with melanomas (malignant tumors).¹ Atassi found that, while some tumors briefly shrunk, their growth resumed and the host mice consequently died. His attempt to repeat these results failed, and Atassi decided not to publish his work.

This, however, did not daunt Lane, who sought human experimentation. He found two controversial alternative-medicine clinics in Tijuana, Mexico, willing to test his shark-cartilage powder on their cancer patients. The first was the Ernesto Contreras Hospital, which treats cancer with laetrile, coffee enemas, and injections of live embryonic sheep cells; the second was the Hoxsey Clinic, where patients are fed herbal potions and rubbed with herbal salves.²⁴ Enemas of a suspension of Lane's shark-cartilage powder were given daily to cancer patients at the clinics; and after some weeks Lane proclaimed the treatment greatly successful. There has been no independent confirmation of this claim.

In 1992 Lane took his shark-cartilage powder to a Cuban hospital, where doctors agreed to treat 29 allegedly terminal cancer patients in a 16-week clinical trial. This time, the "spectacular successes" Lane ascribed to shark cartilage therapy caught the attention of Mike Wallace and the "scientists" at CBS's "60 Minutes."¹ The broadcast newsmagazine dramatized the testimonials of patients who had undergone shark cartilage therapy at the Cuban clinic and thus ignited the shark cartilage craze.

Where's the Evidence?

Medical scientists have determined that the cartilage of calves, cows, and sharks contains an inhibitor of angiogenesis. What evidence is there that ingestion or rectal application of shark cartilage benefits cancer patients?

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There is none!

Catherine Dold¹ interviewed researchers whose work Lane cites. Each refuted Lane's claims. Langer said he has never seen evidence that Lane's shark-cartilage powder acts against cancer in humans. Folkman stated that, because the Mexican and Cuban trials were neither controlled nor peer-supervised, they were not trustworthy. He also noted that gastric acid destroys the antiangiogenic proteins in cartilage; that they are too large to pass through the intestinal wall into the bloodstream; and that their concentrations in cartilage are so low, a patient would have to consume many pounds of it daily to affect the tumor.

The "60 Minutes" public-health fiasco prompted a number of independent reviews of the medical records of the patients treated in Cuba. Investigators for the National Cancer Institute found that the records were incomplete and the results unimpressive. Consequently, the institute decided not to initiate clinical trials of shark cartilage.²⁴ The Office of Alternative Medicine of the National Institutes of


Health was also unimpressed. Its then director, Joseph J. Jacobs, M.D., M.B.A., stated: "It is our view that Lane's claims are unproven, and since there is no demonstrated merit to the use of shark cartilage in the treatment of cancer we do not recommend it."²⁵

Finally, the chief of oncology at the Costa Rican National Children's Hospital stated: "The use of shark cartilage for treatment of cancer is a farce that spells disaster for the shark population in the sea off Costa Rica."²⁶

If the trials of shark cartilage indeed yielded "spectacular" results, why aren't conventional hospitals in Belgium, Costa Rica, Cuba, and Mexico routinely using Lane's powder?

Hard to Stomach

Swallowed food is the object of various degradative processes throughout the gastrointestinal tract. Proteins



SHARK CARTILAGE
A MIRACLE BREAKTHROUGH FROM THE SEA

**Exciting Good News:
Sharks Don't Get Cancer**

For centuries the Chinese have been aware of the benefits of shark cartilage, and have been consuming it as shark fin soup.

The shark is certainly one of the most remarkable creatures on the face of our planet. The shark appears to be the only animal with a natural immunity to cancer and practically every disease known to man. When wounded it heals quickly; it even has five sets of teeth and can form new ones if needed. The shark is also the only animal with a skeleton composed entirely of cartilage: a tough, bone-like tissue that accounts for eight percent of its total weight. **Scientists now believe it is the shark's cartilage skeleton which is responsible for this super immunity.**

Researchers worldwide are investigating the shark's natural resistance to disease. There has been an explosion of medical research on shark cartilage's amazing ability.

What makes shark cartilage so special is that it contains this miracle nutrient at a concentration one thousand times greater than any other natural type of cartilage.

More studies over the past decade exploring the health

benefits of shark cartilage. It's the subject of several new books as well as popular TV news programs.

Now **Alive & Alert** introduces an exciting new product to satisfy consumers rapidly growing appetite for shark cartilage: New Advanced Shark Cartilage capsules.

Alive & Alert Advanced Shark Cartilage is the purest, highest quality source of cartilage available; **Alive & Alert ADVANCED SHARK CARTILAGE** capsules provide 800 mg of 100% pure shark cartilage.

Clinical Uses:

The current medical literature contains much scientific evidence that shark cartilage is a tremendously effective treatment in many degenerative and inflammatory conditions. Amazingly, we look to one of earth's oldest creatures to provide the means to treat many of our devastating and enigmatic diseases.

SHARK CARTILAGE	Retail Price	Your Price
50 Capsules CAT. NO. 204-109	\$25 ⁰⁰	\$20 ⁷⁶
100 Capsules CAT. NO. 204-110	\$39 ⁰⁰	\$31 ⁰⁰
300 Capsules CAT. NO. 204-116	\$107 ⁰⁰	\$85 ⁰⁰

AS SEEN ON TV'S "60 MINUTES"

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From the March/April 1997 issue of *Health Newline*, a product catalog of L&H Vitamins Inc.

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normally are broken down into amino acids and small peptides. Undigested protein does not pass through the intestinal wall into the bloodstream. But what would happen if it did? Since all the protein in our food comes from other species (shark species, for example), the presence of undigested protein in the bloodstream would immediately cause an immune response. Our immune system would identify the protein as foreign and react as if it signified an infection; antibodies would be produced, killer cells would be activated, and the eater would thenceforth be "allergic" to that protein. A later exposure could trigger anaphylactic shock, a sometimes fatal reaction.

A scientifically critical reading of many of Lane's writings—two books, a patent, numerous letters published in various magazines, articles in newspapers and alternative-medicine periodicals, promotional mailings, etc.—raises more questions than answers. For example, despite his claim that he has done extensive research since 1983, the list of references he offers does not indicate publication of his work in any peer-reviewed scientific journal. Surely Lane recognizes the importance of peer review, since he'd "had the good fortune to be exposed to the thinking of two Nobel Laureates."²⁷

If Lane's work were published in a peer-reviewed scientific journal, we might learn, just for example: (a) when, where, and how he identified the antiangiogenic proteins in shark cartilage; (b) how he determined that shark cartilage contains four such proteins; (c) how he obtained proof of their absorbability; (d) how he established effective doses for patients with different types of cancer; and (e) how he discovered that absorbed shark proteins do more good than harm.

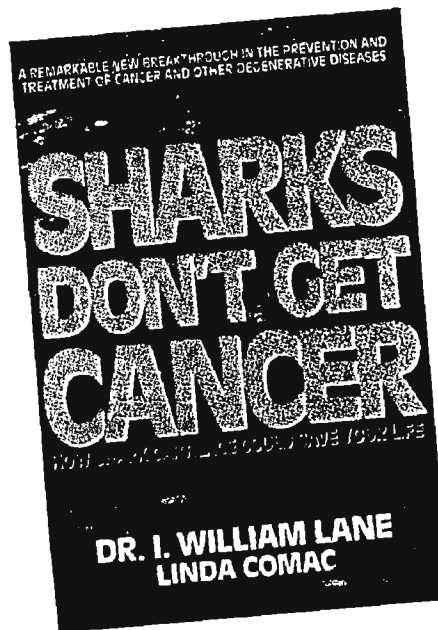
Is It Safe to Go Back into the Health Food Store?

How can desperate cancer patients and other consumers determine which brands of shark cartilage are uncontaminated? They can't! The Food and Drug Administration regulates dietary supplements only minimally. Evidence of (a) high-quality raw material; (b) product purity, sterility, potency; and (c) lack of side effects is not required.

The expression "all natural" is used to promote the shark cartilage sold in health food stores. It implies "non-

As featured on 60 Minutes

Finally, What The World Has Been Waiting For... A Major Cancer Breakthrough



SHARKS DON'T GET CANCER

In 1983, two researchers at MIT published a study showing that shark cartilage contains a substance that significantly inhibits the development of blood vessels that nourish solid tumors, thereby limiting tumor growth. Working independently, researchers at Harvard found that if one could inhibit the development of a new blood network, one could prevent the development of tumor-based cancers and metastasis.

Tying together these two important findings, author Dr. I. William Lane traces further the pioneer work performed in this area and recounts his own involvement in the search for a truly effective treatment of tumor-based cancers. As events and research continue to unfold, shark cartilage may prove to be the first momentous step toward preventing and conquering cancer.

Sharks Don't Get Cancer is the story of this amazing breakthrough.

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Ad that appeared in *Natural Foods Merchandiser* shortly after the "60 Minutes" broadcast

toxic." However, many natural substances are poisonous. In any case, the shark-cartilage products in health food stores are anything but "all natural." Their manufacture involves using chemicals for extraction, purification, and concentration. And supplement manufacturers need not test for contaminants. They need not even test for shark cartilage!

The "recommended" daily intake of shark cartilage is about 60 grams. A patient following this recommendation by taking pills must take 80 per day, at a cost of about \$40!

The Bottom Line

If sound evidence exists that shark cartilage can arrest the growth of malignant tumors in humans, it has not come to light. Shark cartilage therapy can cost as much as \$1,200 a month. Whether ingesting shark cartilage can have adverse effects has not been determined. Even desperate consumers can't afford *not* to ask: "Why should I believe the claims of promoters?"

NHF contributing editor Saul Green, Ph.D., is a biochemist who conducted cancer research at Memorial Sloan-Kettering Cancer Center for 23 years. He is president of ZOL Consultants, Inc., in New York City.

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FOLIC ACID AND HOMOCYSTEINE

Stephen Barrett

Risk factors for heart attacks and strokes include hereditary predisposition, maleness, advanced age, cigarette smoking, high blood pressure, obesity (especially excess abdominal fat), lack of physical activity, and abnormal blood cholesterol levels. The more risk factors a person has, the greater the likelihood that person will develop heart disease. Modifying controllable risk factors—giving up smoking, for example—can decrease the probability of a heart attack.

During the past few years, researchers have linked high blood levels of the amino acid homocysteine to an increased risk of premature coronary artery disease and stroke, even among people with normal cholesterol levels. Apparently, abnormal homocysteine levels contribute to atherosclerosis in at least three ways: (a) direct damage by homocysteine to the lining of arteries, (b) interference with clotting factors, and (c) oxidation of low-density lipoproteins (LDL).

Suspicious about the connection between homocysteine and cardiovascular disease arose some 25 years ago with the observation that people with homocystinuria, a rare inherited disease, were prone to develop severe cardiovascular disease during their teens and twenties. In homocystinuria, absence of the enzyme essential to the metabolism of another amino acid, *homocystine*, causes the accumulation of homocysteine in the bloodstream and its excretion in the urine.

Recent studies suggest that high blood homocysteine levels are as important as high blood cholesterol levels and can affect health independently. About 10 to 20 percent of cases of coronary heart disease have been linked to high homocysteine levels. Both hereditary and dietary factors may be involved.

Homocystinuria is transmitted by a recessive gene that approximately one person in a hundred carries. Those who have inherited the defective gene from both parents have very high plasma homocysteine levels. Those who have inherited it from only one parent do not develop homocystinuria but often have moderately high plasma levels of homocysteine. Abnormal concentrations also occur among people whose diets provide inadequate amounts of folic acid, vitamin B₆, or vitamin B₁₂. But whatever the cause of abnormal levels, supplementation with one or more of these vitamins can lower plasma homocysteine.

Folic acid supplementation alone can lower elevated homocysteine in most people. The usual dose of folic acid is 1 mg per day. If this is not effective, additional supplementation with vitamin B₆ and/or B₁₂ is advisable. The regimen should be lifelong.

Lowering serum homocysteine has been proven to decrease the risk of adverse cardiovascular events among people with homocystinuria.

Researchers have not yet determined whether lowering moderately elevated blood homocysteine decreases the incidence of heart attacks or strokes, but most experts believe that scientific studies will prove it does so. Screening for elevated homocysteine is advisable for people with coronary artery disease that is disproportionate to their risk factors and for people with a family history of premature atherosclerosis. (Some physicians recommend such screening for all patients with atherosclerosis.) Levels above 10 $\mu\text{mol/liter}$ warrant treatment. The effect of supplementation usually becomes apparent within a month. The lab test costs about \$40.

Since folic acid is nontoxic, using it to treat elevated homocysteine seems prudent. Treatment should be supervised by a well-informed physician.

Stephen Barrett, M.D., a retired psychiatrist, coauthored the college textbook *Consumer Health: A Guide to Intelligent Decisions* (Brown & Benchmark, 1997). His website URL is: <http://www.quackwatch.com>.

BRIEFS

BST labeling law overturned. A federal appeals court has invalidated a 1994 Vermont law that required special labeling of dairy products made from milk produced by cows treated with the hormone BST (bovine somatotropin). The court ruled that the law—the only one of its kind in the United States—was unjustified because it implied, incorrectly, that such dairy products were less safe.

Calcium label claim nixed. The FDA has declined to authorize the proposed food label claim that calcium intake can decrease the risk of high blood pressure. The agency concluded that the available evidence lacks consistency.

CANnot. On October 30, 1996, an attorney affiliated with the Church of Scientology bought the name, logo, and

telephone number of the Cult Awareness Network (CAN) from a bankruptcy trustee for \$20,000. CAN's phone number is operational under this attorney's management. For two decades the lawsuit-plagued original CAN, a nonprofit organization, had been this country's largest secular group focusing on providing the public with information on cults. What CAN does now is debatable. In February 1997 David J. Bardin (of the Arent, Fox law firm, in Washington, D.C.), representing the original CAN, filed an appeal on the bankruptcy sale with the U.S. District Court in Chicago.

Chromium and chromosomes. *Tufts University Diet & Nutrition Letter* has presented a comprehensive report on chromium picolinate. [*Tufts University Diet & Nutrition Letter* 14(8):4–6, 1996.] According to the report: (a) claims

that chromium picolinate supplements can help build muscles are unsubstantiated; (b) chromium supplements may prove useful for people with diabetes who have insufficient chromium in their diet, but no long-range tests have been done to determine whether taking them is safe; and (c) researchers who mixed chromium concoctions with hamster cells found that chromium picolinate was more detrimental to chromosomes than chromium alone, picolinate alone, or another chromium compound.

Dial an R.D. The National Center for Nutrition and Dietetics now offers an R.D.-staffed telephone service (1-900-225-5267) for consumers seeking individualized answers to questions about food and nutrition. Once connected to a dietitian, callers are charged \$1.95 for the first minute and 95 cents for each subsequent minute. Calls are expected to average about four minutes. The center's toll-free number (1-800-366-1655) continues to provide recorded information and referrals to dietitians nationwide.

Dictionary expanded. The second (1997) edition of Jack Raso's *Dictionary of Metaphysical Healthcare: Alternative Healthcare, Paranormal Healing, and Related Methods* (The Georgia Council Against Health Fraud), edited by Manfred Kroger, Ph.D., is an oversize, 166-page catalog of medical weirdness. It features succinct, largely nonjudgmental descriptions of more than 1,150 unnaturalistic (mystical and/or supernaturalistic) health-related methods plus an extensive glossary and bibliography. Author Marvin J. Schissel, D.D.S., vice president of the New York Chapter of The National Council Against Health Fraud, described the first edition as "a relentless account of superstitious 'unreason' that is so far removed from scientific knowledge, it is closer to vaudeville than to science." And, in *Skeptical Briefs*, Gary P. Posner, M.D., wrote: "Should you ever develop an inexplicable desire to undergo a round of 'marma therapy' (or perhaps 'Marma Chikitsa' for the more adventurous), this is an excellent reference to turn to, not simply for its concise yet authoritative definitions, but also for its topic-by-topic bibliography." Copies of the 1997 edition are available for \$21.50 each postpaid from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

Ensure ads curbed. Abbott Laboratories has agreed to settle FTC charges that it made false and unsubstantiated claims in an extensive national advertising campaign that promoted the supplemental beverage Ensure to healthy,

active adults. Several of Abbott's advertisements featured people who looked active and healthy, some of whom also appeared thirty- or forty-something. The ads include statements such as "Ensure is recommended number one by doctors as a source of complete balanced nutrition." The FTC alleged that Abbott had represented without adequate substantiation that many doctors recommend Ensure as a meal supplement and replacement for healthy adults, including those in their thirties and forties. An FTC official stated that beverage products like Ensure may benefit people with a medical condition that makes eating difficult, or people who consume them occasionally in lieu of a meal. But the ads' implication that physicians recommend Ensure to healthy, active people so that they can stay that way is indefensible.

"Flight path" examined. Several speakers at a 1995 New York Academy of Sciences symposium warned that the alternative-medicine movement is part of a ubiquitous backtracking from science and rationalism. One speaker criticized the stance that scientific modes of testing are inadequate for evaluating alternativist methods. Another lamented that money is wasted on investigating useless methods while many worthy projects lack funds. The proceedings of this symposium, *The Flight from Science and Reason* (1996), are available for \$95 plus a shipping charge from the Academy (1-800-843-6927).

Health claims on restaurant menus. The FDA has published a final rule concerning nutrition claims on restaurant menus. Unlike food manufacturers, who must base their nutrient-content figures on laboratory analyses, restaurateurs may base them on information from nutrient databases, cookbooks, recipe analyses, or any other "reasonable" source. They may also highlight foods that conform to recognized dietary guidelines.

Homeopathy against warts. The difference between placebos and some homeopathic preparations is academic. Supposedly high-potency homeopathic preparations contain little or none of the so-called basic remedy. The conclusion of a double-blind, randomized trial reported in the British journal *Dermatology* was that homeopathic preparations and placebos were about equally useful (or useless) against warts. The trial involved sixty subjects, all children.

Law enforcement on the “web.” The Federal Communications Commission (FCC), the Federal Trade Commission (FTC), the Securities and Exchange Commission, and 70 state and local law enforcement officials from 24 states have notified operators of over 500 websites (“visited” during a single day!) that they may be promoting illegal pyramid schemes in violation of state and federal laws. Many were promoting financial schemes such as simple chain letters, but some were multi-level companies selling “miracle products.” The FTC now posts news releases to its website (<http://www.ftc.gov>) at 10 A.M. every day. Meanwhile, a Minnesota court has ruled that state authorities can regulate out-of-state advertisers who seek business with Minnesotans through the Internet.

New nutrition anthology. Dushkin/McGraw-Hill has published *Nutrition 97/98*, its ninth annual compendium of nutrition articles. Edited by Charlotte Cooke-Fuller, Ph.D., of Towson State University, with help from Stephen Barrett, M.D., the book features 59 significant articles from newspapers, magazines, newsletters, and scientific journals. Copies are available for \$15 each, plus \$2.50 per order for postage from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

Oxymoron? The only nonmedical services for which Medicare and Medicaid lawfully pay are those that are related to medical care—except in facilities operated or certified by The First Church of Christ, Scientist. Mary (Morse) Baker Eddy (1821–1910) founded Christian Science in 1879. The church’s basic principle is: mind is the only reality; illness, pain, and death are illusory. Christian Science “practitioners” engage in so-called absent healing—specifically, alleged treatment by prayer of patients not in the practitioners’ vicinity. Christian Scientists generally choose “Christianly scientific prayer” over medical treatment. Although Christian Science caregivers do not provide any medical treatment, they have received millions of dollars in Medicare and Medicaid reimbursements. In a letter to the U.S. Senate’s legal counsel released on January 25, 1997, Attorney General Janet Reno stated that this unique coverage violates the Constitutional principle of separation of church and state.

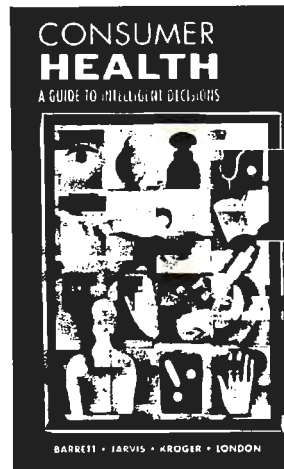
Priorities. Jack Raso has become Director of Publications for the American Council on Science and Health and editor-in-chief of its quarterly magazine, *Priorities*. His e-mail address is: raso@acsh.org.

Textbook updated. The sixth (1997) edition of *Consumer Health: A Guide to Intelligent Decisions* (Brown & Benchmark)

is a detailed 624-page, well-illustrated, exhaustively referenced college text that covers all manner of health-related strategies for consumers. Its 26 chapters include: “Frauds and Quackery”; “Advertising and Other Marketing Practices”; “Mental Health Care”; “Dental Care”; “Alternative Methods”; “Nutrition Fads, Fallacies, and Scams”; “Exercise Concepts, Products, and Services”; “Skin care and Beauty Aids”; and “Health Devices.” All of the authors (Stephen Barrett, M.D., William T. Jarvis, Ph.D., Manfred Kroger, Ph.D., and William M. London, Ed.D., M.P.H.) and one of the three associate editors (Jack Raso) are members of *NHF*’s editorial board. Copies are

available for \$50 each postpaid from LVCAHF, Inc., P.O. Box 1747, Allentown, PA 18105.

Zinc against colds. A study published last year has sharply boosted sales of zinc gluconate lozenges for treating colds. The study compared 50 patients who used the lozenges with 50 who took a placebo. The zinc dose was 13.3 mg every two hours with an average of six per day. “Blinding” was deficient, however, as the zinc lozenges tasted more astringent than the placebos. The zinc-treated patients had fewer cold symptoms but a higher incidence of bad taste, mouth irritation, and nausea. Complete symptom resolution (as reported by the patients) took 4.4 days for the zinc group and 7.6 days for the control group. [Archives of Internal Medicine 125:81, 1996.] *The Medical Letter* reviewed seven other studies and found that only three had shown positive results. It stated: “Treatment with large doses of zinc might decrease the symptoms and shorten the duration of the common cold, but properly blinded confirmatory studies are needed. The long-term safety of taking zinc in doses higher than the Recommended Dietary Allowances has not been established.” [Medical Letter 39:9–10, 1997.] The zinc RDAs for adults are 15 mg (men) and 12 mg (women).



BILL TO LEGALIZE QUACKERY

The Access to Treatment Act (H.R. 746), reintroduced by Rep. Peter DeFazio (D-Ore.), is claimed to permit health-care practitioners to provide "any medical treatment that the individual desires" that does not violate licensing laws. Practitioners may provide the treatment if: (a) it is not known to be directly harmful, (b) the patient is given written notice that the treatment is not government approved, and (c) written information is provided about the nature, anticipated benefits, and foreseeable side effects of the treatment. The act would also require that dangerous outcomes be reported to the Secretary of Health and Human Services and that beneficial outcomes be reported to the NIH Office of Alternative Medicine. Although couched as an effort to preserve patient freedom, the bill's real purpose is to prevent government interference with unscientific practitioners. The alleged safeguards fail to protect patients from practitioners who misrepresent worthless methods as beneficial (as most "alternative" practitioners do). By March 20, H.R. 746 had 43 cosponsors. Many of its proponents spearheaded passage of the 1993 Dietary Supplement Health and Education Act, which has greatly weakened the FDA's ability to regulate false claims made for dietary supplements and herbs. In many states vigorous efforts are also being made to obtain laws that would prevent licensing boards from disciplining "alternative" practitioners.

QUACKERY PROMOTION

The Herb Research Foundation (HRF), whose stated mission is to "disseminate accurate, responsible scientific information on herbs and herbal research," includes several unreliable books in its otherwise valuable catalog. Dr. Stephen Barrett has asked HRF executive director Mark Blumenthal to "purge the catalog of books that contain highly irresponsible or quack advice," including one to which Blumenthal himself wrote the foreword. So far, there is no indication that he will do so.

[continued on page 14]

Exposing Multiple Chemical Sensitivity

*Why this diagnosis is spurious—
and why it persists*

by Stephen Barrett, MD

The expression "multiple chemical sensitivity" ("MCS") is used to describe people with numerous troubling symptoms attributed to environmental factors. Many such people are seeking special accommodations, applying for disability benefits, and filing lawsuits claiming that exposure to common foods and chemicals has made them ill. Their efforts are supported by a small cadre of physicians who use questionable diagnostic and treatment methods. Critics charge that these approaches are bogus and that MCS is not a valid diagnosis.

What Is MCS?

The concepts underlying MCS were developed by allergist Theron G. Randolph, MD (1906–1995), who asserted that patients had become ill from exposure to substances at doses far below the levels normally considered safe. In the 1940s, he declared that allergies cause fatigue, irritability, behavior problems, depression, confusion, and nervous tension in children.

In the 1950s, Randolph suggested that human failure to adapt to modern-day synthetic chemicals had resulted in a new form of sensitivity to these substances. His concern with foods then

expanded to encompass a wide range of environmental chemicals. Over the ensuing years, the condition he postulated has been called allergic toxemia, cerebral allergy, chemical sensitivity, ecologic illness, environmental illness (EI), immune system dysregulation, multiple chemical sensitivity, total allergy syndrome, total environmental allergy, total immune disorder syndrome, toxic response syndrome, 20th century disease, universal allergy, and many other names that suggest a variety of causative factors. These labels are also intertwined with Gulf War syndrome, sick building syndrome, toxic carpet syndrome, and other politically controversial diagnoses.

The complaints associated with these labels include depression; irritability; mood swings; inability to concentrate or think clearly; poor memory; fatigue; drowsiness; diarrhea; constipation; dizziness; mental exhaustion (also called "brain fog" or "brain fog"); lightheadedness; sneezing, runny, or stuffy nose; wheezing; itching eyes and nose; skin rashes; headache; chest pain; muscle and joint pain; urinary frequency; pounding heart; muscle incoordination; swelling of various parts of the body; upset stomach;

William J. Rea, MD, who says he has treated more than 20,000 environmentally ill patients, states that they "may manifest any symptom in the textbook of medicine."

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tingling of the fingers and toes; and psychotic experiences associated with schizophrenia. William J. Rea, MD, who says he has treated more than 20,000 environmentally ill patients, states that they "may manifest any symptom in the textbook of medicine."

MCS proponents suggest that the immune system is like a barrel that continually fills with chemicals until it overflows and symptoms appear. Some also say that a single serious episode of infection, stress, or chemical exposure can trigger "immune system dysregulation." Potential stressors include practically everything that modern humans encounter, such as urban air, diesel exhaust, tobacco smoke, fresh paint or tar, organic solvents and pesticides, certain plastics, newsprint, perfumes and colognes, medications, gas used for cooking and heating, building materials, permanent press and synthetic fabrics, household cleaning products, rubbing alcohol, felt-tip pens, cedar closets, tap water, and even electromagnetic forces.

There is no known mechanism whereby low levels of chemicals or chemicals of widely varied structure can interact adversely with numerous organ systems. Moreover, if the "total body load" concept were valid, the "sum" of small amounts of many unrelated chemicals (as well as infections and psychological stresses) would have the same effects as massive doses of single chemicals—which is not true. Like drugs, chemicals have specific effects whose development and severity depend on the amounts to which individuals are exposed.

Most physicians who diagnose and treat MCS identify themselves as "clinical ecologists" or "specialists in environmental medicine." About 400 of them belong to the American Academy of Environmental Medicine (AAEM, which Randolph founded in 1965 as the Society for Clinical Ecology, is composed mainly

of medical and osteopathic physicians. Clinical ecologists also play a significant role in the American Academy of Otolaryngic Allergy [AAOA], which Randolph helped found in 1941).

MCS has never been clearly defined, no scientifically plausible mechanism has been proposed for it, no diagnostic tests have been substantiated, and not a single case has been scientifically validated.

Clinical ecology is not a recognized medical specialty. Environmental medicine is a component of the specialty of preventive medicine (public health), but the theories and practices of clinical ecology are not. Critics of clinical ecology charge that: (1) MCS has never been clearly defined, (2) no scientifically plausible mechanism has been proposed for it, (3) no diagnostic tests have been substantiated, and (4) not a single case has been scientifically validated.

Many prominent scientific panels have concluded that clinical ecology and its associated concepts are—at best—speculative and unproven.

Dubious Diagnosis and Treatment

Ronald E. Gots, MD, PhD, who has reviewed the medical records of more than a hundred MCS patients, describes MCS as "a label given to people who do not feel well for a variety of reasons and who share the common belief that chemical sensitivities are to blame." He further states: "It defies classification as a disease. It has no consistent characteristics, no uniform cause, no objective or measurable features. It exists because a patient believes it does and a doctor validates that belief."

The fact that MCS has not been meaningfully defined does not deter clinical ecologists from diagnosing it—typically in all or nearly all of their patients. Their diagnostic evaluation usually includes an "ecological oriented history," a physical examination, and laboratory tests. The history-taking procedure may include a lengthy

questionnaire that emphasizes dietary habits and exposure to environmental chemicals. The nature and purpose of the physical examination is unclear because no combination of physical findings can establish the diagnosis. Standard allergy test results are often normal.

The test clinical ecologists consider most important is called "provocation-neutralization." During this procedure, the patient is asked to report any symptoms that develop after various concentrations of suspected substances are administered under the tongue or injected into the skin. If symptoms occur, the test is considered positive and various concentrations are given until a dose is found that "neutralizes" the symptoms. Various chemical, hormones, food extracts, and other natural substances may be prescribed as "neutralizing" agents.

"Neutralization" superficially resembles the desensitization process used by allergists. However, allergists test and treat with substances that produce measurable allergic responses, whereas clinical ecologists base their judgments on subjective responses.

Elimination and rotation diets may be used with the hope of identifying problematic foods. Single-food challenges may also be used. In severe cases, Rea's patients may spend several weeks in an environmental care unit (ECU) intended to remove them from exposure to airborne pollutants and synthetic substances. After fasting for several days, these patients are given "organically grown" foods and gradually exposed to environmental substances to see which ones cause symptoms to recur.

Many clinical ecologists use tests related to immune function or exposure to specific chemicals. Samples of blood, urine, fat, and hair may be examined for various environmental chemicals. Other blood tests may assess immunoglobulins, other

immune complexes, lymphocyte counts, and "antipollutant enzyme" levels. Some of these tests lack an accepted protocol and have not been standardized, and none has been demonstrated to have a consistent pattern of alteration in MCS patients.

Some treatments are based on blood tests that can detect chemicals in concentrations of parts per billion. This enables levels too low to be clinically significant to be misinterpreted as evidence of unusual and harmful chemical exposure. If any "toxin" level is interpreted as abnormal, the patient will be advised that "detoxification" or "purification" can wash the undesirable chemicals from the body. The regimens may include exercise, sauna treatments, showers, massage, herbal wraps, megavitamin therapy (usually including several grams of niacin per day), self-administered "desensitization" injections, and the use of water and air purifiers.

The provocation-neutralization test has been conclusively debunked by a study performed in the early 1980s by researchers at the University of California. The tests took place in the offices of clinical ecologists who had been treating the patients.

During three-hour sessions, the patients received three injections of suspected food extracts and nine of normal saline. Sixteen patients were tested once, and two were tested twice. In non-blinded tests, these patients had consistently reported symptoms when exposed to food extracts and no symptoms when given saline injections. Under double-blind conditions, however, they developed symptoms with 16 of 60 food-extract injections (27%) and 44 of the 180 (24%) salt-water injections. The symptoms elicited by both types of injections were identical and included itching of the nose, watery or burning eyes, plugged ears, a feeling of fullness in the ears,


One woman wore a protective mask while shopping and another woman hung her mail on a clothesline for weeks before reading it, to allow the "toxins" in the ink to dissipate.

WEB WATCH

When it comes to nutrition and health information, the World Wide Web is a combination minefield and library. Is that a solid piece of nutrition reporting—or a pseudo-fact ready to explode on contact? This column helps you figure out which is which. Following is a list of some of the best (most reliable, useful) sites and some of the worst (most unreliable, deceptive, weird, and worthless). Ratings and commentary are by Internet-savvy John H. Renner, MD, president of the Consumer Health Information Research Institute.

BEST

<http://www.mayo.ivi.com/> The Mayo site will amaze and please you with a great variety of nutrition and health information. Check out the "Diet & Nutrition Resource Center."

<http://www.blonz.com.blonz/> A site by nutritionist Ed Blonz, PhD, a syndicated writer and a computer wizard. Be careful—at this site, nutrition info could be fun.

<http://www.reutershealth.com/> This is Reuters Health Information Services—one of the most reliable and up-to-date of all the online sources of health information. For both professionals and consumers.

WORST

<http://www.divafarm.com/noni/> This site gives you music and testimonials and disclaimers stating that this is not medical advice. It also has good lawyers, good graphics, and good (bad?) marketing for a new health food remedy called Noni Juice. This "miracle" is supposed to be just the thing for a host of problems, everything from tuberculosis to menstrual cramps.

<http://www.generation.net/~lord/> This site claims to have an herbal cure for AIDS. I tried to follow up on this one, but they got nervous on the phone.

<http://www.alternativemedicine.com/> This is the online version of *Alternative Medicine Digest*. It has some very strange health information. So strange that I am offering a prize for the best in-depth review of this site by a nutrition professional, skeptic, scientist, or investigative reporter. I will judge all submissions by July. Your prize is a surprise. A nice one. We may even publish some of the comments in *Nutrition Forum*. If your review is good enough, I may ask you to help me review other web pages. Please send your review by e-mail to drreener@msn.com.

ringing ears, dry mouth, scratchy throat, an odd taste in the mouth, tiredness, headache, nausea, dizziness, abdominal discomfort, tingling of the face or scalp, tightness or pressure in the head, disorientation, difficulty breathing, depression, chills, coughing, nervousness, intestinal gas or rumbling, and aching legs. The results clearly demonstrated that the patients' symptoms were placebo reactions. The study also tested the claim that "neutralizing" doses of offending allergens can relieve the patient's symptoms. All seven patients who were "treated" during the experiment had equivalent responses to extracts and saline (*New England Journal of Medicine*, 323:429-33, 1990).

Allergist John C. Selner, MD, and psychologist Herman Staudenmayer, PhD, of Denver, Colorado, have treated MCS patients for more than 17 years. Like Rea, they used an environmental chamber for testing sensitivity to airborne chemicals. However, they reject clinical ecology theories and practices. Using well-designed double-blind tests, they have demonstrated that "universal reactors" may develop multiple symptoms in response to the testing process without being allergic to any of the individual substances administered.

One of their reports describes how they used an environmental chamber to evaluate 20 patients with multiple symptoms attributed to chemical hypersensitivity. During the tests, the patients were exposed to measured amounts of purified air, compressed gasses, and air containing specific chemical concentrations, without knowing which situation was which. None of the patients demonstrated a response pattern implicating the chemicals supposedly responsible for their symptoms. Eighteen reported no symptoms at least once when the suspect chemical was

present. Fifteen reported symptoms at least once when the suspect chemical was absent. In other words, patients reacted to their feelings and beliefs about the test, rather than to the substance in question (*Regulatory Toxicology and Pharmacology*, 18: 44-53, 1993).

The treatment clinical ecologists offer is as questionable as their diagnoses. One observer has commented that the variety of treatments they prescribe "seems limited only by their imagination and resourcefulness." The usual approach emphasizes avoidance of suspected substances and involves lifestyle changes that can range from minor to extensive. Generally, patients are instructed to modify their diet and to avoid such substances as scented shampoos; aftershave products; deodorants; cigarette smoke; automobile exhaust fumes; and clothing, furniture, and carpets that contain synthetic fibers. Extreme restrictions can involve wearing a charcoal-filter mask, using a portable oxygen device, staying at home for months, or avoiding physical contact with family members. Many patients are advised to take vitamins, minerals, and other dietary supplements. "Neutralization therapy," based on the results of provocative tests, can involve administration of chemical extracts under the tongue or by injection.

MCS patients typically portray themselves as immunologic cripples in a hostile world of dangerous foods and chemicals. In many cases, their life becomes centered around their illness. Various companies cater to these beliefs by offering such items as "organic" foods; odor-free personal products; special clothing, household products, and building materials; and even specially outfitted travel trailers. A recent article in *Reason* described how one woman wore a

protective mask while shopping and another woman hung her mail on a clothesline for weeks before reading it, to allow the "toxins" in the ink to dissipate.

Case Studies

Many experts have studied MCS patients and concluded that their basic problem is psychologic rather than physical. The best current data suggest that certain psychologic factors predispose individuals to develop symptoms and to seek out someone who will provide a "physical" explanation of their symptoms. Many of these patients suffer from "somatization disorder," an emotional problem characterized by persistent symptoms that cannot be fully explained by any known medical condition, yet are severe enough to require medical treatment or cause alterations in lifestyle. Some are paranoids who are prone to believe that their problems have outside causes. Others suffer from depression, panic disorder, agoraphobia, or other anxiety states that induce bodily reactions to stress. Many patients are relieved when a clinical ecologist offers what they think they need and encourages them to participate actively in their care. However, the treatment they receive may do them far more harm than good.

In 1986, Abba I. Terr, MD, an allergist affiliated with Stanford University Medical Center, reported on 50 patients

Instead of testing their claims with well-designed research, MCS advocates are promoting them through publications, talk shows, support groups, lawsuits, and political maneuvering.

BE A NUTRITION FORUM CONTRIBUTOR!

If you find any news or information that may be of interest to our readers—such as published articles, news reports, press releases, or relevant personal experience—please send it to us. Mail it to Lewis Vaughn, *Nutrition Forum*, P.O. Box 664, Amherst, NY 14226-0664. We're especially interested in receiving information about enforcement actions by state agencies, lawsuits by victims of quackery, and health-fraud news that may have been overlooked by the national media.

Update on Jeffrey Bland

who had been treated by clinical ecologists for an average of two years. Each of these patients had made a workers' compensation claim for industrial illness. Their treatments included dietary changes (74% of the patients), food or chemical extracts (62%), an antifungal drug (24%), and oxygen given with a portable apparatus (14%). Fourteen of the patients had been advised to relocate to a rural area, and a few were given vitamin and mineral supplements, gamma globulin, interferon, female hormones, and/or oral urine. Despite treatment, 26 patients reported no lessening of symptoms, 22 felt worse, and only 2 had improved (*Archives of Internal Medicine*, 46:145-49, 1986).

In 1989, Terr reported similar observations on 90 patients, including 40 covered in the previous report. He also noted that 32 of the 90 patients had been diagnosed as suffering from "Candidiasis hypersensitivity"—a fad diagnosis considered "speculative and unproven" by the American Academy of Allergy and Immunology (*Journal of Occupational Medicine*, 31:257-61, 1989).

Psychiatrist Donald W. Black, MD, and colleagues at the University of Iowa College of Medicine have described how the misdiagnosis involved can produce psychosocial, financial, occupational, and psychological complications. The psychosocial complications usually stem from recommendations to avoid contact with offending agents. As a result, patients become socially constricted or reclusive. The financial cost can be enormous; for example, a patient may be instructed to add a "safe" room to his house, or rebuild his house according to EI principles. Relocating can be enormously expensive, particularly if it involves quitting one's job or moving long distances to seek a pollutant-free environment. Occupational complications can arise when a person is advised to quit a job or stop working, due to presumed exposure on the job.

Drs. Selner and Staudenmayer have concluded that most people said to be "universal reactors" develop multiple symptoms in response to the testing process without being allergic to any of the individual substances administered.

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Jeffrey S. Bland, PhD, of Gig Harbor, Washington, has been one of the health-food industry's most prolific interpreters of nutrition-related scientific developments. His interpretations consistently favor the use of supplements. A former chemistry professor, he has appeared frequently at trade shows, written and edited publications, produced audio- and videotapes, and conducted seminars for health professionals. He has also been a research associate at the Linus Pauling Institute of Medicine and has directed its nutrient analysis laboratory. Despite government regulatory efforts, he has persisted in making unsubstantiated claims for products he has marketed.

In 1991, the FTC charged that Bland and two of his corporations (HealthComm and Nu-Day Enterprises) had falsely claimed that their diet program could cause weight loss by turning up the body's "heat-producing machinery" so that fat is lost as body heat instead of being stored. The Nu-Day Diet Program, which cost about \$30 per week, included instructional materials, a meal-replacement formula, and a fiber-containing formula said to be a "natural appetite suppressant." The Nu-Day program was promoted with a 30-minute television program entitled "The Perfect Diet," which offered "amazing true stories of people like yourself losing 20, 30, 50 pounds or more, safely, quickly and naturally." Although the television program appeared to be an independent consumer news show that used interviews to report on its discovery of the Nu-Day Diet, it was actually a paid ad. The program identified Bland as "one of the nation's leading nutritional biochemists." The case was settled with a consent agreement in which Bland agreed to pay \$30,000 for redress and to refrain from making the claims that had been challenged. The consent order also requires

future programs of 15 minutes or longer to display messages identifying them as paid ads for the products offered.

In 1995, the FTC charged Bland and his companies with violating the consent order by making unsubstantiated weight-loss claims for several products. In addition, their *UltraClear* dietary program had been falsely claimed to reduce the incidence and severity of symptoms associated with gastrointestinal problems, inflammatory or immunologic problems, fatigue, food allergies, mercury exposure, kidney disorders, and rheumatoid arthritis. The settlement agreement included a \$45,000 civil penalty.

Last year, *Natural Foods Merchandiser* reported that Health-

Comm had acquired a minority interest in Keats Publishing of New Canaan, Connecticut, and that Bland had joined its board of directors. Keats is probably America's most prolific publisher of unscientific information about health, nutrition, and "alternative" health methods. Established in 1971, it has issued more than 400 books, of which over 200 are still in print. It also publishes over 100 "Good Health Guides," most of which promote the types of products sold through health-food stores.

During the past several months, Bland has invited practitioners to join him on the Functional Medicine Section of CompuServe's Natural Medicine Forum, which HealthComm cosponsors. Brochures accompanying the invitation claim that the company's *UltraClear Plus* "provides nutritional support for pathological or imbalanced detoxifiers and may be suitable for patients with" chronic fatigue syndrome, chemical and environmental sensitivity, alcohol and chemical dependency, food allergy, "management of endo- and exotoxicity," and arthralgia and myalgia. These claims are apparently illegal and have been reported to the FTC. **NF**

Despite government regulatory efforts, he has persisted in making unsubstantiated claims for products he has marketed.

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ANTIAMALGAMIST DELICENSED

In November and December 1995, the Colorado State Board of Dental Examiners held 12 days of hearings related to complaints brought against Hal A. Huggins, DDS, the leading proponent of unsubstantiated claims that mercury-amalgam fillings are dangerous. During the proceedings the administrative law judge concluded: (1) Huggins had diagnosed "mercury toxicity" in all patients who consulted him in his office, even some without mercury fillings; (2) he had also recommended extraction of all teeth that had had root canal therapy; and (3) his treatments were "a sham, illusory and without scientific basis." In February 1996, an administrative law judge issued a 71-page report recommending that Huggins's license be revoked. Huggins did not appeal, and his license was subsequently revoked. Copies of the judge's report are available for \$10 (\$12 in Canada) from LVCAHF, P.O. Box 1747, Allentown, PA 18105.

DENTISTRY'S CREDIBILITY CHALLENGED

A reporter who visited 50 dentists in 28 states found that their fees, examinations, and recommendations varied widely (*Reader's Digest*, February 1997, pp. 50-56). The visits cost from \$20 to \$141. The reporter brought along his own x-ray films and told the dentists he had ample insurance coverage. Only 21 of the 50 dentists conducted cancer screening as recommended by the American Dental Association, and only 14 did the recommended periodontal screening. Before embarking on the study, the reporter was checked by four dentists who agreed that he had only one immediate problem (one molar needed filling or a crown), and that work on another tooth might be advisable. Only 12 of the dentists agreed with this appraisal, and 15 failed to note a problem with the molar. One dentist recommended crowning all of the reporter's teeth, at a cost of \$13,440. Other estimates ranged from \$500 to \$29,850. The reporter also visited a dental school clinic where the student and a

department chairman independently recommended capping both teeth, which would cost \$460. When asked how consumers can protect themselves from overtreatment and overcharging, an ADA advisor suggested seeking a second or third opinion so they can have comfort with the practitioner's recommendations, particularly if there is a lot of work to be done. The reporter replied: "I got 50 opinions, and I am not comforted."

NORDICTRACK MISREPRESENTATION STOPPED

In 1996, the FTC settled charges that NordicTrack, Inc., had made unreasonable claims that 70% to 80% of those who had purchased NordicTrack cross-country ski exercisers had lost an average of 17 pounds and that 80% of those who had lost weight had maintained all their weight loss for at least a year. The FTC complaint stated that these figures were flawed because they did not take dietary habits into account and reflected only the experience of highly motivated purchasers who had integrated the machine into their regular exercise program. The company pledged not to make similar claims in the future unless they were backed by well-designed studies. The case is unusual because, unlike most items marketed with misleading claims, NordicTrack's products are well designed and are readily marketable without exaggeration.

NEW PRO-SCIENCE FORCE

The newly formed Council for Media Integrity intends to challenge the media to do a better job of debunking pseudoscientific ideas. Sponsored by the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), council leaders expressed particular concern that the major networks broadcast numerous specials and talk shows that misrepresent pseudoscience and fringe science as genuine science. The council plans to monitor such programs and to attempt to persuade producers, directors, writers, and the general public to leave room for the appreciation of scientific methods of inquiry.

MALPRACTICE VERDICT

A jury in New York City has awarded \$2.5 million in actual damages and \$150,000

in punitive damages to a former patient of Nicholas Gonzales, MD. The woman testified that she had been diagnosed with an early stage of uterine cancer in 1991 and underwent a hysterectomy. Instead of following through with medically recommended radiation and chemotherapy, she consulted Gonzales who discouraged her from following her cancer specialist's advice. Based on his interpretation of a hair test, Gonzales prescribed up to 150 dietary supplement pills a day plus frequent coffee enemas. Later he claimed that the cancer was cured even though it was progressing. It eventually damaged her spine and left her blind. According to an article in the *New York Daily News*, this is the first time punitive damages were awarded in a malpractice case in New York State. In 1994, after investigating six other cases, New York State licensing authorities had concluded: (1) Gonzales's "alternative protocol" did not entitle him to an alternative standard of care; (2) he had failed to correctly interpret signs and symptoms of disease progression; (3) he had treated the patients incompetently; and (4) his record-keeping was inadequate. He was placed on probation for three years with a stipulation that he undergo retraining and his work be supervised by the Office of Professional Conduct.

OUTSTANDING NEWSLETTER

HealthNews, a monthly newsletter from the publishers of the *New England Journal of Medicine*, provides timely analyses of new research and controversial issues. Many of its articles are quackery-related. Subscriptions (\$29) can be ordered through LVCAHF, P.O. Box 1747, Allentown, PA 18105.

"CHIROPRACTIC EDUCATION"

The Foundation for Chiropractic Education and Research (FCER), which funds a large percentage of chiropractic research, is also one of the profession's most prolific sources of misinformation. Its biweekly *Alternative & Natural Medicine Letter* attacks the medical profession, opposes immunization, cites unreliable information sources, and promotes unsubstantiated uses of dietary supplements, herbs, homeopathic products, and "alternative" treatments. **NF**

Is It Right to Promote Unproven Treatments?

by Lewis Vaughn

What do you say to promoters of unproven nutritional treatments who declare, "Why shouldn't I encourage people to try chelated minerals or shark cartilage or megadoses of vitamin X? It can't hurt, and it might help." You could just as easily hear such a statement from a journalist, talk-show host, magazine editor, or health practitioner as you could from the president of a health-products company. The basic question here is whether it's ethical to recommend or promote any unproven treatment—one that has little or no scientific evidence supporting its efficacy. Most nutritionists, physicians, and other professionals would probably say no, but they rarely offer any justification for such an answer.

Generally, medical scientists and health officials oppose the promotion of unproven treatments, sometimes warning that there isn't yet enough evidence to recommend the treatments to the public. Promoters of unproven treatments strongly disagree and sometimes ridicule officials for being "overly cautious" or "too conservative." Their most plausible arguments usually involve an appeal to the relative costs and benefits of a treatment. "What's the harm?" they may ask. "If the treatment itself is harmless, why shouldn't suffering people be given a chance to try it? There may be no strong evidence that it works, but if it does, the benefits to many people would be substantial. The costs to people—in terms of potential physical harm—are low. So on balance, it's best to urge people to try it; the possible benefits outweigh the possible costs." Promoters may believe that

this argument is especially strong if the treatment has some preliminary evidence in its favor or if the monetary outlay for the treatment is low.

But is this really a good argument? Many on both sides in the debate would probably agree that weighing costs and benefits is a valid way to judge the issue. (This approach is based on the fundamental ethical insight that we ought to do what's likely to benefit people and avoid doing what's likely to harm them.) So the question reduces to whether promoting unproven treatments is likely to result in a net benefit to people. Does the promoter's argument show that his promoting leads to such benefit? Actually, this argument fails. It fails because it's too simplistic, neglecting to take into account important factors in the cost-benefit equation.

Slim Chances

One such factor is *probability*. Few people would judge a treatment solely on the magnitude of its proposed benefit or harm. Most would want to take into account the probability that the proposed effects would happen. Someone may claim that rubbing a stone on your belly will cure cancer. The alleged benefit is enormous—but the likelihood of receiving this benefit is almost nil. If someone wanted to sell you such a "cancer-curing" stone for ten dollars, would you buy it? Probably not. The proposed benefit is great but not likely to happen. The cost, though, is a sure thing: if you want the stone, you'll have to pay the price. So on balance, the likely cost, though small, outweighs the unlikely benefits, though great.

But what's the probability that any unproven remedy will be effective? The evidence relating to the remedy can't tell us; by definition, it's too weak to help us figure probabilities. We can, however, make a reasonable assumption. Scientists know that the chances of new hypotheses being correct are very low simply because it's far easier to be wrong than to be right. For the same reason, the likelihood of new health claims turning out to be true is also low. Historically, most health hypotheses, when adequately tested, have been found to be false. In drug testing, for example, scientists may begin with thousands of substances proposed as medicines, some with preliminary evidence in their favor. In the end, after assessing them all, only a meager handful are proven effective in humans. Some promoters misjudge the cost-benefit of recommending a treatment because they either overestimate the probability of its effectiveness or don't consider the factor at all. They seem to assume that the odds of any proposed remedy being effective are close to fifty-fifty, especially if there's some preliminary evidence in its favor. This assumption is false.



Scientists know that the chances of new hypotheses being correct are very low simply because it's far easier to be wrong than to be right.

When we plug realistic probabilities into our moral equation, the wisdom of promoting unproven treatments becomes suspect. Even if an unproven treatment has considerable possible benefits, is harmless, and costs little, it may be no bargain. In general, given the realistic probabilities, the most likely prospect is that the treatment will be ineffective. So, in fact, the odds are excellent that people who buy the treatment will waste their time and money. The likely cost outweighs the unlikely benefits. Promoting the treatment is not likely to result in a net benefit for people, but net harm. The possible benefit of a ten-dollar "cancer-fighting" rock may be great, but the low probability of its working makes buying it a bad deal. Promoting it would be unethical.

Condensed from *How to Think about Weird Things: Critical Thinking for a New Age* by Theodore Schick Jr. and Lewis Vaughn (Mountain View, Calif.: Mayfield Publishing Company, 1995). Reprinted by permission of the publisher.

Hidden Costs

Clearly, the higher the cost of an unproven treatment, the less likely that promoting it will result in a net benefit. But there's more to the cost of an unproven treatment than many promoters realize. The monetary cost can vary tremendously and may not be low at all. (Many unconventional treatments cost hundreds or even thousands of dollars.) Other costs include the direct physical harm that a treatment can cause (nearly all treatments—drugs, surgery, herbs, vitamins, and others—cause some side effects). There's also an indirect cost: A few people (maybe many people) may take the promoter seriously and stop, postpone, or refuse a proven therapy to try the unproven one—a gamble that sometimes has tragic consequences. Then there's the very real emotional pain that false hope can often bring. In these ways, even a harmless therapy can cause harm. All these costs must be factored into the cost-benefit equation. Usually, they just make the promoter's argument weaker.

Now, it's possible that people could apply the cost-benefit approach in their own life and rightly conclude that they *should* try an unproven remedy. They could calculate that any possible benefit, though very unlikely, is well worth the cost because no other treatment is possible or because they consider the cost inconsequential.

Promoters, however, aren't privy to such personal information about those who try unproven remedies. Promoters can only weigh the probable impact of their actions on other people. If they do so honestly, they'll have to conclude that, generally, promoting unproven treatments does more harm than good. **NF**

JOIN THE FORUM

We want to know what you think... about important developments in nutrition misinformation and quackery and about previous articles in *Nutrition Forum*. We also invite questions on topics relevant to *NF*; we hope to answer selected questions in upcoming issues. Send your letters to *NF* Readers' Forum, P.O. Box 664, Amherst, NY 14226-0664.

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They have also found that once patients understand that this can happen, psychotherapy may cure them.

A court case illustrates what can happen when the patient's true problem goes untreated. In 1991, a jury in New York City awarded \$489,000 in actual damages and \$411,000 in punitive damages to the estate of a man who committed suicide at age 29 after several years of treatment by a clinical ecologist in New York City. Testimony at the trial indicated that the patient was a paranoid schizophrenic who thought "foods were out to get him." This type of mental problem may respond well to antipsychotic medication. However, the testimony indicates that the doctor had diagnosed the man as a "universal reactor" and advised that, to remain alive, he must live in a "pure" environment, follow a restrictive diet, and take dietary supplements. The doctor admitted that since 1974, when he began practicing clinical ecology, he had diagnosed every patient he saw as environmentally ill.

MCS in Court

Many claims and lawsuits have been filed to collect workers' compensation and Social Security Disability. Even when the ruling body does not recognize MCS as a disease, it may disregard causation and award benefits to a plaintiff considered disabled by a somatization disorder or other psychological impairment.

Many lawsuits have been based on allegations that chemical exposures cause disease by injuring the immune system. This notion is supported by a network of clinical ecologists and others who misinterpret laboratory data to support claims that virtually any symptom can be caused by exposure to almost anything. They testify that the immune system can become overactive (leading to numerous symptoms) or suppressed (leaving the individual at risk for infection, cancer, rheumatoid arthritis, and other diseases). Some cases involve people who are not physically ill but are afraid that low-dose exposure to environmental chemicals has affected their immune system and may make them susceptible to cancer or other diseases in the future.

Legitimate cases exist where exposure to large or cumulative amounts of toxic chemicals has injured people. But in many of the cases described above, serious immune disorders are being alleged merely because laboratory testing has detected traces of a chemical in the body or has found a minor deviation from "normal" in some measure of immune function. Fortunately, a 1993 U.S. Supreme Court decision has strengthened the ability of judges to exclude unscientific testimony.

Conclusion

"Multiple chemical sensitivity" is not a legitimate diagnosis. It is a phenomenon in which people misinterpret irritant or stress responses as "allergies" or "toxicities" and alter their behavior abnormally. Instead of testing their claims with well-designed research, its advocates are promoting them through publications, talk shows, support groups, lawsuits, and political maneuvering. Many are also part of a network of questionable legal actions alleging injuries by environmental chemicals.

Many people diagnosed with MCS suffer greatly and are very difficult to treat. Well-designed investigations suggest that most of them have a psychosomatic disorder in which they react to stress by developing multiple symptoms. If this is true—and I believe it is—clinical ecology patients run the risks of misdiagnosis, mistreatment, financial exploitation, and/or delay of proper medical and psychiatric care. In addition, insurance companies, employers, other taxpayers, and ultimately all citizens are being burdened by dubious claims for disability and damages. To protect the public, state licensing boards should scrutinize the activities of clinical ecologists and decide whether the overall quality of their care is sufficient for them to remain in medical practice. **NF**

Dr. Barrett, a retired psychiatrist, is a board member of the National Council Against Health Fraud. This article is condensed from a forthcoming 60-page report that can be ordered for \$8 from LVC-AHF, Inc., P.O. Box 1747, Allentown, PA 18105.

SHARK CARTILAGE FLUNKS TEST

A study presented in May 1997 at the American Society of Clinical Oncology's annual meeting found shark cartilage ineffective against advanced cancer in adults with a life expectancy of at least 12 weeks. The study followed 58 people who were prescribed a daily oral dose of shark cartilage as their only form of anticancer treatment. After 12 weeks none achieved a complete or partial response to the shark cartilage treatment. Only ten showed no progression of their cancer, and only two had a quantifiable improvement in quality of life. The researchers concluded: "Shark cartilage was inactive in patients with advanced stages of cancer, specifically in breast, colon, lung, and prostate cancer." The study was sponsored by the Cancer Treatment Research Foundation, Cartilage Technologies (a manufacturer), and Cancer Treatment Centers of America. Last December, Cartilage Technologies announced that it would support no additional research on shark cartilage as a cancer remedy.

BARIATRIC SURGERY CENTER

Two former co-owners of Cancer Treatment Centers of America (CTCA) are now advertising their Michigan-based Bariatric Treatment Centers (BTC) as "the leading center specializing exclusively in treating clinically severe obesity with surgery." A detailed investigative report can be obtained from Ken Garber, Ann Arbor Observer, 201 Catherine, Ann Arbor, MI 48104, or by e-mailing a request to ken@aaobserver.com.

GNC SUED

Charles DeMarco, of Alamonte Springs, Florida, has filed suit against General Nutrition Corporation. The suit papers state that in August 1996 DeMarco had telephoned a GNC store for advice about fatigue, weakness, and yellow skin color. Subsequently, he was advised by the store's "general head nutritionist" that he had jaundice and was referred to a book

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Don't Buy Phony 'Ergogenic Aids'

The real story vs. a mountain of hype

by Stephen Barrett, MD

More than a hundred companies are marketing phony "ergogenic aids," combinations of various vitamins, minerals, amino acids, and other "dietary supplements" claimed to build muscles and/or enhance athletic performance. In 1991, researchers from the U.S. Centers for Disease Control and Prevention surveyed 12 popular health and bodybuilding magazines (one issue each) and found ads for 89 brands and 311 products with a total of 235 unique ingredients. *Health Foods Business* estimates that in 1996, total sales of such products through health-food stores exceeded \$204 million. They are also sold through pharmacies and superstores.

The Start of 'Ergogenic' Myths

The notion that massive amounts of protein are necessary during training have evolved from the ancient beliefs that great strength could be obtained by eating the raw meat of lions, tigers, or other animals that displayed great fighting strength. Today, although few athletes consume raw meat, the idea that "you are what you eat" is still widely promoted by food faddists.

During the early 1900s, when muscles were discovered to contain protein, athletes and coaches mistakenly concluded that protein was the principal component. (Actually, it is water.) These protein beliefs were further reinforced during the 1930s by

Bob Hoffman (1899-1985) and later by Joe Weider (1923-), both of whom published magazines that catered to bodybuilders and weightlifters. They asserted that athletes have special protein needs, that protein supplements have special muscle-building and health-giving powers, and that the most efficient way to get enough protein is by using supplements. The scientific facts are otherwise. Muscle-building is not caused by eating extra protein. It is stimulated by increased muscular work. Once basic protein needs have been met, the small additional amount needed during intense training is easily obtainable from a balanced diet. Few Americans fail to consume adequate amounts of protein.

Hoffman and Weider asserted that protein supplements have special muscle-building and health-giving powers.

Hoffman marketed supplement products and bodybuilding equipment through his York Barbell Company of York, Pennsylvania. A prolific writer, he published two magazines and more than 30 books on fitness and nutrition. For many years, York Barbell's nutritional products were promoted with false and misleading claims. In 1960, the company was charged with misbranding its Energol Germ Oil Concentrate because literature accompanying the oil claimed falsely that it could prevent or treat more than 120 diseases and conditions, including

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from  Prometheus Books

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FROM THE EDITOR

Why Nutrition Forum?

There should be no need for this newsletter. No need for a publication that devotes itself entirely to evaluating and reporting on unfounded claims in popular nutrition. Magazines, newspapers, and TV news programs should cover this beat just fine.

But they don't. In fact, many of them are responsible for the massive proliferation of nutrition misinformation.

In print and on TV, preliminary studies often somehow become *proof* that a nutritional therapy works. In the fantasy world of media hype, personal testimony validates a remedy as well as any scientific research ever could—and does so without a lot of technical mumbo jumbo. Here, health gurus and nutritional entrepreneurs get to say the soothing words that everyone wants to hear without the annoyances of nutritional naysayers and scientific evidence.

There should be no need for this newsletter in today's nutritional marketplace. In a perfect world, the FDA, the FTC, the U.S. Postal Service, and consumer common sense would make it impossible for anyone to make a buck promoting unproven treatments. The real world jolts me as I sift through reports of smart, educated people who have been harmed by a nutrition or health claim too good to be

true, wishful thinking taking its toll with hardly a dissenting voice to be found.

What is needed—and what *NF* offers—is the rational, scientific assessment of nutritional claims and products that are affecting people's lives.

People who promote unproven treatments are frequently single-minded—they offer only *one* explanation for a certain set of facts even though there are several other possible (better) explanations. For example, people may report feeling better after trying a remedy not because the remedy works—but because of natural variations in their condition, because of hidden factors (like changes in diet, exercise, medications, sleep habits, etc.), and because of the placebo effect. Preliminary research may appear to support a particular therapy, but there may be better explanations for the results—like small sample size, invalid control group (or no control group), or publication bias. So to get the whole story on a health claim or on a line of research, you need to consider the alternative explanations. This information is precisely what is so scarce these days—and what *Nutrition Forum* provides. This newsletter is not the *only* source for this information, but it is a major source and, in the field of nutrition, I think the *best* source.

As Editor, I intend to keep it that way. With the help of some of the most dedicated nutritional and medical experts in the nation, I will insure that *Nutrition Forum* continues to offer dietitians, nutritionists, doctors, and general readers this rare commodity.



Lewis Vaughn

JOURNAL SPOTLIGHT

GINKGO COMPLICATION REPORTED

Temporary episodes of blurred vision have been reported in a 70-year-old man who had been taking two tablets a day of Ginkoba for one week (*New England Journal of Medicine* 336:1108, 1997). Physical examination revealed a small area of bleeding into the iris of the eye (the colored portion surrounding the pupil). Ginkoba, an extract of the ginkgo biloba tree, is marketed as a "dietary supplement" to improve mental alertness. One of its chemical components (ginkgolide B) can interfere with blood clotting by inhibiting the action of platelets. Other cases of abnormal bleeding have been reported. For three years following surgery, the patient had been taking aspirin, which has similar anticoagulant action. No further bleeding occurred after he stopped taking Ginkoba but continued to take aspirin. The case should warn people tempted to combine aspirin (proven to reduce the incidence of heart attacks) with vitamin E, garlic, and ginkgo biloba, each of which can exert a significant anticoagulant effect.

HOMOCYSTEINE RISK-FACTOR UPDATE

A Dutch study has compared 131 patients with severe blockages in two coronary arteries, 88 patients with moderate blockage of one coronary artery, and another group of healthy individuals without heart disease. The researchers found a linear relationship between blood homocysteine levels and severity of the coronary blockages: For every 10% elevation of homocysteine, there was nearly the same rise in the risk of developing severe coronary heart disease (*Arteriosclerosis, Thrombosis, and Vascular Biology* 17:989-95, 1997).

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epilepsy, gallstones, and arthritis. In 1961, 15 other York Barbell products were seized as misbranded. In 1968, a larger number of products came under attack by the government for similar reasons. In 1972, the FDA seized three types of York Barbell protein supplements, charging that they were misbranded with false and misleading bodybuilding claims. In 1974, the company was again charged with misbranding Energol and protein supplements. The oil had been claimed to be a special source of vigor and energy. False bodybuilding claims had been made for the protein supplements.

Despite his many brushes with the law, Hoffman achieved considerable professional prominence. During his athletic career, first as an oarsman and then as a weightlifter, he received over 600 trophies, certificates, and awards. He was the Olympic weightlifting coach from 1936 to 1968 and was a founding member of the President's Council on Physical Fitness and Sports.

Weider began bodybuilding as a teenager and was 16 when he launched a newsletter called *Your Physique*. A few years later, he started a company that sold bodybuilding equipment and instructional booklets through the mail. In 1946, Joe's brother Ben joined the business, and they set up the International Federation of Bodybuilders, which promotes the sport worldwide and sponsors competitions. According to press reports, their business empire now grosses over \$500 million annually.

Weider Health & Fitness is the dominant player in the sports-supplement marketplace. It publishes seven magazines, sells bodybuilding equipment, broadcasts "Muscle Magazine" on ESPN, and sponsors many athletic and aerobic events throughout the year. The magazines are *Muscle & Fitness*, *Shape*, *Flex*, *Living Fit*, *Men's Fitness*, *Prime Health & Fitness*, and *Senior Golfer*. The supplements include Anabolic Mega-Pak, Dynamic Life Essence, Dynamic Super Stress-End, Dynamic Power Source, Dynamic Driving Force, Dynamic Fat Burners, Dynamic Liver Concentrate Energizer, Dynamic Sustained Endurance, Dynamic Recupe, Dynamic Body Shaper, and Dynamic Muscle Builder. None of these products appears capable of doing what its name suggests, and none contains any nutrients not readily obtainable from a balanced diet.

In 1984, the FTC charged that ads for Anabolic Mega-Pak (containing amino acids, minerals, vitamins, and herbs) and Dynamic Life Essence (an amino acid product) had been misleading. The FTC complaint was settled in 1985 when Weider and the company agreed not to falsely claim that these products can help build muscles or are effective substitutes for anabolic steroids. They also agreed to pay a minimum of \$400,000 in refunds or (if refunds did not reach this figure) to fund research on the relationship of nutrition to muscle development. Although the forbidden claims no longer appear in Weider ads, similar messages appear in arti-


None of these products appears capable of doing what its name suggests.

Hot but risky?

Creatine has been described as the "hottest" ergogenic supplement of the decade. It is popular because it can increase endurance and speed recovery from strenuous activities, which can enhance strength training for certain sports. However, a significant percentage of users experience cramps, muscle spasms, and pulled muscles. Scientific studies have shown that depletion of creatine stores may be associated with the onset of muscle fatigue and that supplementation can increase muscle creatine levels after a few days. The increase was greatest among vegetarians who were found to have the lowest stores. It is not known whether people with adequate dietary intake to begin with run the greatest risk of trouble with supplements. The NCAA Committee on Competitive Safeguards and Medical Aspects of Sports has urged that research be done to determine whether long-term use is safe and whether certain individuals might be predisposed to negative side effects.

WEB WATCH

Looking for nutrition and health information on the World Wide Web? Beware: You're entering a vast library sprinkled with booby traps. Is that a solid piece of nutrition reporting—or a pseudofact ready to explode on contact? This column helps you figure out which is which. Following is a list of some of the best (most reliable, useful) sites and some of the worst (most unreliable, deceptive, weird, and worthless). Ratings and commentary are by Internet-savvy John H. Renner, MD, president of the Consumer Health Information Research Institute.

BEST

<http://www.dietitian-online.screen.ie/> Clinical Nutrition Online can answer almost any dietary question you can ask. One of the most nourishing sites on the Internet. This site is for dietitians as well as the public.

<http://www.ncahf.org/> Site of the National Council Against Health Fraud—the place to surf to for information about quackery and fraudulent claims.

<http://www.fsci.umn.edu/> The Department of Food Science at the University of Minnesota. This is a super scientific site with a good internal search capability. No recipe for gopher meat was found.

<http://vm.cfsan.fda.gov/> This is the Center for Food Safety and Applied Nutrition at the FDA. A short address with a long list of resources and very accurate information. One of the finest nutrition sites on the Internet. Better mark it.

WORST

<http://utopia.knoware.nl/users/cvdk/urinetherapy/index.html> This site has everything you wanted to know (and did not want to know) about urine therapy. It demonstrates how far afield alternative medicine has evolved. From this site, you can get the details of the next world conference on urine therapy.

<http://www.alternativemedicine.com/> This site is the online version of *Alternative Medicine Digest*, mentioned in the last installment of Web Watch. It has such strange health information that I am offering a prize for the best in-depth review of this site by a nutrition professional, skeptic, scientist, or investigative reporter. I will judge all submissions by July. Your prize is one you're going to like. We may even publish some of the comments in *Nutrition Forum*. If your review is good enough, I may ask you to help me review other web pages. Please send your review by e-mail to drrenner@msn.com.

cles in the magazines and are implied by endorsements and pictures of muscular athletes as well as by names of the products themselves. False and misleading claims have also appeared in a series of 18 booklets published in 1990 by Weider Health & Fitness and marketed through GNC stores.

The Market Grows

During the 1970s, in addition to protein supplements and assorted vitamins, the main products touted to athletes were wheat germ oil and bee pollen (falsely claimed to boost energy and endurance). In the early 1980s, Weider Health & Fitness introduced an "Olympians" line said to have been developed by working closely with "Olympians and nutritional researchers." Most were sustained-release vitamin concoctions that included an exotic ingredient or two. As public interest in fitness grew, several drug companies began falsely claiming that multivitamin or "stress" supplements were just what active people needed.

Life Extension, by Durk Pearson and Sandy Shaw, was published in 1982 and was followed by appearances by the authors on hundreds of radio and television talk shows. The book claimed that supplements of certain amino acids would cause the body to release growth hormone, which would produce muscle growth and fat loss with little or no effort. These claims were based on faulty extrapolations of experiments in which animals were given large doses of these amino acids by injection. Swallowing amino acids does not cause humans to release growth hormone. But the massive publicity garnered by Pearson and Shaw inspired the health-food industry to market hundreds of new products for athletes and would-be dieters. Many of these products are falsely claimed to be "natural steroids" or "steroid substitutes." In the ensuing years, scores of other useless ingredients have been added to "er-

gogenic aids."

Some manufacturers make no claims in their ads but imply them in product names. Many use pictures of athletes to convey their messages. Some make explicit claims in their ads or product literature, while others use simple puffery. Several have published charts suggesting which products are good for specific purposes. Some even market products for specific sports.

False and misleading claims have also appeared in a series of 18 booklets published in 1990 by Weider Health & Fitness and marketed through GNC stores.

Just the Facts

Athletes who eat a balanced diet don't need extra protein or vitamins. In *The Complete Sports Medicine Book for Women*, sports medicine specialist Gabe Mirkin, MD, and gynecologist Mona Shangold, MD, explain why: "You don't need much extra protein even to enlarge your muscles.

For example, 1 pound of muscle contains only about 100 grams of protein, since it is composed of more than 72% water. So if you are gaining 1 pound of muscle every week in an excellent strength training program, you are adding only about 100 grams of protein each week, or about 15 grams of protein each day. Two cups of corn and beans will meet this need—far less than you would expect. In addition, requirements for only four vitamins increase with exercise: thiamin, niacin, riboflavin, and pantothenic acid. These vitamins are used up minimally in the breakdown of carbohydrates and, to a small degree, protein for energy. But you will find them abundantly in food. Furthermore, deficiencies of these vitamins have never been reported in athletes."

What about other products? The most thorough investigation has been conducted by David Lightsey, MD, an exercise physiologist and nutritionist who coordinates the National Council Against Health Fraud's Task Force on Ergogenic Aids. During the past several years, he has telephoned more than 100 companies that market "ergogenic aids." In a recent interview, Lightsey told me: "In each

case, I told a company representative that I had been asked to collect data on the company's product(s) and issue a formal report. After they described the alleged benefits, I would ask how data supporting these claims were collected. As my questions became more specific, their responses became more vague. Some said they could not be more specific because they did not wish to reveal trade secrets.

"I ended each interview with a request for written documentation. Fewer than half sent anything. Most of the studies they sent were poorly designed and proved nothing. The few that were well designed did not support product claims but were taken out of context.

"Some companies claimed that one team or another was using their products. In each such case, I contacted the team management and learned that although one or more players used the company's products, the management had neither endorsed the products nor encouraged their use."

Lightsey believes there are two reasons why many athletes believe that various products have helped them: (1) use of the product often coincides with natural improvement due to training, and (2) increased self-confidence or a placebo effect inspires greater performance. Any such "psychological benefit," however, should be weighed against the dangers of misinformation, wasted money, misplaced faith, and adverse physical effects—both known and unknown—that

BE A NUTRITION FORUM CONTRIBUTOR!

If you find any news or information that may be of interest to our readers—such as published articles, news reports, press releases, or relevant personal experience—please send it to us. Mail it to Lewis Vaughn, *Nutrition Forum*, P.O. Box 664, Amherst, NY 14226-0664. We're especially interested in receiving information about enforcement actions by state agencies, lawsuits by victims of quackery, and health-fraud news that may have been overlooked by the national media.

can result from megadoses of nutrients. Moreover, how many people who are involved in fitness programs or recreational sports need a placebo for inspiration?

Lack of Action

Little government effort has been made to protect consumers from wasting money on "sports nutrient" products. The FTC took the action noted above against Weider Health & Fitness, the market leader. In 1986, the agency acted against A. H. Robins and its subsidiary, the Viobin Corporation, which had been making false claims for wheat germ oil products for more than 15 years. The case was settled with a consent agreement prohibiting representations that the oil could help consumers improve endurance, stamina, vigor, or other aspects of athletic fitness, or that its active ingredient "octacosanol" is related in any way to body reaction time, oxygen uptake, oxygen debt, or athletic performance.

In 1992, the New York City Department of Consumer Affairs (DCA) published a report called "Magic Muscle Pills! Health and Fitness Quackery in Nutrition Supplements." DCA investigators found that manufacturers they contacted for information about their products were unable to provide a single published report from a scientific journal to back the claims that their products could benefit athletes.

Along with its report, DCA issued "Notices of Violation" to six companies whose products it had investigated. It also warned consumers to beware of terms like "fat burner," "fat fighter," "fat metabolizer," "energy enhancer," "performance booster," "strength booster," "ergogenic aid," "anabolic optimizer," and "genetic optimizer." Calling the body-building supplement industry "an economic hoax with unhealthy consequences," DCA officials urged the FDA and FTC to stop the "blatantly drug-like claims" and false advertising used to promote these products.

In 1994, the FTC reached a consent agreement under which General Nutrition, Inc., paid \$2.4 million to settle charges that it had falsely advertised 41 products, most of which had been pack-

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Weight-Loss Herbs: A Review

by Varro E. Tyler

The large headline "12 Top Herbs for Weight Loss" prominently positioned on page 1 of the March 1997 issue of *Natural Pharmacy* proved irresistible.

The article that followed turned out to be an adaptation from the book *Feeling Light—the Holistic Solution to Permanent Weight Loss and Wellness* by herbalist S. Katzman and holistic health professional W. Shankin-Cohen, in collaboration with M. Marshall (Avon Books, 1997). Believing that herbs of any kind are minimally effective—if at all—in promoting weight loss, I read the article to see if there might be something I had overlooked.

A Dozen Errors

Here are the authors' selections of "weight loss herbs" followed by my comments.

Aloe juice: Not to be confused with aloe gel, the juice or latex is such a potent stimulant laxative that many authorities no longer recommend its use.

Burlock: Said to have diuretic properties. None of its purported effects has been confirmed by clinical testing.

Chickweed: There is no acceptable evidence that it possesses therapeutic value.

Dandelion: The leaves have a slight diuretic action; the root is a laxative.

Sassafras bark: Long prohibited from use as a flavor or food additive by the FDA because it contains safrole, a proven carcinogen in small animals.

Yellow dock: This is another stimulant laxative.

Buchu: An old-time diuretic. Once a very popular proprietary drug.

Cleavers: Another diuretic.

Flax: Primarily a bulk laxative.

Horsetail: Has a feeble diuretic effect.

Marshmallow: A soothing demulcent (mild pain reliever of mucous tissue) due to its mucilage; used both externally and internally.

Alfalfa: There is no scientific or clinical evidence to support any significant therapeutic activity of this herb.

None of the herbs in this deceptive dozen has any proven effect on weight loss.

Most of them have some laxative or diuretic action which promotes the temporary loss of water from the body, providing a passing illusion of weight loss. The protracted use of stimulant laxatives, such as aloe juice and yellow dock, and of diuretics (buchu, cleavers) may lead to hypokalemia, i.e., potassium depletion, which can result in cardiac irregularities and even respiratory arrest. Therefore, their long-term use suggested in the article—"Herbs that aid in elimination should become a permanent feature of one's daily diet"—is just plain bad advice. The inclusion of sassafras bark, a banned carcinogen, in an article advocating daily use of such herbs is incomprehensible.

Without Reason

The authors do warn against the use of preparations that contain ephedra and guarana (a caffeine-rich seed). Now this is good advice because chronic use of such preparations may cause severe side effects in patients with hypertension, diabetes, or thyroid conditions. However, they go on to caution against the use of yohimbe or damiana. This is an interesting warning since neither of these herbs has any folkloric reputation as a promoter of weight loss. Instead, they are said to act as aphrodisiacs.

That attribution is undeserved for damiana, an essentially inactive herb. Yohimbe, on the other hand, may be marginally useful in the treatment of psychogenic impotence. However, its use is precluded by undesirable side effects at therapeutic doses. These include nervous excitation, sleeplessness, hypertension, and tachycardia. What occasioned the mention—even negatively—of these alleged aphrodisiacs in a book or an article on possible weight-loss herbs?

Of course, they are just as effective for that purpose as the dozen herbs advocated in the article, which is to say, not at all! **NF**

Dr. Tyler is a Board member of Nutrition Forum; a Distinguished Professor Emeritus of Pharmacognosy, Purdue University; and the author of The Honest Herbal, a classic in the field.

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containing advice on what supplements and herbs might be useful. After ten days he became gravely ill and required two hospital admissions plus a stay in a nursing center. The suit alleges that, as a result of a delay in getting appropriate treatment, DeMarco has become disabled by "a weakened condition, a limp, carelessness, forgetfulness, and a limp." According to an article in *FDA Hotline* (a now-defunct newsletter philosophically aligned with the health-food industry), the store manager has stated that DeMarco's account is false and that no "prescribing" took place.

NEW ANTIQUACKERY FORCE

Dr. Stephen Barrett intends to help improve the quality of health information on the Internet. His Quackwatch web site is growing rapidly. He hopes to recruit hundreds of professionals to evaluate web sites and respond to individual questions. The project will be done under the auspices of Quackwatch, Inc., a nonprofit corporation that was founded in 1969 as the Lehigh Valley Committee Against Health Fraud and was recently renamed. Experts with web access who wish to donate a few hours per month to the project should explore <http://www.quackwatch.com> and contact Dr. Barrett by e-mail.

'HARMFUL VEGETABLES' CLAIM DEBUNKED

Data from a prospective study of 549 pregnant women show no relationship between the intake of various vegetables, the occurrence of vomiting early in pregnancy, and the incidence of adverse pregnancy outcomes (*American Journal of Obstetrics and Gynecology* 176: 179-81, 1997). The analysis, performed by researchers at the University of Minnesota, refuted the notion that eating broccoli, cabbage, cauliflower, garlic, and spinach might cause miscarriages or birth defects, as claimed in the book *Protecting Your Baby-To-Bc: Preventing Birth Defects in the First Three Months of Pregnancy*.

FISH OIL ADVISORY

The American Heart Association has updated its recommendation that fish be consumed as an excellent source of omega-3 fatty acids and a good protein source that is low in saturated fat. Several studies have shown that people who eat fish have fewer heart attacks and a lower overall mortality. The Association's nutrition committee does not recommend taking fish-oil capsules either to prevent coronary artery disease or prevent reclogging of arteries that have been opened by balloon angioplasty. The committee recommends supplements only for patients with high levels of triglycerides that cannot be lowered by drug treatment and who are at risk for pancreatitis and remain under medical supervision. A long-term study of 2107 men showed that those who were including fish in their diet when studied in 1957 subsequently had a lower death rate from coronary heart disease (*New England Journal of Medicine* 336:1046-53, 1997).

FREE HYDRAZINE SULFATE REPORT

In the mid-1970s, hydrazine sulfate was proposed for treating the progressive weight loss and debilitation characteristic of advanced cancer. Based on animal data and preliminary human studies, it has also been claimed to cause tumor regression and subjective improvement in patients. However, three recent trials sponsored by the National Cancer Institute (NCI) demonstrated no benefit attributable to hydrazine sulfate. The largest of the three found that nerve damage occurred more often and that quality of life was significantly worse in the hydrazine sulfate group. After these studies were published, proponents claimed that they were flawed because patients were permitted to ingest tranquilizers, barbiturates, or alcohol, which allegedly would nullify the effect of hydrazine sulfate. The NCI rejected these concerns, and an investigation by the United States General Accounting Office (GAO) found no difference in survival times between the patients who had taken these drugs and those who had not. For a free copy of the GAO report, call (202) 512-6000 and request Document No. HEHS-95-141.

ALCOHOL COUNTERADVERTISING

The National Council on Alcohol Abuse, Mothers Against Drunk Driving, and 22 other groups have petitioned the Federal Communications Commission to require stations that broadcast ads for alcoholic beverages to provide significant amounts of free time for warnings about the health and safety risks of excessive drinking. An Associated Press story states that about 2,000 radio and television stations air about \$750 million worth of beer and wine ads annually. The petitioners are worried that alcoholic beverage ads will increase sharply because, last year, the liquor industry abandoned its long-held voluntary ban on broadcast advertising. ABC, CBS, NBC, and Fox have said they won't accept liquor ads, but some television outlets have begun airing them.

HEALTH-FOOD STORE SALES

Health Foods Business estimates that 39.9% of sales in health-food stores last year were for vitamins and other supplements. Based on its annual survey, the magazine estimated that 9,789 stores grossed \$3.05 billion for these products, up 38% from 1995. Total sales for all products were \$7.74 billion (up 27%), including \$1.5 billion for herbs and herbal teas (up 62%) and \$267 million for books (up 44%). Homeopathic remedies accounted for 12.1% of the vitamins/supplements category.

IRON OVERLOAD SCREENING

The U.S. Centers for Disease Control and Prevention (CDC) recommends that adults be screened for hereditary hemochromatosis, a genetic disorder in which increased iron absorption in the gastrointestinal tract causes iron to accumulate in the body and causes arthritis, cirrhosis, diabetes, impotence, heart failure, and other problems. The screening can be done with a transferrin saturation test, which costs about \$2. The recessive gene for hereditary hemochromatosis was discovered in 1996. About 10% of Americans carry the gene, and about 1.5 million have the disease (*Morbidity and Mortality Weekly Report* 45:991-93, 1996). A gene test is available but costs about

\$200. Formal CDC guidelines are expected within the next year.

MCT OIL FLUNKS TEST

Health-food stores sell oil derived from medium-chain triglycerides (MCTs) as an alternative to olive or canola oil. It allegedly provides athletes with an energy boost without raising their serum cholesterol level. However, researchers at the University of Texas have demonstrated that the body converts MCTs into long-chain triglycerides, which do raise LDL cholesterol levels (*Southwestern News*, University of Texas Southwestern Medical Center, Jan 2, 1997).

PASSIVE SMOKING RISK

A prospective ten-year study has found that female nonsmokers who had been regularly exposed to cigarette smoke by co-workers or companions had a 91% higher incidence of heart attack or death than nurses who were not subjected to smoke. The project involved 32,046 nurses, ages 36 to 61, who had not been diagnosed with coronary heart disease when the study began in 1982. More heart attacks occurred with regular exposure than with occasional exposure. The data provide strong evidence that passive smoking is a major contributor to heart disease (*Circulation* 95:2374-79, 1997).

SUNRIDER PRESIDENT INDICTED

On January 7, 1997, the *Wall Street Journal* reported that Sunrider International's president Tei Fu Chen and his wife had been indicted for conspiracy, tax evasion, and smuggling. Sunrider is a multilevel company that markets herbal products. The article said that the Chens had (1) underreported their 1987-90 income by more than \$125 million, (2) used foreign companies they controlled to overcharge Sunrider for ingredients so the company could understate its profits, (3) wired millions of dollars to pay the inflated charges, but "recycled" the money to purchase U.S. real estate and Chinese antiques, and (4) filed falsely low customs declarations to reduce the import duty on dozens of art works.

'Wild Yam Cream' Threatens Women's Health

by Timothy Gorski, MD, F.A.C.O.G.

Many women are being encouraged to buy and use "Wild Yam Cream," which is said to offer relief from premenstrual and menopausal symptoms. The preparation is made by a company called "NATURAL efx" and is promoted with materials that include testimonials, the recommendation of a "Dr. Betty Kamen," and citations of the medical literature purported to support the claims being made.

According to this promotional literature, "Hormonal Imbalance!!!" and "Estrogen Dominance" cause "Cramps, Migraines, Bloat, Breast Tenderness, Hot Flashes, Can't Lose Weight, Lack of Energy, Depression—Mood Swings, Fibroid Tumors, Endometriosis—Infertility, Family History Female—Related Cancer, Foggy Thinking, Perimenopause, [and] Losing Height." These conditions are said to be effectively treated by the application of the product twice daily. Also claimed is that the cream "Enhances libido, Improves energy, stamina and endurance, Stimulates the body's own production of estrogen, progesterone, testosterone, [and] other hormones," and that "Women report [an] overall feeling of well being and euphoria." In addition, it's asserted that "synthetic progestins have serious side effects" whereas "natural progesterone has none" and that the only reason that the former is used is that it can be patented. Finally, even men are claimed to benefit from the product, which is said "to help balance testosterone with no feminizing effects."

There is, of course, reason to suppose that hormones play a part in several of the conditions mentioned. For some of these conditions, though, this role remains uncertain or unlikely. It is certainly unwarranted to say that "Estrogen Dominance" is the cause of all the disorders mentioned and that a progesterone product can prevent, alleviate, or cure them. In premenstrual syndrome, for example,

double-blind controlled trials have demonstrated that progesterone supplementation is no better than a placebo. Also blatantly false is the claim that synthetic progestins are dangerous whereas natural progesterone is harmless. Progesterone in any form may cause side effects. In addition, the major synthetic progestin now in use (medroxyprogesterone) has been off patent for some time. It is generally preferred over progesterone—which is also produced synthetically—because it is much better absorbed when taken orally.

The more blatantly erroneous claim is that the Mexican yam (*Dioscorea villosa*) from which the cream is supposedly made is a source of progesterone. It is not. In fact, the main hormonally active substances present in the plant would probably be estrogenic. Extracts of *D. villosa* do have significant amounts of the substance diosgenin. The plant is therefore very useful because in the lab—not in the human body—diosgenin can be used to synthesize steroid hormones including progesterone. Indeed, it was this discovery that led to the first commercially available oral contraceptives. The proges-

A NATURAL PREDICAMENT

Herbal marketers want to have their cake and eat it too. While claiming that their products are potent, they also demand complete freedom to market them. Each "natural" product is either (a) no better than a placebo or (b) exerts a pharmacologic effect. Products no better than placebos should be banned as frauds. Those that are potent should be regulated as drugs and carry adequate instructions for their intended uses. This is especially true for hormones and other products that can affect many body systems.

terone listed among the ingredients in Wild Yam Cream may very well have been derived in this way via the test tube from naturally occurring diosgenin. But that, of course, isn't mentioned in the product literature.

Also left unmentioned is the fact that, once introduced into the body by any effective means (including transdermally), the progesterone molecule can be metabolized into a wide variety of other compounds including estrogens, androgens, and even corticosteroids. Indeed, all of these vital hormones are the products of the continuous production of progesterone and its physiologic conversion into these hormones in the ovaries, testes, and adrenal glands. Part of the usefulness of synthetic progestins, on the other hand, is that they are not subject to these biochemical transformations but are able to exert their desired effects until metabolized and excreted.

Thus, not only is there little reason to suppose that Wild Yam Cream would be helpful for the medical conditions for which it is being promoted, but it is doubtful that it ever could be as useful as synthetic progestin.

The greatest danger posed by this product and its deceptive promotion is that it will lead many menopausal women to forego or even discontinue indicated hormone replacement therapy (HRT), which has enormous proven value in alleviating hot flashes, vaginal atrophy, and other symptoms; reducing bone loss; and preventing atherosclerosis. This is especially tragic since so many women already have trouble maintaining a consistent HRT regimen. The last thing American women need is another unproven "natural alternative" promoted by a campaign of deceit at the expense of their life and health.

Besides all these concerns, Wild Yam Cream costs more. A month's supply of it costs about \$27. A month's supply of the HRT prescription drugs Premarin[®] and Estrace[®] costs \$12 and \$18, respectively. **NF**

Dr. Gorski practices obstetrics and gynecology in Arlington, Texas, and is president of the Dallas-Fort Worth Council Against Health Fraud.

[Continued from page 21]

aged by other manufacturers. The products included Weider's Super Fat Burners, eleven other "muscle builders," and five other phony "ergogenic aids." No action was taken against the other manufacturers. The FTC's staff is well aware that the "sports nutrition" marketplace needs cleaning up, but it lacks the resources to pursue the majority of offenders. A Trade Regulation Rule that would govern the entire industry could make enforcement more efficient, but the agency has expressed no interest in this approach.

The FDA has the legal right to ban claims that the products stimulate hormone activity or alter the body's metabolism. (Claims of this type enable the agency to classify them as drugs and ban unapproved uses.) In 1994, David Light-

sey and I petitioned the FDA to ban all ingredients in these products that had not been proven safe and effective for their intended use and to issue a public warning that the FDA does not recognize them as effective. The agency replied that our petition "did not contain scientific evidence that the claims described in the petition were such that products are . . . unapproved new drugs" and that it "did not provide scientific evidence that would allow the FDA to evaluate the validity of the claims." **NF**

Dr. Barrett is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud. His best-known book is The Vitamin Pushers: How the "Health Food" Industry Is Selling America a Bill of Goods (Prometheus, 1994).

READERS' FORUM

LEGAL DÉJÀ VU

I was interested to read the "Briefs" article (March/April, 1997) detailing the Access to Treatment Act reintroduced to the House of Representatives by Mr. DeFazio (D-Oregon). The details of this bill were startlingly familiar to me, as I recognized the similarity to House Bill 1255 introduced in to the South Dakota State Legislature this year.

During this legislative session, I had the pleasure of testifying against HB 1255 before the House Health and Human Services Committee and am happy to note that the bill was defeated *in committee*. In assisting the committee, I included information on reportable diseases as outlined by South Dakota law and provided a copy of the relevant Code of Federal Regulations (FDA 21 CFR Part 50 Subpart B). Additional testimony against HB 1255 was provided by the Director of the State Board of Nursing.

Despite this year's legislative success with HB 1255, I suspect that similar (or more sophisticated) legislation will surface in the upcoming 1998 session. I am virtually certain that South Dakota is not and shall not be the only state faced with legislation of this nature.

With this in mind, I am making available to interested parties a copy of the outline I developed for testifying before the committee (members of the com-

mittee commented that it was very helpful in achieving defeat of the bill). For copies, call (605) 341-8828.

Michael P. Elston, MD
Area Network Coordinator,
State of South Dakota
National Council Against Health Fraud, Inc.

THE INDEX, PLEASE

Now that we've a new Editor, retrieved name, and re-iterated roots, perhaps you can again publish a *yearly subject index*. I've found this invaluable in researching info and for fueling my debates. Please re-institute the index!

John B. Fenger, MD
Phoenix, AZ

Editor: We will indeed again provide a subject index to our readers. Look for it in the November/December issue. **NF**

JOIN THE FORUM

We want to know what you think . . . about important developments in nutrition misinformation and quackery and about previous articles in *Nutrition Forum*. We also invite questions on topics relevant to *NF*; we hope to answer selected questions in upcoming issues. Send your letters to Readers' Forum, P.O. Box 664, Amherst, NY 14226-0664; please include your daytime telephone number.

PHARMACISTS EMBRACING HERBS

Health-food trade publications report that the percentage of pharmacies carrying herbal products is growing rapidly. The increase is attributed to greater consumer interest and to decreased profits on conventional drugs (due to managed care). The percentage of pharmacy schools offering courses in pharmacognosy (the science of plant medicine) has also increased.

SUPPLEMENTS AND HEALTH-FOOD-STORE CUSTOMERS

In a recent study, consecutive health-food-store customers reported taking 5.9 products per person (*Journal of the American Board of Family Practice* 10:265-71, 1997). The participants were recruited during a 3-week period at two stores in Milwaukee suburban areas. Of the 194 customers who were asked to be interviewed later by telephone, 136 (70.1%) completed the interview process. The participants reported taking a total of 805 supplement products. Most (84.3%) considered themselves healthy but took supplements for preventive purposes. The rest took products to treat perceived health problems. Nearly 80% based their use on their own investigation rather than that of a health professional. About 10% of the customers were taking potentially toxic megadoses of vitamins A or B₆.

THE \$20 MILLION DUCK

Ocilloccoccinum, a homeopathic product "for the relief of colds and flu-like symptoms," is reportedly made by incubating small amounts of a freshly killed duck's liver and heart for 40 days. The resultant solution is then filtered, freeze-dried, rehydrated, diluted 1:100 repeatedly, and used to impregnate sugar granules. After 200 serial dilutions, the likelihood of a single molecule of duck heart or liver remaining would be 1 in 100²⁰⁰. The number 100²⁰⁰ vastly exceeds the estimated number of molecules in the universe. In its February 17, 1997 issue, *U.S. News & World Report* noted that in 1996 only one duck was needed to manufacture the product, which had total sales of \$20 million.

[continued on page 30]

The 'Dietary Supplement' Mess

Commission Report Issued

by Stephen Barrett, MD

In the early 1990s, Congress began considering two bills to greatly strengthen the ability of federal agencies to combat health frauds. One would have increased the FDA's enforcement powers as well as the penalties for violating the Food, Drug, and Cosmetic Act. The other would have amended the Federal Trade Commission Act to make it illegal to advertise nutritional or therapeutic claims that would not be permissible on supplement labels. During the same period, the FDA was considering tighter regulations for these labels.

Alarmed by these developments, the health-food industry and its allies urged Congress to "preserve the consumer's freedom to choose dietary supplements." To whip up their troops, industry leaders warned retailers that they would be put out of business. Consumers were told that unless they took action, the FDA would take away their right to buy vitamins. These claims, although bogus, generated an avalanche of communications to Congress.

The end result was a law that greatly weakened the FDA's ability to protect consumers. Called the Dietary Supplement Health and Education Act (DSHEA) of 1994, it defined "dietary supplements" as a separate regulatory category and liberalized what information could be distributed by their sellers. It also created an NIH Office of Dietary

Supplements and directed the President to appoint a Commission on Dietary Supplement Labels to recommend ways to implement the act. The Commission's recommendations were released on June 24, 1997. (See "Recommendations from the Dietary Supplement Commission.")


Expanded Definition

The Food, Drug, and Cosmetic Act defines "drug" as any article (except devices) "intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease" and "articles (other than food) intended to affect the structure or function of the body." These words permit the FDA to stop the marketing of products with unsubstantiated "drug" claims on their labels.

To evade the law's intent, the supplement industry is organized to ensure that the public learns of "medicinal" uses that are not stated on product labels. This is done mainly by promoting the ingredients of the products in books, magazines, newsletters, booklets, lectures, radio and television broadcasts, and oral claims made by retailers.

DSHEA worsened this situation by increasing the amount of misinformation that can be directly transmitted to prospective customers. It also expanded the types of products that could be marketed as "supplements." The most logical

The end result was a law that greatly weakened the FDA's ability to protect consumers.

from  Prometheus Books

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definition of “dietary supplement” would be something that supplies one or more essential nutrients missing from the diet. DSHEA went far beyond this to include vitamins; minerals; herbs or other botanicals; amino acids; other dietary substances to supplement the diet by increasing dietary intake; and any concentrate, metabolite, constituent, extract, or combination of any such ingredients. Although many such products (particularly herbs) are marketed for their alleged preventive or therapeutic effects, DSHEA has made it difficult or impossible for the FDA to regulate them as drugs. Since its passage, even hormones, such as DHEA and melatonin, are being hawked as supplements. DSHEA also prohibits the FDA from banning dubious supplement ingredients as “unapproved food additives.” The FDA considered this strategy more efficient than taking action against individual manufacturers who made illegal drug claims. Since DSHEA’s passage, the only way to banish an ingredient is to prove it is unsafe. Ingredients that are useless but harmless are protected.

‘Nutritional Support’ Statements

DSHEA allows dietary supplements to bear “statements of support” that: (1) claim a benefit related to classical nutrient deficiency disease, (2) describe how ingredients affect the structure or function of the human body, (3) characterize the documented mechanism by which the ingredients act to maintain structure or function, or (4) describe general well-being from consumption of the ingredients. The statement “calcium builds strong bones and teeth” is said to be a classic example of an allowable structure/function statement for a food. What constitutes an allowable statement for a supplement has not been specified either by law or by regulation.

To be legal, a “nutritional support” statement must not be a “drug” claim. In other words, it should not suggest that the product or ingredient is intended for prevention or treatment of disease.

The Dietary Supplement Commission expressed concern that “some statements of nutritional support are in fact akin to drug claims.” Some members be-

lieve that claims related to organs (such as “supports the eyes” or “supports the cardiovascular system”) are really drug claims and that DSHEA has created a loophole for such claims. Some members are particularly concerned about statements that mention an acute effect on the structure or function of a major system (such as “reduces heart rate”).

Actually, few statements about the biochemical or physiologic properties of nutrients have practical value for consumers. By definition, every essential nutrient is important to proper body function. Simple statements about nutrient function are more likely to be misleading than helpful. A statement such as “vitamin A is essential to good eye function” could suggest: (1) people need to take special steps to be sure they get enough, (2) extra vitamin A may enhance eyesight, and (3) common eye problems may be caused by vitamin A deficiency or remedied by taking supplements. To be completely truthful, a “nutritional support” statement about vitamin A would have to counter all three misconceptions and indicate that people eating sensibly don’t need to worry about whether their vitamin A intake is adequate. In other words, truthful statements about nutrient supplements would have to indicate who doesn’t need them. No vitamin manufacturer has ever done this or ever will.

Since herbs are not nutrients, the concept of “nutritional support” statements for herbs is absurd. The Dietary

BE A NUTRITION FORUM CONTRIBUTOR!

If you find any news or information that may be of interest to our readers—such as published articles, news reports, press releases, or relevant personal experience—please send it to us. Mail it to Lewis Vaughn, *Nutrition Forum*, P.O. Box 664, Amherst, NY 14226-0664. We’re especially interested in receiving information about enforcement actions by state agencies, lawsuits by victims of quackery, and health-fraud news that may have been overlooked by the national media.

Supplement Commission noted: "Many botanicals now are being marketed with statements of nutritional support that suggest only indirectly the type of therapeutic use that is traditional for the product. . . . Most Commissioners believe direct therapeutic statements . . . may be more informative." The Commission's report urges the FDA to develop a review process that could enable herbs that have substantiated therapeutic use to be marketed as over-the-counter drugs.

A recent ad in *Veggie Life* magazine illustrates the absurdities that DSHEA has spawned. The headline states: "IT PROTECTS YOUR HEART THE WAY FORT KNOX PROTECTS GOLD." The body of the ad states: "MaxiLIFE Cardio Protector nutritionally supports healthy cardiovascular function on a whole new level of potency.* That's because it's no ordinary formula, but a nutritional all-star team of cardioprotective agents." The asterisk refers to the disclaimer that DSHEA requires with "support" statements: "This statement has not been evaluated by the Food and Drug Administration. The product is not intended to diagnose, treat, cure or prevent any disease." The Fort Knox analogy, which suggests complete cardioprotection, is printed in half-inch type. The disclaimer is in 4-point type, which is barely visible.

Under some circumstances, some ingredients in Cardio Protector might help protect a person's heart. Its B vitamins, for example, could lower elevated blood homocysteine levels, which are a risk factor for coronary artery disease. However, there is no reason for people whose homocysteine level is normal to use this product. The dozen or so other ingredients have little or no proven value for cardioprotection. People really interested in protecting their heart should follow an individually designed program based on risk-factor analysis. For these reasons, I believe that Cardio Protector has no rational use. Its manufac-

turer, Twin Laboratories of Ronkonkema, New York, also markets Prostate Protector and Brain Protector.

Under DSHEA, manufacturers who make statements of "nutritional support" must have substantiation that such statements are truthful and not misleading. The law also requires that the Secretary of Health and Human Services be notified no later than 30 days after the first marketing of a supplement for which the statement is being made. The law does not define substantiation.

Publications Connected to Sales

Historically, the FDA has considered literature used directly in connection with the sale of a product to be "labeling" for the product. DSHEA exempts publications from "labeling" if they: (1) are not false or misleading, (2) do not promote a particular manufacturer or brand, (3) present a "balanced" view of pertinent scientific information, and (4) are physically separated from the items discussed. However, since most "dietary supplements" are either useless, irrationally formulated, and/or overpriced, the supplement industry has little reason to provide literature that is not misleading.

The Dietary Supplement Commission concluded that the criteria listed above would be difficult to apply, particularly the requirement for balance. "Balance" is difficult or impossible to define, and standards, if they are developed, would be difficult to enforce. Moreover, no federal agency has the resources to regulate what individual retailers do in their stores.

Further Weakening Proposed

The Nutrition Labeling and Education Act of 1990 prohibits misleading health claims on foods. It requires such claims to be sup-

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WEB WATCH

Looking for nutrition and health information on the World Wide Web? Beware: You're entering a vast library sprinkled with booby traps. Is that a solid piece of nutrition reporting—or a pseudofact ready to explode on contact? This column helps you figure out which is which. Following is a list of some of the best (most reliable, useful) sites and some of the worst (most unreliable, deceptive, weird, and worthless). Ratings and commentary are by Internet-savvy John H. Renner, MD, president of the Consumer Health Information Research Institute (e-mail: drrenner@msn.com).

BEST

<http://arborcom.com/frame/arbormframe2.htm> This is the Arbor Nutrition Guide—one of the most complete and well-indexed nutrition sites on the Internet. It has almost everything on it and is fun to explore. Some linkages are about weird subjects.

<http://www.faseb.org/asns/> Site of the American Society for Nutritional Sciences (founded in 1928 as the American Institute of Nutrition) and home of the new *Journal of Nutrition Online*.

<http://www.nal.usda.gov/fnic/> The Food and Nutrition Information Center (FNIC) is one of several information centers at the National Agricultural Library (NAL), Agricultural Research Service (ARS), United States Department of Agriculture (USDA).

WORST

<http://members.aol.com/mankindrf/home/downs.htm> A site that promotes a nutritional treatment for Down's Syndrome. The treatment is called "NUTRIVENE-D Targeted Nutritional Intervention for Down's Syndrome." Where is the evidence?

<http://www.garynull.com/index.asp> Gary Null's Natural Living site—"exploring the nature and politics of medicine, health, nutrition, and the environment." Some really strange material here for a nutrition page even if we know its alternative logic.

<http://luff.latrobe.edu.au/~botbml/cyanotox.html> If you are curious about Super Blue Green Algae and the problems and debates surrounding it, you should look at this website.

DEBATABLE

<http://www.chromium.edu/index.html> The Chromium Information Bureau, a website that causes great debate. What do you think? You tell me: accurate or not; evidence or hype? An interesting page with good links.

NOTABLE QUOTE

"The words 'quack' and 'quackery' are never used by the 'alternative-complementary medicine crowd. Why not? Because they eschew skepticism. It's too bad. . . . People understand the words 'quack' and 'quackery' but are confused by psychobabble terms like 'alternative,' 'complementary,' and 'integrative' that are being used to sugar-coat quack medicine."

—NCAHF Bulletin Board, May–August 1997

Major Recommendations from the Dietary Supplement Commission

Safety

- Safety of supplement products must be assured.
- The FDA, the supplement industry, scientific groups, and consumer groups should work together to expand and improve postmarketing surveillance, including adverse reporting systems.
- Product information should include appropriate warnings.
- The FDA should take swift enforcement action to address safety issues, such as those posed by ephedra-containing products. The agency should be given additional resources to do this.

Health Claims

- The approval process for health claims should be the same for dietary supplements and conventional foods.
- The standard of "significant scientific agreement" is appropriate but should not require unanimous or near unanimous support.
- To determine whether significant scientific agreement exists for particular claims, the FDA should obtain broad input and use appropriate outside expert panels.

Statements of Nutritional Support

- Statements of nutritional support should provide useful information about the product's intended use.
- Statements of nutritional support should be supported by scientifically valid evidence substantiating that the statements are truthful and not misleading.
- Structure/function statements should not suggest disease prevention or treatment.
- Statements that mention a body system, organ, or function affected by a supplement using such terms as "stimulate," "maintain," "support," "regulate," or "promote" can be appropriate when the statements do not suggest disease prevention or treat-

ment or use for a serious health condition beyond the ability of the consumer to evaluate.

- Statements should not be made for products to "restore" normal or "correct" abnormal function where the abnormality implies the presence of disease. (For example, a claim to "restore" normal blood pressure when the abnormality implies hypertension.)
- Statements of nutritional support are not to be drug claims. They should not refer to specific diseases, disorders, or classes of diseases and should not use such drug-related terms as "diagnose," "treat," "prevent," "cure," or "mitigate."

Substantiation of Nutritional Support Statements

- The Dietary Supplement Health and Education Act (DSHEA) requires manufacturers marketing supplements labeled for "nutritional support" to notify the Secretary of Health and Human Services within 30 days after marketing of a product bearing such a statement. To satisfy this requirement, the notice should include: (1) the identity of the ingredient(s) for which the statement is made, (2) the product's intended use, including recommended dosage, (3) appropriate contraindications or warnings, (4) a brief summary of the evidence and conclusions about safety and effectiveness of the stated dosage, and (5) a consumer version of the evidence on which any claim is made.
- DSHEA requires manufacturers marketing supplements labeled for "nutritional support" to have substantiation. To satisfy that requirement, the manufacturer's substantiation files should contain: (1) a copy of the notification letter, (2) key evidence, including an interpretive summary by a qualified individual, (3) the identity and quantity of the pertinent dietary ingredients, (4) evidence substantiating the

ingredient's safety, (5) assurance that good manufacturing practices were followed, and (6) the qualifications of the individual(s) who reviewed the evidence for safety and effectiveness. A consumer version of the evidence should be made available to the public for each product bearing a statement of nutritional support. This version should not state or imply use for preventing or treating disease.

Publications Connected to Sales

- Articles provided to consumers must be balanced and truthful. The FDA should promptly issue warnings or undertake enforcement action if it becomes aware of violations.
- The FDA should monitor practices in this area and issue guidelines as needed.

Botanical Products

- The FDA should establish an OTC review panel to review botanical products intended for preventive or therapeutic use.
- For products unable to meet FDA review requirements, creation of an alternative approval system should be considered.

Assessment of Consumer Education

- Research should be done to determine whether consumers want and can use information required by existing FDA regulations, DSHEA requirements, and Dietary Supplement Commission recommendations. This would include statements of nutritional support as well as point-of-sale literature.

Expert Evaluation

- The dietary supplement industry should consider establishing an expert advisory committee to provide scientific review of label statements and claims and guidance on safety and appropriate labeling. Such a committee might be supported by one or more trade associations or might be established as an independent entity funded by grants and/or fees for services. **NF**

ported by "significant scientific agreement" and be cleared by the FDA before use in the marketplace. Section 618 of the FDA Modernization and Accountability Act (S. 830) would eliminate preclearance and enable claims to be based on statements by any federal agency, even if the agency's position is counter to the prevailing scientific view or fails to take overall diet into account. (Currently, for example, even though some agencies have recommended eating a low-fat diet, the FDA does not permit health claims to be made for low-fat foods that are very high in sodium.) The Food and Nutrition Labeling Group, a 21-member coalition of prominent professional and consumer organizations, has vigorously objected to Section 618.

The Bottom Line

The FDA has never had enough resources to cope with the enormous amount of deception in the supplement and health-food marketplace. DSHEA has made the problem worse. If I were FDA Commissioner, I would drop any pretense of being able to protect the public. Instead, I would announce that unless Congress provides an adequate law, the FDA cannot protect the public from the deceptive marketing of what DSHEA calls "dietary supplements." **NF**

Stephen Barrett, MD, a retired psychiatrist, is a board member of the National Council Against Health Fraud and webmaster of Quackwatch (<http://www.quackwatch.com>), a guide to quackery, health frauds, and intelligent decision making.

JOIN THE FORUM

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Sex Herbs: As Good as Love Potion Number 9?

by Varro E. Tyler

Of all the come-ons in the field of advertising, sex is by far the most appealing and the most widely used. Whether the commodity being touted is automobiles, cosmetics, or clothing, the promise of enhanced sexual appeal and activity is alluring. And for some consumers, the most irresistible hustle of all is the dream of better sex through *herbs*.

But at the heart of these herbal dreams, is there anything real?

renders the product suitable for females, but just how that takes place is also not explained.

Folklore attributes to cereal oats the properties of a mild sedative or sleep-promoting agent. However, the principles responsible for this activity are absent, or present in minimal quantity, in green oats. Although several herbal products containing it are currently marketed in the United States, there is no credible published evidence supporting the utility of green oats as an aphrodisiac.



Although several herbal products containing it are currently marketed in the United States, there is no credible published evidence supporting the utility of green oats as an aphrodisiac.

GREEN OATS GLORY

Here's an herbal product presently advertised in local newspapers with the promise that it "... can Put the Sizzle Back in Your Love Life." Wow! That sounds great. What is this magic potion?

The fine print indicates that it is a "... unique formulation of *Avena sativa*, a biologically standardized green oats extract that proves to be a powerful sexual enhancer and rejuvenator."

Researchers are said to have found (no reference given) that it stimulates the sex centers of the brain by freeing up "trapped" testosterone. Just how the extract was standardized is not explained.

A modification of the original man's formula is intended to increase sexual desire in women. It contains added saw palmetto, which is claimed to increase the potency tenfold. It also costs \$5.00 more than the men's formula for a 30-day supply-total: \$44.95 plus \$6.00 shipping and handling. Presumably, the addition of the saw palmetto somehow

The German Commission E (an agency similar to the U.S. FDA that investigates herbal claims) failed to approve the use of green oats for any purpose, including sexual disorders. That body found no documentation of its effectiveness and recommended against its use.

The rationale of including saw palmetto along with green oats in an aphrodisiac for women is elusive. Numerous clinical studies have shown saw palmetto to be beneficial in the treatment of benign prostatic hyperplasia in males. It probably functions there by several different mechanisms including inhibition of an enzyme that converts testosterone to the more active dihydrotestosterone (antiandrogenic effect), and by its anti-inflammatory action.

There appears to be absolutely no correlation between these activities and the inclusion of the product in one designed to stimulate the female libido. Ac-

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SODIUM CLAIM DISPUTED

Since 1993, the FDA has permitted food labels to carry a health claim that diets low in sodium may reduce the risk of high blood pressure. Based on new findings, 16 scientists have challenged the idea that universal dietary sodium restriction should be encouraged (*Nutrition Reviews* 55:172-75, 1997). Their report was appended to the Salt Institute's 1996 petition asking the FDA to revoke permission for the claim. The article and the 65-page petition are available from the Salt Institute, 700 North Fairfax Street, Suite 600, Alexandria, VA 22314.

NEW REPORTS: FIBER, FACTS, AND FEAR

The American Council on Science and Health has published two excellent booklets: "Dietary Fiber" and "Facts Versus Fears: A Review of the 20 Greatest Un-

founded Health Scares of Recent Times." The latter report includes scares related to cranberries, DDT, cyclamates, DES in beef, nitrites, saccharin, hair dyes, Love Canal, asbestos in hair dryers, coffee, EDB, Alar, Perrier water, dental amalgam, and cellular phones. The booklets are available for \$3.85 each from ACSH, 1995 Broadway, 2nd Floor, New York, NY 10023-5860.

FLUORIDATION UNDER ATTACK

A group misnamed "Citizens for Safe Drinking Water" is circulating petitions to gather 500,000 signatures by October to place an initiative prohibiting fluoridation in California on the June 1998 statewide ballot. If passed, the measure would amend California's Health and Safety Code by inserting the words: "No fluoride or fluorine-containing substance may be added to public water systems. All laws to the contrary are hereby repealed." The referendum attempt is a response to a mandatory statewide fluoridation law enacted in 1995. Fluoridation reduces the incidence of cavities 20% to 40% in children and 15% to 35% in adults. More than 135 million peo-

ple in the United States are served by fluoridated water, and an additional 10 million have protective levels of naturally-occurring fluoride in their water.

NEW ANTIQUACKERY FORCE

The Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) has set up a Media Stock Fund to provide leverage in responding to irresponsible reporting of pseudoscientific claims. The principal targets are Westinghouse (CBS), General Electric (NBC), NewsCorp (Fox), Time Warner (WB, Turner Broadcasting), and Disney (ABC). Income from the fund will be used to fund the activities of CSICOP's Council for Media Integrity, a network of experts committed to monitoring the media, criticizing unbalanced presentations, and using shareholder resolutions to attack problems. Donations to the fund can be sent to P.O. Box 703, Amherst, NY 14226. CSICOP is also interested in hearing from shareholders willing to permit CSICOP to vote as their proxy at shareholder meetings. **NF**

New Journal Will Scrutinize 'Alternative Medicine'

The public, the media, and even some physicians seem enthralled by the unexamined promises of "alternative" or unconventional treatments. Yet there has been no scientific journal dedicated exclusively to carefully scrutinizing the onslaught of dubious claims. Until now.

The *Scientific Review of Alternative Medicine* will be launched soon to fill the void. It's a peer-reviewed medical journal whose aim is to provide objective, scientific assessments of the treatments, methods, and hypotheses of unconventional medicine. The Editor is *Nutrition Forum* editorial board member Wallace Sampson, MD, clinical professor of medicine at Stanford University; the Executive Editor is *Nutrition Forum* Editor Lewis Vaughn. Prometheus Books publishes the journal, and it has been endorsed by the Council for Scientific Medicine, a group of physicians, scientists, and others concerned about the lack of critical scrutiny of "alternative" medicine.

To affirm its support for scientific medicine and this new journal, the Council drafted a statement, which says in part:

We believe that the need for objective, scientific critiques of the claims of "alternative" or nonconventional medicine has never been greater. This conclusion seems inescapable because . . .

- There is a general lack of readily available, reliable information about the efficacy of such treatments. This impairs people's free choice and increases risks to their health. The potential harm is incalculable but appears to be growing. The trend is abetted by those who promote unproven treatments, especially those who are naïve, greedy, or unscrupulous.
- The media all too often dote on controversial and false claims but unfortunately provide few careful, critical examinations of them, usually preferring to titillate, pander, or entertain.

- Several new journals devoted exclusively to "alternative" medicine have appeared recently, but they merely advocate unconventional treatments and rarely assess them objectively.
- Both the public and some medical professionals seem unaware that credible, scientific assessments of many "alternative" medicine claims already exist—and that new evaluations based on available information are possible.

We therefore welcome the founding of the *Scientific Review of Alternative Medicine*—the first peer-reviewed journal dedicated entirely to the scientific, rational evaluation of unconventional health claims.

The journal will be issued twice a year (with the first issue appearing in September 1997) but frequency may increase later. A subscription is \$50 for individuals and \$90 for institutions. Those who want to subscribe can call (800) 421-0351 or send their credit card number via fax (716-691-0137) or e-mail (PBooks6205@aol.com), or mail to SRAM, Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. **NF**

Ephedra Rules Proposed

According to the advertisement, testosterone has been shown to be responsible for stimulating sexual activity in both men and women. Assuming this to be true (it is supported by much less evidence in women than in men), the addition of saw palmetto with its antiandrogenic properties might be expected to inhibit, not increase, female sexual passion.

No references to pharmacological or clinical studies of the effectiveness of the male and female products are contained in the advertisement.

It does point out that they have been featured on "Inside Edition," "Hard Copy," "Geraldo," and "Leeza." Instead of using the age-old ploy of testimonials, efficacy is based upon statements from a New York sex counselor, a 77-year-old retired colonel, a doctor, and an osteopathic physician.

IMPOTENT APHRODISIACS

Green oats is just one of many purported aphrodisiacs on the American market whose activities remain unproven. A more common one is damiana, the leaves of the Mexican shrub *Turnera diffusa* var. *aphrodisiaca*. This herb has never been tested clinically, and its purported sexual activity has been exposed as an ancient herbal hoax. Muira puama wood obtained from *Ptychopetalum* species has likewise never been proven to be effective. Sarsaparilla from *Smilax* species has been promoted as an aphrodisiac, in the belief that the sarsapogenin contained in it could be converted to testosterone in the human body. Not true.

Of all the herbal aphrodisiacs, yohimbe, the bark of *Pausinystalia johimbe*, is both the most promising and the most disappointing.

It does contain the active principle yohimbine which, as a prescription drug, is used in treating erectile dysfunction in males. However, the risk/benefit ratio of yohimbe is unacceptably high; its use can result in hypertension, tachycardia, sleeplessness, anxiety, nausea, and numerous other undesirable side effects. As a result, Commission E failed to approve yohimbe, and its use must be discouraged. **NF**

During the past two years, the FDA has collected over a hundred supplement products labeled as containing an ephedrine alkaloid source such as ma huang. Some products contained ephedrine alkaloids as a single ingredient, but most had between 6 and 20 other ingredients, such as vitamins, minerals, amino acids, and other botanicals. Many were promoted for weight loss, bodybuilding, energy boosting, increasing mental concentration, enhancing sexual sensations, or producing euphoria, or as alternatives to illicit street drugs.

On June 4, the FDA proposed strict rules for marketing of "dietary supplements" containing ephedrine alkaloids (Federal Register 62:30677-30724, 1997). The agency acted in response to more than 800 instances of adverse reactions (including some deaths) reported since between 1993 and 1996. The proposal's Appendix describes 53 severe reactions. The proposed regulations include:

- No product can contain 8 mg or more of ephedrine alkaloid per serving.
- Labels may not suggest usage that would result in an intake of 8 mg or more in a 6-hour period or a total daily intake of 24 mg or more.
- Products cannot include sources of

other stimulants such as caffeine or yohimbine.

- Claims may not be made that long-term use is effective for weight loss or bodybuilding.
- Product labels must state: "Do not use this product for more than 7 days."
- Labels of products for short-term use must warn that "taking more than the recommended serving may result in heart attack, stroke, seizure, or death."

- Labels must caution against use by pregnant or nursing women, or by people with heart disease, thyroid disease, diabetes, high blood pressure, psychiatric conditions, glaucoma, difficulty in urinating, prostate enlargement, and seizure disorder.

The proposed rules do not apply to ephedrine-containing products that are now marketed as drugs. Ephedrine is an approved ingredient in oral bronchodilators used to treat mild cases of asthma. However, a proposed 1995 FDA rule to reclassify ephedrine as unsuitable for over-the-counter use may soon become final.

Federal Register documents can be accessed (or downloaded using Adobe Acrobat) from http://www.access.gpo.gov/su_docs/aces/aaces002.html. **NF**

The agency acted in response to more than 800 instances of adverse reactions (including some deaths) reported since between 1993 and 1996.

NEWSFLASH: SOMETHING NUTRITIONALLY STRANGE

On June 9, 1997, the *Sacramento Bee* reported (with accompanying Associated Press photo) that in Hyderabad, India, an estimated *half million people* had recently shown up at the house of Harinath Gaud to receive a cure for asthma: *a live sardine containing an herbal paste* (to be popped into the mouth on the spot). "The fish-and-herb medicine," the report said, "is given free to patients once a year on an astrologically favorable day in June, and patients are advised to begin a strict 45-day diet. The formula reputedly was given to the Gaud family by a saint 152 years ago."

Book Reviews

Analysis and Ratings

How accurate and useful is the nutrition information in that book? Would a reputable reviewer recommend the book to professionals and consumers? These are the two questions that Nutrition Forum book reviews are intended to answer. So the reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Another Arthritis 'Miracle'— on Thin Evidence

Manfred Kroger

The Arthritis Cure by Jason Theodosakis, Brenda Adderly, and Barry Fox (New York: St. Martin's Press, 1997), 201 pp., \$22.95 (hardback).

Like dozens of other books promising simple cures of complicated and perplexing diseases, this book will most likely end up as a remaindered publisher's venture and also be available for a quarter at neighborhood book sales. And years from now, arthritis will still be with us along with cancer, depression, and the common cold. My guess is that most professionals will agree.

Actually, this book is a concise, readable, and quite valuable review of an age-old disease, including its related conditions affecting the joints. The book's emphasis, however, is on osteoarthritis, not the psoriatic, gouty, or rheumatoid types. The book's subtitle is "The Medical Miracle that Can Halt, Reverse, and May

even Cure Osteoarthritis." The book's preventing and healing regimens are detailed in seven- and nine-point chapters, respectively. To prevent osteoarthritis, do the following: (1) Eat a healthful, joint-building diet. (2) Maintain your ideal weight. (3) Exercise regularly. (4) Prevent injuries. (5) Insure proper recovery if you are injured. (6) Optimize your biomechanics to counteract stress to your joints, and (7) Consider use of glucosamine and chondroitin sulfates prophylactically. And what is touted as the nine-step Arthritis Cure program (in reality aimed only at osteoarthritis) is as follows: (1) Have a thorough consultation with a physician. (2) Take glucosamine and chondroitin sulfates to repair damaged joints. (3) Improve your biomechanics to counteract stress to your joints. (4) Exercise regularly. (5) Eat a healthful, joint-preserving diet. (6) Maintain your ideal body weight. (7) Fight depression. (8) Use traditional medicine as necessary. and (9) Maintain a positive attitude.

It's the italicized statements above that shift this fact-based, easy-to-read medical monograph into the category of sales literature, alternative healing practices, possibly even quack treatment.

The authors may not have any financial stake in the sale of glucosamine and chondroitin sulfates whatsoever, but they are certainly sold on these chemicals, and sincerely believe in the thin evidence of their effectiveness. The senior author even provides positive case histories of his own patients.

The major argument is that in Europe these two substances are successfully being used as nutritional supplements against osteoarthritis, and 14 references are provided to scientific studies since the late 1970s. But none of these studies was good enough to be noticed by arthritis experts worldwide to embrace glucosamine and chondroitin sulfates as the "miracles" they are now made out to be. So the book's authors attack the American medical and drug establishments as "failing to see the light" and not pursuing any financial gains in these miracle substances be-

cause they are commonly available to everyone.

It is well known that both glucosamine and chondroitin sulfate are made by the body and are involved in cartilage manufacture, repair, and maintenance. Osteoarthritis results when the bone-protecting layer of joint cartilage is drying out, degenerating, or injured. The book's thesis and simple premise is that by eating glucosamine and chondroitin sulfate, cartilage will benefit. No evidence is provided as to the mode of ac-

tion, the metabolic mechanism, by which this is to occur. However, throughout the book the reader is assured that this "may" occur. And there's the rub. All those "may's" and the disclaimer in front of the book (to protect publisher and authors against litigation) indicate, maybe, that even its authors are not all too certain about the efficacy of the "miracle cure."

It would cost about \$2 per day to treat yourself; that's \$700 per year. With 16 million Americans suffering from osteoarthritis, and millions of others trying to prevent it, this looks like a lucrative potential market indeed. Both glucosamine and chondroitin sulfate are nontoxic, and no side effects have been reported. So what's the harm to someone who can afford the treatment? None, except the feeling of having been duped if no effect is experienced. And the few studies cited are not too persuasive on the point of effectiveness. But, fortunately, the authors assure us that more studies are underway to prove once and for all that these two miracle food supplements are actually doing what is claimed in this book. A rational person should wait that long and use current therapeutic methods and the more reliable advice of the authors—and contemplate how something that is swallowed and totally digested will reappear in the blood to augment the body's own glucosamine and chondroitin sulfate. **NF**

This book shifts into the category of sales literature, possibly even quack treatment.

**RECOMMENDED
WITH RESERVATIONS**

HIGH-DOSE ANTIOXIDANTS FLUNK TEST

A six-month, double-blind clinical trial has found that patients who underwent balloon coronary angioplasty had less arterial relogging with probucol treatment than they did with antioxidant supplements given alone or combined with the drug (*New England Journal of Medicine* 337:365-72, 1997). More than 200 patients completed the study without protocol violations. After their surgery, patients in the antioxidant groups received 30,000 IU of beta-carotene, 500 mg of vitamin C, and 700 IU of vitamin E twice daily. All of the patients received aspirin, which is known to reduce the incidence of relogging. The rates of repeated angioplasty were 11% in the probucol group, 16.2% in the combined treatment group, 24.4% in the multivitamin group, and 26.6% in the placebo group. Probucol, which can lower LDL-cholesterol levels, also has antioxidant properties. However, it is no longer marketed in the United States because it lowers the level of HDL-cholesterol that protects against atherosclerosis.

FTC HITS SUPPLEMENT MARKETER

Nu Skin International, Inc., a multilevel marketer of skin-care products and nutritional supplements, has agreed to pay a \$1.5 million civil penalty to settle Federal Trade Commission (FTC) action against claims made for five products containing chromium picolinate and L-carnitine. The FTC charged that the company could not produce adequate substantiation and therefore had violated a 1994 FTC order requiring it to have adequate substantiation for its claims. The 1994 order, which carried a penalty of \$1.225 million, concerned unsubstantiated claims for a baldness product, a wrinkle lotion, and a burn cream. In the current case, the FTC challenged claims that "Metabotrim," "OverDrive," "GlycoBar," "Appeal Lite," and "Breakbar" could reduce fat, increase metabolism, and preserve or build muscle. For example, the ingredients in Metabotrim were claimed to have been

[continued on page 37]

Hard Facts on Colloidal Minerals Cure-all or crushed rocks?

by Beth Fontenot, MS, RD

Colloidal mineral supplements are the current craze in "alternative" nutrition, promising to cure what ails you—and to confuse consumers. They are simply extra-small mineral particles suspended in a solution, and they are being promoted as the cure for acne, anemia, brittle nails, birth defects, cancer, constipation, depression, diabetes, goiter, graying hair, hair loss, hyperactivity, impotence, infertility, memory loss, PMS, and wrinkles.

Colloidal minerals are sold largely by multi-level marketing companies under such names as Clark's Mineral Formula, Mineral Toddy, Mineral Solutions, and Micro-Mins. They sell for up to \$50 for a month's supply. The fact that these products are sold by multilevel marketing companies should make one skeptical, and the numerous claims made by the marketers are dubious at best.

The Sales Pitch

The story behind colloidal minerals goes like this: In 1925, a Paiute Indian led an ailing Utah rancher, Thomas Clark, to a legendary spring known for its healing powers. Soon after drinking from the spring, Clark was healed of his ailment. As Clark followed the spring back into the

mountains, he discovered a deposit of minerals that was later determined to be the remains of a prehistoric rain forest. He created a "miracle tonic" by extracting the minerals from the spring and passed it among his friends who reportedly experienced remarkable results. Many manufacturers tout their product as coming from this "original source," but similar deposits are said to be found in a few other areas of the world.

Colloidal minerals, which have been described by some as "mud" or "crushed rocks," are sold as elixirs, capsules, and oral sprays. The mineral content varies by product, but the ingredient lists all read like the Periodic Table of Elements: aluminum, arsenic, cadmium, lead, lithium, platinum, silver, titanium, as well as an assortment of other less familiar minerals.

The promoters maintain that our soil is so depleted that the food we eat is lacking in the minerals our bodies need, and furthermore, we absorb only about 5% of the minerals we do get from food. A multitude of diseases and medical conditions, as well as deaths, are due to mineral deficiencies, they say.

The promotional materials declare that colloidal minerals have a natural negative charge that enhances their absorp-

They are being promoted as the cure for acne, anemia, birth defects, cancer, constipation, depression, diabetes, goiter, hyperactivity, impotence, infertility, memory loss, PMS, and wrinkles.

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tion as well as the transport and availability of other nutrients. Toxins and heavy metals are supposedly attracted to this negative charge and are flushed from the body. In addition, the marketers assert that the small size of colloidal minerals, as opposed to the elemental minerals found in over-the-counter supplements, makes them more easily absorbed by the cells of the body. The ads also carefully point out that toxicity is not a concern, and one company's ad states that their product contains only "truly organic" minerals.

Reality Check

The claims for these mineral products are nothing more than imaginative sales gimmicks. Absorption of a nutrient is not affected by its charge, and even if colloidal minerals are better absorbed (and experts dispute that fact), that would not make them desirable. Some minerals are toxic at high levels, and many of those present in the products are not recognized as essential to humans. The fact is that for many minerals, absorption by the body is largely regulated by the need for the mineral. And as for the claim about "truly organic" minerals, the fact is that minerals are *inorganic*. (Organic materials contain carbon atoms, and inorganic materials do not.)

No scientific evidence can be found to support any of the claims made by the marketers of these products, including the claim regarding mineral deficiencies in foods.

Currently, there are 16 minerals recognized as essential to humans. The Committee on Dietary Allowances of the National Academy of Sciences has established a Recommended Dietary Allowance (RDA) for the major minerals calcium, phosphorus, and magnesium, and for the best-known trace minerals iron, zinc, iodine, and selenium. Estimated Minimum Requirements have been established for sodium, potassium, and chloride. Other minerals such as copper, manganese, fluoride, chromium, and molybdenum are known to be essential, and an Estimated Safe and Adequate Daily Dietary Intake (ESADDI) is published for these. Arsenic, nickel, silicon, and boron are recognized as essential to animals, but are not firmly established as essential for

humans. Very little is known about the need for cadmium, cobalt, lead, lithium, tin, and vanadium. At this time, the evidence that these are essential is weak.

Minerals play a critical role in the maintenance of health as well as in the management of some disease states. The fact that minerals are required only in small amounts and that they can be toxic in excess raises substantial concern about the indiscriminate use of supplements. There are mechanisms in the body that regulate the absorption and excretion of excessive amounts of the essential minerals; however, there does not appear to be such a mechanism for regulating the absorption and excretion of nonessential minerals. There also exists the potential for adverse mineral interactions and imbalances to occur in the body when mineral supplements are used haphazardly.

The bottom line is that a healthy diet that provides a wide variety of foods from both plant and animal sources is the safest, least expensive, and most practical way to ensure an adequate intake of the minerals required by the human body. The claims for colloidal minerals are just too hard to swallow. **NF**

Beth Fontenot is a nutrition consultant and freelance nutrition writer in Lake Charles, LA. She serves on the adjunct faculty at both McNeese State University in Lake Charles and Lamar University in Orange, TX.

BE A NUTRITION FORUM CONTRIBUTOR!

If you find any news or information that may be of interest to our readers—such as published articles, news reports, press releases, or relevant personal experience—please send it to us. Mail it to Lewis Vaughn, *Nutrition Forum*, P.O. Box 664, Amherst, NY 14226-0664. We're especially interested in receiving information about enforcement actions by state agencies, lawsuits by victims of quackery, and health-fraud news that may have been overlooked by the national media.

An Herb to Forget— Cat's Claw

by Varro E. Tyler

There's a joke presently making the rounds about the woman who, not realizing that the herb cat's claw was so named for its long curving thorns, refused to take it because she was a vegetarian. Now science has come up with a far better reason for caution in consuming this ancient folkloric remedy derived from the tropical vine *Uncaria tomentosa*.

Commonly referred to by its Spanish name *uña de gato*, the herb has been popularized in the United States in recent years by South American immigrants. Several books in the Spanish language recommend it for a wide variety of diseases and syndromes ranging from arthritis, cancer, and AIDS to hemorrhoids, acne, and PMS. The evidence of its utility is anecdotal. No substantial clinical studies of the efficacy of cat's claw for any condition have ever been published in peer-reviewed medical journals.

Trouble Signs

Recent studies have shown that there is a significant problem associated with the consumption of the plant that has been collected at random in the Peruvian jungle. It turns out that there are two kinds of *Uncaria tomentosa* that are distinguishable one from another only on the basis of their chemical constituents. Such plants which look alike but differ markedly in their composition are referred to as chemotypes (chemical types) or chemovars (chemical varieties).

The root of one chemotype of *U. tomentosa* contains quantities of several

pentacyclic (5-ring) oxindole alkaloids, including pteropodine, speciophylline, and mitraphylline. Tests in small animals have shown that these compounds produced a number of effects which resulted in a general strengthening of the immune system. In other words, they helped the animals resist disease. Other animal tests showed acute toxicity to be low, and mutagenic activity was not detected.

The constituents of the other chemotype of *U. tomentosa* are quite different. It contains the

tetracyclic (4-ring) oxindole alkaloids rhynchophylline and isorhynchophylline, which counteract the immunomodulating action of the pentacyclic alkaloids found in the other variety. They also exert negative chronotropic and inotropic activities, slowing and decreasing the force of the heartbeat.

In addition, they have a sedative effect which in high doses depresses respiration and produces ataxia (lack of muscular coordination).

Obviously, none of these activities is desirable, and the tetracyclic chemotype of cat's claw when mixed with the pentacyclic variety—as is often the case in commercial samples—will simply neutralize whatever beneficial effect the latter may have on the consumer's immune system. The admixture is apparently not detectable by either macroscopic or microscopic examination of the herb; it is readily observed by simple chromatographic techniques (HPLC or TLC). Yet these analytical procedures are not routinely carried out on cat's claw products in the American market.

Because the two varieties are not

Recent studies reveal a big problem with cat's claw—there are two kinds of Uncaria tomentosa that are indistinguishable one from another except by chemical analysis, and one can hurt you.

WEB WATCH

Looking for nutrition and health information on the World Wide Web? Beware: You're entering a vast library sprinkled with booby traps. Is that a solid piece of nutrition reporting—or a pseudofact ready to explode on contact? This column helps you figure out which is which. Following is a list of some of the best (most reliable, useful) sites and some of the worst (judged unreliable, weird, or worthless). Ratings and commentary are by Internet-savvy John H. Renner, MD, president of the Consumer Health Information Research Institute (e-mail: drrenner@msn.com).

BEST

<http://www.hnrc.tufts.edu> This is the online presence of the Jean Mayer U.S. Department of Agriculture Human Nutrition Research Center on Aging at Tufts University. This site includes info on the human studies program, medical and scientific resources, seminars and conferences, scientific publications, nutrition resources, and much more.

<http://vm.cfsan.fda.gov/label.html> Want to know just about everything about food labeling? This is the place to go—the FDA's online Center for Food Safety and Applied Nutrition, Food Labeling section. Lots of background info and articles on labeling history, law, and research as well as tips on using food labels to prevent or treat diseases like diabetes and hypertension.

<http://www.niaid.nih.gov/factsheets/allergy.htm> This is the National Institute of Allergy and Infectious Diseases' "Fact Sheet." It's a list of resources for patients living with allergies, including allergy hotlines, information sources and networks, and NIAID-supported centers (for treatment, education, and referrals).

<http://odphp.osophs.dhhs.gov/> Online site of the U.S. Office of Disease Prevention and Health Promotion. A good place to go to access publications online, including *Dietary Guidelines for Americans, Fourth Edition*.

WORST

<http://www1.mhv.net/~donna/conq.html> This is a multilevel sales page for Health Vision, an independent distributor of Prime-Quest Products and sponsor of the Diet & Weight Loss/Fitness Home Page. Features a weight-loss and performance supplement allegedly based on secret research done in the former Soviet Union. The site is loaded with weird references, testimonials, before-and-after pictures, and lots of unusual advice.

readily separated at the point of collection, it is difficult to prevent contamination of the potentially useful pentacyclic variety with at least some of the negative-acting tetracyclic one. Consequently, on practical grounds it is recommended that the content of the latter type oxindole alkaloids be limited to less than 0.02%.

Does It Work?

The jury is still out on the effectiveness of any type of cat's claw in stimulating the activity of the human immune system. We simply won't know its utility with any degree of accuracy until clinical trials have been conducted on a substantial number of subjects and the results published in peer-reviewed medical journals.

In the meantime, those wishing to use cat's claw are best advised to restrict consumption to products certified to be free (or at least not containing more than 0.02%) of tetracyclic oxindole alkaloids as determined by suitable analytical methods. Possibly at some future date, specific botanical characteristics will be found that will enable the two chemical varieties of *Uncaria tomentosa* to be distinguished in the field. That would greatly simplify collection of the proper variety. Until such time, the only assurance of possible immunomodulatory efficacy of cat's claw is to use products that have been identified unequivocally by suitable laboratory procedures. **NF**

Dr. Tyler is a Board Member of Nutrition Forum; a Distinguished Professor Emeritus of Pharmacognosy, Purdue University; and the author of The Honest Herbal, a classic in the field.

JOIN THE FORUM

We want to know what you think . . . about important developments in nutrition misinformation and quackery and about previous articles in *Nutrition Forum*. We also invite questions on topics relevant to *NF*; we hope to answer selected questions in upcoming issues. Send your letters to Readers' Forum, P.O. Box 664, Amherst, NY 14226-0664 or e-mail to fivaughn@aol.com; please include your daytime telephone number.

The Gerson Diet and Coffee Enemas

by Saul Green

The use of diets and coffee enemas to treat cancer is based on the teachings of Max Gerson, a German MD who practiced about 75 years ago when the biology of cancer was virtually unknown. He believed that cancer was a degenerative disease that developed when aerobic energy metabolism in the liver and intestine was converted to anaerobic metabolism by "poisons" from processed foods.

An Old Idea

The idea that purges could rid the body of its "corrupt humors" has been practiced by "healers" since the fifth century. Proponents promoting coffee enemas still believe that "an unpoisoned body" possesses reserves that can recognize and destroy cancer. Gerson's treatment requires patients to have a prolonged period of detoxification with coffee enemas and to adhere, for life if possible, to a diet of juices from raw fruits, vegetables, and calf liver, all produced without pesticides or fertilizers and prepared without sugar, starch, salt, or artificial coloring.

Proponents of the Gerson treatment allege that normal cells depend on oxygen and oxidizing enzymes to maintain aerobic metabolism. When this system is poisoned by "toxins" in processed foods, it falls back into anaerobic metabolism, produces inferior energy, and becomes cancer. Detoxification is accomplished with enemas containing coffee because coffee stimulates liver bile production and activates an enzyme, glutathione-S-transferase, which neutralizes the free radicals in the blood. The coffee enema causes the toxin-laden bile to be flushed out of the gallbladder into the intestines and through the colon to be excreted. Gerson has stated that for a patient to be "healed," the patient's body must be detoxified. After

Excerpted from "Pseudoscience in Alternative Medicine," *Skeptical Inquirer*, Sept/Oct 1997. Reprinted by permission.

detoxification, he says, the essential organs will destroy the cancer by an inflammatory allergic reaction. Healing is activated by the special diet of natural non-toxic foods that include "ionized minerals of the potassium group, juices of green leaves and raw calves liver, thyroid extract, and iodine."¹

Litany of Errors

Over the last 30 years the scientific literature has shown that: carcinogens are not respiratory poisons; most respiratory poisons are not carcinogens; oxygen does not inhibit the growth of cancer cells either in vitro or in vivo; the absence of oxygen does not induce or accelerate cancer growth; effective anticancer drugs are the ones that affect DNA synthesis and not fermentation; energy from fermentation is not inferior by any measure; tumors increase oxidative metabolism of fats and carbohydrates to gain energy; and there is no evidence of the "poisoning" of aerobic metabolism in tumor cells.²

The hepatology literature does not show that bile is a vehicle for toxin removal. A primary function of bile is to move metabolites from the liver to body tissues. To conserve bile and to ensure that the metabolites it carries are not lost during transit through the intestine, more than 95% of the bile entering the intestine is reabsorbed and returned to the liver before it reaches the colon. If Gerson's postulate were true, toxins carried in the bile would not be excreted but would recirculate through the body endlessly.³

Coffee does not stimulate bile production; it causes release of bile from the gallbladder. Bile does not contain glutathione, and glutathione is not a precursor for bile formation.⁴

In the short term, the action of an enema causes an insignificant loss of bile from the intestine. But the amount of bile lost from frequent enemas over a period

of months is appreciable. Under such circumstances, severe nutritional consequences associated with malabsorption can and do result.⁵

The pathogenesis of inflammation and its role in the immune system have been defined in studies showing that inflammation suppresses fat metabolism and cellular oxidations, and increases the rate of glycolysis, tissue wasting, septic shock, and hemorrhagic necrosis in all cells, normal and malignant. Proponents of the Gerson treatment have never shown that there is a "healing" inflammatory process that focuses specifically on tumor cells.

Finally, Gerson proponents have never identified the "poisons" in processed foods and have never shown them to be present in voided enema fluids or that an all-natural diet of the juices of raw fruits, vegetables, and calf liver can stimulate any kind of "healing." All the evidence in the scientific literature today indicates that mutagenesis, and not the interference with oxidative metabolism, is the cause of cancer.⁶ **NF**

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BRIEFS

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"scientifically shown to establish and maintain proper metabolic rates assisting the body in burning fat while preserving lean muscle mass."

RDAS ARE NOW DRIS

The Institute of Medicine has begun issuing a series of reports on Dietary Reference Intakes (DRIs), which will update and expand the Recommended Dietary Allowances (RDAs) set by the National Academy of Sciences since 1941. The first report reviews calcium, phosphorus, magnesium, vitamin D, and fluoride, all of which are related to bone health. Its key advice is that Americans and Canadians at risk for osteoporosis should consume between 1,000 and 1,300 milligrams of calcium per day. The report can be purchased by calling (800) 624-6242; or sending \$39 to the National Academy Press, 201 Constitution Ave, N.W., Washington, DC 20418; or ordering it at a discount online (<http://www.nap.edu/low>). The full text can also be read online. *Nutrition Forum* will carry a detailed summary in the next issue.

FTC SETTLES WITH PROMINENT AD AGENCY

In July, the FTC announced a proposed agreement settling charges that J. Walter Thompson USA, Inc., engaged in deceptive advertising practices. The ads involved variations of the claim that 9 out of 10 Jenny Craig clients would recommend the program to a friend. The FTC alleged that the ad agency had falsely claimed that competent research had supported the claims. One FTC commissioner noted that the ad agency had continued to base claims on a flawed study "even after it had received contradictory results from a more reliable study that it had commissioned." The case represents the fourth time that J. W. Thompson has settled FTC charges that it had misrepresented survey or test results in advertising for various clients. The case is significant because advertising agencies are not usually held responsible for their deceptive creations.

MOON BOOSTS NATUROPATHY

The University of Bridgeport has launched a naturopathy college, the fourth such school in the United States. The university, owned by the Rev. Sun Myung Moon's Unification Church, opened its chiropractic college in 1991. *Alternative and Complementary Therapies* (an offbeat journal) states that the new college, the Professors' World Peace Academy (PWPA), received a \$30 million grant "to explore eleven new areas, including alternative medicine." Naturopathic methods and modalities include "natural foods" diets, vitamins, herbs, tissue minerals, cell salts, manipulation, massage, exercise, diathermy, colonic enemas, acupuncture, natural childbirth, homeopathy, and minor surgery. Although naturopaths claim that their approach is preventive as well as therapeutic, they tend to oppose immunization. PWPA, founded by Rev. Moon, is described on its web site as "a tax-exempt non-profit educational organization founded to support the academic community's role in the pursuit of world peace."

ATTORNEY SUES AROMATHERAPY COMPANY

San Diego attorney Morsé Mehrban has filed a civil lawsuit against Aroma Vera, Inc., a leading manufacturer of aromatherapy supplies and other personal-care products. The suit charges that the company violated California's Business and Professions Code by advertising more than 70 false claims about various products. Mehrban disputes that the products can promote health and well-being, relax the body, relax the mind, enhance mood, purify the air, neutralize effects of air pollution, relieve fatigue, tone the body, nourish the skin, promote circulation, alleviate feminine cramps, or do various other things claimed by the company. Proponents describe aromatherapy as "the therapeutic use of the essential oils of plants." They describe the oils as highly

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Quotable Quote

"Advertising, not science, is the lifeblood of 'alternative' treatments."—Saul Green, PhD, *Skeptical Inquirer*, Sept/Oct 1997

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concentrated substances extracted from flowers, leaves, stalks, fruits, and roots, and also distilled from resins. Proponents allege that the oils contain hormones, vitamins, antibiotics, and antiseptics and represent the "life force," "spirit," or "soul" of the plant. The oils are usually administered in small quantities through inhalation, massage, or other skin applications. Mehrban's suit seeks restitution for consumers, cessation of these claims, and payment of reasonable attorney fees and costs. Earlier this year he filed a similar one against a colon therapist.

OSTEOPOROSIS REPORT

Harvard Publications Group has published an excellent 38-page booklet covering osteoporosis risk factors, consequences, prevention, treatment, and screening. It is available for \$16 from Dept. OST, P.O. Box 380, Boston, MA 02117.

CONSUMER PROTECTION BOOKLET

The 12-page booklet "Who Cares: Sources of Information About Health Care Products and Services" provides simple tips about hearing aids, prescription-drug switching, nursing homes, alternative medicines, cataract surgery, arthritis cures, direct-mail schemes, and abusive caregivers. Free copies are obtainable from the FTC Public Reference Branch, Room 130, 6th St. and Pennsylvania Ave., N.W., Washington, DC 20850.

'ALTERNATIVE MEDICINE' CLAIMS DEBUNKED

The Sept/Oct 1997 issue of *Skeptical Inquirer* magazine examines claims for shark cartilage, homeopathy, and four other aspects of "alternative medicine." Single copies cost \$7.50. An introductory (six-issue) subscription can be obtained for \$16.95 by calling (800) 634-1610.

HERBAL ECSTASY WARNING

In a settlement with the Federal Trade Commission (FTC), the company that makes Herbal Ecstasy, an herbal stimulant, has agreed to place a warning on its label about the safety and potential health risks of this "natural herbal high." The FTC alleged that Global World Media Corporation and its owner, Sean Shayan, advertised the product as "100% natural and absolutely safe" despite evidence of health risks and the death of a college student in Florida. The agreement also states that safety claims in future ads must be substantiated by scientific evidence. In addition, the company has agreed to quit advertising Ecstasy and other similar products in media with predominantly young audiences. (Ads appeared on Nickelodeon and MTV in some local cable markets.) Ephedra is the main ingredient in Herbal Ecstasy. It is a stimulant that affects both the central nervous system and the heart. The FDA has cited at least 800 injuries and 17 deaths linked to the herbal stimulant.

How to Spot a 'Quacky' Web Site

by Stephen Barrett, MD

The best way to avoid being quacked is to reject quackery's promoters. Each bulleted item below is an indicator that a web site is not a trustworthy information source because whoever selects the material is not trustworthy. Someone is deemed untrustworthy if they engage in deception (as defined below) or make false statements about nutrition, "alternative" methods, or dental care. (These criteria also work for other sources of information such as books, magazines, and even health professionals.)

General Indicators

- Any site used to market herbs or dietary supplements. Although some of these sites are useful, I do not believe it is possible to run a profitable business selling such products without some form of deception. Deception includes: (1) lack of full disclosure of the facts, (2) promotion or sale of products that lack a rational

use, or (3) failure to provide advice indicating who should not use the products. During the past 25 years, I have never encountered a seller who did not do at least one of these three things.

- Any site used to market or promote homeopathic products. No such products have been proven effective.
- Any site that generally promotes "alternative" methods. There are more than a thousand "alternative" methods. The vast majority are worthless.

False Statements about Nutrition

Untrustworthy promoters say that . . .

- Everyone should take vitamins.
- Vitamins are effective against stress.
- Taking vitamins gives people more energy.
- Organic foods are safer and/or more nutritious than ordinary foods.
- Losing weight is easy.
- Special diets can cure cancer.

- Diet is the principal cause of hyperactivity.

False Statements about 'Alternative' Methods

Untrustworthy promoters say that . . .

- Acupuncture is effective against a long list of diseases.
- Chelation therapy is an effective substitute for bypass surgery.
- Chiropractic treatment is effective against a large number of diseases.
- Herbs are generally superior to prescription drugs.
- Homeopathic products are effective remedies.
- Spines should be checked and adjusted regularly by a chiropractor.

False Dental Care Statements

Untrustworthy promoters say that . . .

- Fluoridation is dangerous.
- Mercury-amalgam ("silver") fillings should be removed because they make people sick.
- All teeth with root canals should be removed because they make people sick. **NF**

Book Reviews

Analysis and Ratings

How accurate and useful is the nutrition information in that book? Would a reputable reviewer recommend the book to professionals and consumers? These are the two questions that Nutrition Forum book reviews are intended to answer. So the reviews not only offer analyses but also rate each book as either RECOMMENDED, NOT RECOMMENDED, or RECOMMENDED WITH RESERVATIONS, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Hype and Hormones

Manfred Kroger

Natural Hormone Replacement by Jonathan V. Wright, MD, and John Morgenthaler (Petaluma, CA: Smart Publications, 1997), 128 pp., \$9.95 (paperback)

On July 2, 1997, *USA Today* reported the results of its CNN/Gallup poll on estrogen therapy for women. More than half of ages 30-49 surveyed said they would use estrogen replacement therapy (ERT) when menopausal. And about 41% of women 18-29 years old and over 65 said they would consider ERT. In the 50-64 age group only one-third would consider it.

One can easily calculate the tremendous market that exists for hormone replacement. It is so big that ours could be called the Age of Hormone Replacement. Most women do want to escape from the discomforts of "Menopause Hell," and now they can and do so with the products of American drug manufacturers. Provera® and Premarin® have become much-used terms among American women. This estrogen therapy is done under the guidance of physicians and is called "conventional hormone therapy" or replacement

therapy with patentable "synthetic" sex hormones.

The intention of this book is to popularize an alternative therapy, namely "natural hormone replacement." And it does an intensive job. However, very, very little evidence is provided that a switch might be better. So the book is aimed mainly at discrediting conventional ERT as practiced now, but specifically the allegedly ignorant members of the American Medical Association who the authors say should know better and not prescribe "synthetics" when "natural" chemicals are available (now extracted as highly processed and chemically converted substances from wild yams). The authors also portray the ethical drug industry as money-hungry and criticize it for searching for and mass-producing medicines that are "safe and effective" (a requirement under federal law).

The Food and Drug Administration receives brickbats also because it requires a lengthy and expensive approval process. So expensive, say the authors, that natural hormone adherents have not (yet) done the research to make a New Drug Application. What I, as an editor of the *Journal of Food Science*, find particularly noteworthy is the allegation that "the *Journal of the American Medical Association*, the *New England Journal of Medicine*, and other top-of-the-line medical journals are completely in the dark about the use of natural hormones. Their use isn't taught in any medical school or by any pharmaceutical company, the other source for nearly all conventional physicians. With no multinational drug industry to pay the enormous costs, the large definitive studies that might demonstrate the efficacy and safety of natural hormones will likely never be done." So here it is, a rigorous evaluation of those wild yam chemicals has not been conducted and, therefore, there is no reliable information about their safe use and effectiveness. Yet the authors want to vigorously promote them.

But when one believes in a concept, as the authors do, it's only natural to embrace it and to push it. The booklet is praiseworthy in that it uses lay language to teach female endocrinology, especially the menopausal phase. But instead of presenting clear evidence, with actual cita-

tions instead of allusions to "Japanese scientists or evidence accumulated in Europe," the authors attack the dominant therapy which they wish to eradicate. However, the 10-page chapter called "Hormone Replacement and Cancer" does list 13 references.

So the thread throughout the book is a harangue against synthetic hormone replacement. Premarin™ and Provera® are portrayed as contributors to various ailments, whereas natural hormone replacement comes out with flying colors (and only skimpy traceable evidence) not only with regard to menopause symptoms, but especially osteoporosis, heart disease, cancer, and senility. More than that, the book unabashedly claims and promises for natural ERT such major achievements as better sex drive; prevention of senility and Alzheimer's disease; improved sleep, mood, and memory; prevention and restoration of bone loss; protection against heart disease and stroke; reduced risk of cancer and depression; and improvement of cholesterol levels. Of course, "the other stuff" doesn't do all that.

Incidentally, the currently and freely available DHEA and melatonin are also praised as wonder drugs similar to estrone, estradiol, and estriol obtained from the Mexican wild yam.

The book is a broadside against the establishment and for alternative (natural) living. It will appeal to folks who have embraced the elimination/minimization of drugs; learned how to self-prescribe vitamins, minerals, and botanical remedies; harnessed the natural energies contained in homeopathic remedies; and who use acupuncture, massage, chiropractic, and osteopathy. Almost parenthetically, in an afterword, the authors rant against the evils of modern life: food additives, pesticide residues, impure drinking water, and water fluoridation/chlorination. Also, with one stroke, the authors would eliminate all sweetness from the supermarkets, sugar, and artificial sugar substitutes.

As scientific literature this book is embarrassingly shallow; as sales literature it is downright insulting to the questioning and critical consumer. If natural hormone replacement is to ever become more widely accepted, its proponents should come forth with a better marketing

scheme than this book and less of a discreditation of the "other side."

The book will not appeal to scientists and the majority of health professionals. It is obviously aimed at the mass market. There must be millions of people who will buy this book and even seek out practitioners of NHR. After all, the front cover promises, for women over 45, to "live longer, achieve vibrant health, enhance your sex life, and look and feel years younger." Insights into any one of those ought to be worth the price of the book. Look for your copy at the next charity book sale where people donate the things they don't consider valuable.

Editor's Note: Wright cofounded the now defunct American Quack Association and has served as board chairman and president of the National Health Federation, a group that has opposed government regulation of quackery.

NOT RECOMMENDED

Herbal Assertions

Varro E. Tyler

Ask the Doctor: Herbs and Supplements for Better Health by Derrick M. DeSilva Jr., MD (Loveland, CO: Interweave Press, 1997), 160 pp., \$12.95 (paperback)

This slim volume, written in a rather inefficient question-and-answer format, suggests remedies, many of them herbal, for a wide variety of common diseases and afflictions. Unfortunately, none of the assertions regarding the efficacy of the proposed remedies is referenced, so the only authority for them is the author, the physician-host of a popular syndicated radio show.

Here are just a few of Dr. DeSilva's assertions I would like to see documented: kava counteracts lethargy in depressed patients (p. 13); aloe vera gel is a stool softener (pp. 24, 138); cayenne pepper and prickly ash stimulate circulation of the blood (p. 49); motherwort regulates heartbeat (p. 52); horse chestnut is the same as the Ohio buckeye (p. 55); goldenseal boosts the immune system (pp. 73, 151); garlic has a strong antiviral action (p. 90); shark cartilage has anti-inflammatory properties (p. 107); dong quai

quickly relieves PMS symptoms (p. 116); burdock root purifies the blood (p. 122); wild yam has estrogenic activity (p. 125); and wild yam and damiana will help sustain penile erection (p. 131).

Then there are some curious omissions in the book: the tannin complex from balm is not mentioned as a well-researched and effective treatment for cold sores. Chasteberry is not discussed as the premier herbal treatment for premenstrual syndrome. Siberian ginseng (eleuthero), ginkgo biloba, and blue cohosh are all recommended as treatments for the symptoms of menopause, but none of these herbs has ever been proven to relieve them. Consideration of black cohosh, the best proven herbal treatment, is entirely lacking.

Several of the author's pet themes recur with amazing frequency throughout the book. The acidophilus bacillus is repeatedly recommended in connection with a wide variety of afflictions. The need to drink pure water is also a constant theme. I certainly agree with his judgment that bottled water provides no assurance of quality. Cayenne pepper (capsicum) is proposed again and again for many conditions, but no mention is made of the use of capsaicin ointment to relieve arthritis pain. The herb is said both to raise and to lower blood pressure. Again, references here would be most welcome.

I have a personal antipathy towards reference books that are not well indexed. This one certainly is not. The so-called index is really an expanded table of contents simply listing the conditions and diseases discussed. Not a single treatment, herb, or drug is listed in it.

The book is well printed with useful colored illustrations and an attractively designed paper cover. It is interesting to read, but for the reasons stated above, I can only rate it:

NOT RECOMMENDED

Studying Studies

Manfred Kroger

Studies Show: A Popular Guide to Understanding Scientific Studies by John H. Fennick (Amherst, NY: Prometheus

Books, 1997), 240 pp., \$17.95 (paperback)

Almost daily we hear about this or that study telling us about health risks, human behavior, environmental pollution, social trends, the benefits of nutrients or supplements, and much more. The decisions of consumers, professionals, and public policy makers are greatly influenced by these "news flashes." Original reports are largely incomprehensible to lay readers because they are addressed to research peers. The rest of us receive filtered, popularized, interpreted, simplified, condensed versions. That is good, but also reason for concern in that we now must also critically examine the secondary report which may or may not be accurate. Most studies suffer from scientific jargon and the intricacies of the subject itself, and research findings are invariably given various "mysterious" statistical examinations. These make the results meaningful. However, if and when data manipulation is misapplied, the conclusion of a study will become meaningless. John H. Fennick is a professional statistics analyst and just the right person to give us a clear, even humorous, introduction to statistics and steer us clear of such pitfalls. If you are a willing student, his book can enhance your critical thinking as well as help you make sense of science news reports. Your level of numeracy will rise and benefit you ever after.

In a lighthearted, conversational way, he takes us not only through the statistics vocabulary (average, sampling, correlation, confidence level, variable, variance, distribution, standard deviation, null hypothesis, probability, linear regression analysis, etc.), but also into the realm of statistical gamesmanship, risk analysis, and decision making based on data, facts, and scientific evidence (as opposed to emotions, wishful thinking, political expediency, or whatever other human frailty). An educated citizen must know about numbers and their meanings. The statistically challenged person will always be subject to fraud, trickery, and exploitation. This book is like a roadmap guiding you through the news of science and technology.

RECOMMENDED

SCIENTISTS WANT TO ABOLISH THE OAM

Prominent scientists are calling for the abolishment of the NIH Office of Alternative Medicine (OAM), saying that the office is tarnishing the good name of the NIH and that the OAM promotes theories that are incompatible with the laws of physics. In response to the introduction of H.R. 1055 by Rep. Peter DeFazio, a bill that would increase funding to the OAM and elevate it to the status of an NIH center, scientists are calling for funding to be drastically cut or eliminated entirely. The scientists oppose the OAM because they believe that it is not scientific in its approach to alternative medicine. They maintain that the OAM should be held to standards of scientific excellence and peer review and point out that the OAM is not planning or conducting any objective studies of alternative therapies. Robert Park of the American Physical Society says, "The OAM is providing cover for medical quackery of every sort." He contends that alternative medicine is a "hodge-podge of totally unrelated techniques" and that the therapies should be researched by appropriate institutes and centers within the NIH.

GINKGO BILOBA DOES WELL IN TEST

A well-designed 52-week clinical trial has found that a Ginkgo biloba extract helped some patients with mild to moderate dementia (*JAMA* 278:1327-1332, 1997). The study followed more than 200 patients, half of whom received a fixed dose of EGb761, a Ginkgo extract used in Europe. The authors concluded: (a) EGb was safe and appears capable of stabilizing and, in a substantial number of cases, improving the cognitive performance and the social functioning of demented patients for 6 months to 1 year; and (b) the trial does not indicate whether benefits would be sustained. Reprints can be obtained from Dr. Pierre L. LeBars, New York Institute for Medical Research, 150 White Plains Rd., Tarrytown, NY 10591.

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NUTRITION

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Doing the DRIs

A no-nonsense guide to the nation's new nutritional yardsticks

by Stephen Barrett, MD

The Dietary Reference Intakes (DRIs) are nutrient-based reference values for use in planning and assessing diets and for other purposes. They are intended to replace the Recommended Dietary Allowances (RDAs) that have been published since 1941 by the National Academy of Sciences. They are being determined by the Standing Committee on the Scientific Evaluation of Dietary Reference Intakes of the Food and Nutrition Board, Institute of Medicine (IOM), National Academy of Sciences, with help from Health Canada. The IOM is a private, nonprofit organization that provides health policy advice under a congressional charter granted to the National Academy of Sciences.

The DRIs will be released in a series of seven reports. The first report, published in August 1997, covers nutrients related to bone health (calcium, phosphorus, magnesium, vitamin D, and fluoride). Subsequent volumes will consider: (1) folate and other B vitamins; (2) antioxidants (e.g., vitamins C and E, selenium); (3) macronutrients (protein, fat, carbohydrates); (4) trace elements (e.g., iron, zinc); (5) electrolytes and water; and (6) other food components (e.g., fiber, phytoestrogens). The first report was funded by the FDA, the USDA Agricultural Re-

search Service, and the National Heart, Lung, and Blood Institute. The IOM hopes that all of the reports will be released by the year 2000.

A New Approach

The RDAs have served as the benchmark of nutritional adequacy in the United States. More than 20 years ago, they were defined as: "The levels of intake of essential nutrients that, on the basis of scientific knowledge, are judged by the Food and Nutrition Board to be adequate to meet the known nutrient needs of practically all healthy persons."

Scientific knowledge about the roles of nutrients has expanded dramatically since the RDAs were first published. Many studies have examined relationships between diet and chronic disease. The Food and Nutrition Board has responded to these developments by changing its basic approach to setting nutrient reference values.

The DRIs reflect a shift in emphasis from preventing deficiency to decreasing the risk of chronic disease through nutrition. The RDAs were based on the amounts needed to protect against deficiency diseases. Where adequate scientific data exist, the DRIs will include levels that can help prevent cardiovascular

The DRIs reflect a shift in emphasis from preventing deficiency to decreasing the risk of chronic disease through nutrition.

from  Prometheus Books

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disease, osteoporosis, certain cancers, and other diseases that are diet-related. Instead of a single category, the DRIs will encompass at least four:

1. **Estimated Average Requirement (EAR):** The intake that meets the estimated nutrient need of 50% of the individuals in a specific group. This figure will be used as the basis for developing the RDA and can be used by nutrition policy-makers to evaluate the adequacy of nutrient intakes for population groups.

2. **Recommended Dietary Allowance (RDA):** The intake that meets the nutrient need of almost all (97 to 98%) of the healthy individuals in a specific age and gender group. The RDA should be used in guiding individuals to achieve adequate nutrient intake aimed at decreasing the risk of chronic disease. It is based on estimating an average requirement plus an increase to account for the variation within a particular group. The amount of scientific evidence available allowed the DRI committee to calculate RDAs for phosphorus and magnesium. If individual variation in requirements is well defined, the RDA is set at 2 standard deviations above the EAR, which means it should be high enough to meet the needs of at least 97-98% of the population. If sufficient data are not available, the RDA is set at 1.2 x EAR.

3. **Adequate Intake (AI):** When sufficient scientific evidence is not available to estimate an average requirement, Adequate Intakes (AIs) will be set. These are derived through experimental or observational data that show a mean intake which appears to sustain a desired indicator of health, such as calcium retention in bone. The AIs should be used as a goal for individual intake where no RDAs exist. The DRI committee set AIs for calcium, vitamin D, and fluoride.

4. **Tolerable Upper Intake Level (UL):** The maximum intake by an individual that is unlikely to pose risks of adverse health effects in almost all healthy individuals in a specified group. The UL is not intended to be a recommended level of intake, and there is no established benefit for individuals to consume nutrients at levels above the RDA or AI. The term "tolerable upper intake level" was chosen to avoid implying a possible beneficial ef-

fect. For most nutrients, it refers to total intake from food, fortified food, and supplements.

What They Mean

The DRIs are intended to apply to the healthy general population. RDAs and AIs are dietary intake values that should minimize the risk of developing a condition or sign that is associated with that nutrient in question and that has a negative functional outcome. They refer to average daily intake over one or more weeks. They should not necessarily be expected to replete individuals who are already malnourished and may not be adequate for disease states marked by increased requirements.

Individuals known to have diseases that greatly increase requirements, or who have increased sensitivity to developing adverse effects associated with higher intakes, should be guided by qualified medical and nutrition personnel.

The committee cautioned that nutrient intake less than the RDA does not necessarily mean that a given individual is not getting enough of that nutrient. Healthy individuals who meet the AI have a low risk of inadequate intake. However, an intake well below the RDA or AI would be a reason to assess the individual's nutritional status through laboratory testing or clinical examination. The IOM

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BE A NUTRITION FORUM CONTRIBUTOR!

If you find any news or information that may be of interest to our readers—such as published articles, news reports, press releases, or relevant personal experience—please send it to us. Mail it to Lewis Vaughn, *Nutrition Forum*, P.O. Box 664, Amherst, NY 14226-0664. We're especially interested in receiving information about enforcement actions by state agencies, lawsuits by victims of quackery, and health-fraud news that may have been overlooked by the national media.

Why Nutritionist Licensing Is Important

During the past 60 years, perhaps 50 individuals without valid credentials have pretended to be medical doctors and actually managed for a time to practice. It is unlikely that anyone has ever been exposed as a fake dentist, podiatrist, optometrist, or even chiropractor. But in nutrition, nonaccredited correspondence schools and other organizations have issued thousands of "degrees" and certificates that suggest that the recipient is a qualified expert in nutrition. These documents are promoted as though they are equivalent in meaning to established credentials—which they are not.

The most prominent nonaccredited school was Donsbach University of Huntington Beach, California, whose president, Kurt Donsbach, D.C., has been involved in dozens of questionable health and nutrition ventures. Most "textbooks" required for the school's basic curriculum were books written for the general public by promoters of dubious nutrition practices. A typical "degree" program took less than a year to complete. Graduates typically referred to themselves as "nutrition consultants," a term also used by some reputable nutritionists. The school ceased operations in 1987, but some of its "graduates" are still in practice.

Bernadean University, of Van Nuys, California, offered "nutritionist" and "cancer researcher" certificates, "master's degrees," and "Ph.D. degrees" in acupuncture, reflexology, iridology, naturopathy, homeopathy, and nutrition. Dietitian Virginia Aronson took the "nutritionist" course and reported that she got high grades on all tests whether she put down correct answers or not. In 1982, Bernadean was ordered to cease operations because it was not authorized by the state. However, it is still functioning. Bernadean's most prominent alumnus is "Dr."

Richard Passwater, author of *Supernutrition* and several other books.

"Nutrition consultants" who wish to acquire additional "credentials" can join the American Association of Nutritional Consultants, which issues certificates suitable for framing and publishes a directory and a monthly newspaper. Its "professional membership" application asks only for the applicant's name and address plus \$50. Several investigators, including Stephen Barrett, MD, have enrolled household pets as professional members.

In response to the flaunting of dubious credentials, dietitians have gained passage of laws to regulate nutritionists in 38 states and the District of Columbia. Some make it illegal for unqualified persons to call themselves dietitians or nutritionists, while others define nutrition practice and who is eligible to practice. The most basic requirement for licensure is completion of accredited training. Opponents claim that bills of this type are motivated by greed and an intention to create a monopoly for one school of thought. The real issues, however, is public protection.

It is unfair to expect people to check the credentials of every practitioner they encounter. Rather, it should be government's role to set licensing standards and to prevent individuals who don't meet the standards from representing themselves as equivalent to those who do. Licensing does not offer complete protection against all forms of nutrition practice conducted privately between consenting adults. (It does not, for example, protect people from the poor advice offered by many chiropractors, acupuncturists, naturopaths, and health-food retailers.) But it can deter untrained individuals from widely advertising that they are experts. **NF**

A dietitian who took one course received high grades on all tests whether she put down correct answers or not.

WEB WATCH

The World Wide Web is a treasure trove of information but loaded with booby traps. The sites listed below include some of the best (most reliable, useful) and worst (unreliable, deceptive, but in some cases still useful for viewing quack concepts in the raw). This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web. Listed below are, in our opinion, some of the best and worst sites on the Net.

BEST

<http://www.cyberdiet.com/> Cyberdiet, hosted by Timi Gustafson, RD, contains a wealth of information as well as interactive tools for assessing and planning diet and exercise programs. You can use it to calculate your BMI and your target heart rate, and to view nutrient contents as they would appear on the labels of hundreds of foods. Start with the "Guided Tour."

<http://www.ada.org/consumer/fluoride/fl-menu.html> The American Dental Association's gateway to dozens of well-written articles about fluoridation.

<http://www.intellihealth.com/> Johns Hopkins's information site contains a wealth of information and answers individual questions.

WORST

<http://www.newhope.com/nhnm.html> New Hope Natural Media's gateway to the contents of its health-food industry trade and consumer magazines, several of which can be read in their entirety online. The site provides a huge amount of information about industry trends, political maneuvering, claims made for supplements and herbs, retailer education, and the industry's interpretation of nutrition research.

<http://www.prevention.com/healing/oncall/> *Prevention* magazine's "Doctor on Call" provides largely unsubstantiated advice from a naturopath about taking supplement and herbal products. *Prevention's* unsubstantiated advice on using vitamins and minerals for health problems can be accessed through the "vitamin dispenser" page at <http://www.prevention.com/healing/vitamin/>. A disclaimer states that the site is "intended to heighten awareness of health information and does not suggest diagnosis or treatment."

expects future publications to provide more detailed advice on how the DRIs should be interpreted and used.

Revised Values

In many cases, various levels of intake can have different benefits. One level may be related to the risk of deficiency, for example, while another level can influence the risk of chronic disease for that nutrient. For this reason, "nutrient adequacy" should be expressed in terms of "Adequate for what?" For this reason, the DRIs are far more elaborate than the RDAs and cannot be expressed in a simple table of values.

- Calcium recommendations were set at levels associated with maximum retention of body calcium because bones that are calcium-rich are known to be less susceptible to fractures. The other factors known to affect bone retention of calcium and risk of osteoporosis include high rates of growth in children during specific periods, hormonal status, exercise, genetics, and other diet components. The new report advises Americans and Canadians at risk for osteoporosis to consume between 1000 and 1300 milligrams of calcium per day. These values (AIs) are higher than the 1989 RDAs, which ranged from 800 to 1200. The adult UL for calcium is 2.5 grams per day.

- Phosphorus, important for bone and soft tissue growth, is so prevalent in various foods that near starvation or a metabolic disorder is required to produce deficiency. Different from former RDAs, phosphorus values in the report are not derived in relation to calcium. The values recommended are considered sufficient to support normal bone growth and metabolism at various ages. The new RDAs are about 12% lower than the 1989 RDAs.

- Magnesium works with many enzymes to regulate body temperature, allow nerves and muscles to contract, and synthesize proteins. Although some researchers have argued that magnesium recommendations should be based on relationships with the risk of cardiovascular disease, the report does not find enough data available at this time to do so. The levels recommended, although somewhat higher, do not differ substantially from the 1989 RDAs but are higher than current Canadian recommendations.

- Vitamin D used by the body comes mostly through exposure to the sun. Vitamin D deficiency can exacerbate osteoporosis and other bone problems in adults. Dietary intake of vitamin D is unnecessary for people who spend adequate amounts of time in the sun. The levels recommended in the report are estimated to provide enough vitamin D even for individuals with limited sun exposure. The AIs of 10 micrograms from age 51 to 70 and 15 micrograms over age 70 are higher than their 1989 counterparts. The adult UL for vitamin D is 50 micrograms (2000 IU) per day.

- Fluoride is found naturally in some community water systems and is added to water in other areas to reduce dental decay. The levels recommended in the DRIs have been shown to reduce tooth decay without causing marked fluorosis, a discoloration of the teeth that could occur in children who use dental products with fluoride in addition to fluoridated water. The AIs for fluoride are similar to the corresponding values (ESADDIs) in the 1989 report. The American Dental Association, the American Academy of Pediatrics, and the Canadian Paediatric Society recommend that children living in nonfluoridated communities take fluoride supplements because the required amount is unlikely to be provided by food. The

amounts recommended for infants and children have been lowered during the past few years because of concern about fluorosis, a cosmetic defect that most commonly involves white patches that are barely visible on the teeth.

Except for fluoride, the greatest disparity between recommended values and current dietary patterns is in calcium, which comes primarily from dairy products. Surveys indicate that many do not consume the amount of calcium recommended in the report. Calcium intake can be increased by consuming more low-fat or nonfat dairy products or fortified food products or by taking supplements. The report states that taking supplements may be appropriate for those at high risk of health problems due to low calcium intake.

The report also states: (a) unfortified foods are advantageous for meeting the RDAs and AIs because they provide other food components for which RDAs and AIs may not be determined; (b) food fortification can increase or maintain nutrient intakes without major changes in food habits; and (c) nutrient supplementation may be desirable for some people.

The full report—*Dietary Reference Intakes: Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride*—can be purchased by calling (800) 624-6242; sending \$39 to the National Academy Press, 201 Constitution Ave., NW, Washington, DC 20418; or ordering it at a discount online (<http://www.nap.edu>). The full text can also be read online, although the process is cumbersome. **NF**

Stephen Barrett, MD, is coauthor/editor of Consumer Health: A Guide to Intelligent Decisions (McGraw-Hill, 1997) and 42 other health-related books. His web site is <http://www.quackwatch.com>; his e-mail is sbinfo@quackwatch.com

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[continued from page 41]

FDA WARNS CONSUMERS ABOUT SKIN-CAP

The FDA has issued a warning regarding the product "Skin-Cap." It is primarily used for the treatment of psoriasis and contains prescription-strength corticosteroids that may produce serious side effects. Those who are using the product are advised to see their physician immediately. An abrupt halt to the use of the product could cause psoriasis to worsen or lead to a serious flare-up of the disease that could be life-threatening. An FDA analysis has shown that Skin-Cap contains prescription levels of a potent topical steroid, clobetasol propionate. This steroid has many potentially harmful side effects, including dilation of tiny blood vessels, stretch marks, and thinning skin. Long-term use or large amounts of the drug can cause hypertension, diabetes, osteoporosis, and behavioral changes. It can also suppress the body's ability to produce its own corticosteroids. Skin-Cap is imported from Spain and is sold as a nonprescription spray, shampoo, or cream for psoriasis and other skin disorders. The FDA has also taken steps to detain imports of the product at all border entries.

META-ANALYSIS QUESTIONED

According to a recent report in the *New England Journal of Medicine* (NEJM 337:536-542), meta-analysis—the practice of combining several small medical studies into a single large study—may lead to inaccurate science and inappropriate conclusions. Large, randomized controlled studies are considered the gold standard in evaluating the effectiveness of clinical interventions. Meta-analysis has become popular in recent years to help study medical issues when there has not been one large, well-controlled study on an issue. Dr. Jacques LeLorier and others from the University of Montreal identified 12 large randomized, controlled studies and 19 earlier meta-analyses which addressed the same questions. They determined that meta-analyses failed to come to the same conclusions as the larger studies, which are presumed to be more

accurate. Responding to the study in an editorial in the journal, John C. Bailor III of the University of Chicago noted that sometimes even two meta-analyses using the same data arrive at incompatible or contradictory conclusions. He stated that frequent and serious problems with meta-analyses make it difficult to trust the overall "best estimates" that the method often produces.

DOCTOR SUSPENDED FOLLOWING ALOE DEATHS

The Virginia Board of Medicine has suspended the medical license of Donald L. MacNay, MD, whose practices the board described as "a substantial danger to the public health and safety." According to American Medical News, MacNay charged \$12,000 to treat cancer patients with intravenous injections of an aloe-based product. The board's action was triggered by the deaths of at least three patients he allegedly treated.

GERBER SETTLEMENT HOAX

Notices have been sweeping the country that "Gerber Baby Food lost a class-action suit against them. Gerber had been marketing their baby food as 'all natural' when, in fact, it was found to contain preservatives. In the settlement, Gerber Food is now responsible for giving every child born between 1985 and 1997 a \$500 savings bond. . . . To obtain the bond, send a copy of the child's birth certificate and Social Security number to . . ." Thousands of people have responded by sending information to a now-closed post office box in Minneapolis. Postal officials describe this notice as a hoax attributable to an Internet-based prankster. A class-action suit involving other infant formula makers was settled in 1996, but Gerber was not a party to the suit. The Council of Better Business Bureaus warns that personal information such as Social Security number should not be given to people who do not have a legitimate reason to have it.

AAFP ADOPTS NEW CME POLICY

In January 1997 the Commission on Continuing Medical Education of the American Academy of Family Physicians resolved not to approve continuing edu-

cation courses that espouse theories and techniques not generally accepted by the medical community. If a course or program includes information about "complementary" or "alternative" practices, the sponsoring organization must attest that "the proposed program will neither promote . . . nor . . . teach physicians how to use a particular type of complementary/alternative practice."

NEW ACSH REPORTS

The American Council on Science and Health, 1995 Broadway, New York, NY 10023, has published excellent booklets covering vegetarianism and colorectal cancer. The vegetarianism booklet concludes: "Some scientific studies indicate that vegetarians have lower risks of chronic diseases than do meat-eaters. However, some of the apparent benefits . . . may be attributable to aspects of the vegetarian diet other than the absence of meat, or to nondietary aspects of typical vegetarian lifestyles. It is not necessary to . . . become a vegetarian to enjoy the benefits of a healthy diet." The colorectal report includes myths about diet and cancer. The reports are \$5 each.

LAXATIVE INGREDIENT BANNED

The FDA intends to ban phenolphthalein as an ingredient in over-the-counter laxatives. The agency reported that animal studies have found that, in high doses, phenolphthalein can damage a gene that suppresses tumors and cause various cancers in laboratory rats and mice. Novartis Consumer Health, which markets Ex-Lax, announced that it would recall its current supply and, within 60 days, would sell a reformulated product containing senna.

CHOLESTEROL-LOWERING INSTRUCTIONS

The National Cholesterol Education Program has published an excellent booklet called "Live Healthier, Live Longer: Lowering Cholesterol for the Person with Heart Disease" (order #3805). A copy can be obtained for \$3 by calling (301) 251-1222 or by writing to the NHLBI Information Center, P.O. Box 30105, Bethesda, MD 20824. Multiple discounts are available. **NF**

The Sour Truth about Apple Cider Vinegar

by Beth Fontenot, MS, RD

Apple cider vinegar is an old folk remedy claimed to be beneficial in treating a long list of ailments. Proponents say that it can cure arthritis, guard against osteoporosis, lower blood pressure and cholesterol, prevent cancer, destroy infection, assist in digestion and weight control, maintain memory, and protect the mind from aging.

Vinegar is said to have been used for medical ailments for at least 10,000 years. The Babylonians first converted wine into vinegar in 5000 BCE using date palms, grapes, and figs, and believed vinegar had exceptional healing properties. Hippocrates is said to have used vinegar as an antibiotic. Samurai warriors supposedly used a vinegar tonic for strength and power. During the U.S. Civil War, soldiers used vinegar to prevent gastric upset and as a treatment for various ailments including pneumonia and scurvy. It was used to treat wounds during World War I.

The name *vinegar* comes from a French word meaning "sour wine." It is produced by the action of yeast and bacteria on grains or fruit juices. Vinegars take their name from the material used to make the vinegar, i.e., apple cider vinegar comes from apples, wine vinegar comes from grapes.

Apple cider vinegar is made by crushing apples and squeezing out the liquid. Sugar and yeast are added to the liquid to start the fermentation process, which turns the sugars into alcohol. In a second fermentation process, the alcohol is converted by acetic acid-forming bacteria into vinegar. Acetic acid gives vinegar its sour taste.

"Mother of vinegar" is a term used to refer to the mass of scum that forms on top of cider when alcohol turns into vinegar, or to the cloudy substance that sometimes develops in stored vinegar. It is actually bacteria and yeast cells that have died.

Folk Claims

In 1958 Dr. D. C. Jarvis, a "noted Vermont country doctor," wrote a book entitled *Folk Medicine* in which he extolled the virtues of vinegar.

Jarvis claimed that Vermonters knew how to cure migraine headaches, diabetes, chronic fatigue, arthritis, and more—they used apple cider vinegar.

He claimed that Vermonters knew how to cure migraine headaches, diabetes, chronic fatigue, arthritis, and a variety of other ailments. They used apple cider vinegar.

Among Dr. Jarvis's many tenets about apple cider vinegar was his advice to pregnant women to drink an apple cider vinegar tonic daily to assure that the infant is born with "an excellent chemical pattern with which to meet its new environment." He recommended the same tonic for those suffering from arthritis. Believing that apple cider vinegar would destroy bacteria in the digestive tract, he advised those with GI problems to consume a tonic with each meal. He also declared that the regular consumption of an apple cider vinegar tonic would make body fat disappear because the vinegar would cause the fat to be burned instead of stored.

His book quickly sold 500,000 copies and is still in print. Apple cider vinegar is still promoted as one of the chief "natural" remedies for arthritis.

Those who believe that apple cider vinegar has miraculous properties attribute its powers to an abundance of nutrients in the liquid. One company's sales

pitch states, "Each golden drop is a natural storehouse of vitamins and minerals." Marketers point to the trace minerals, bacteria, and enzymes present in their product as the ingredients that give apple cider vinegar its curative characteristics. Another company suggests that their apple cider vinegar is superior because it contains pectin, beta-carotene, and potassium in addition to enzymes and amino acids. Apple cider vinegar is also said to contain an abundance of complex carbohydrates and dietary fiber. Dr. Jarvis believed that the healing properties of apple cider vinegar were due in large part to its rich potassium content.

Some New Twists

Apple cider vinegar is sold today by "health food" companies and others who claim it has remedial properties. The claims are similar to those in the past, but some have taken on a modern twist based on more recent medical research.

Marketers contend that the beta-carotene in apple cider vinegar destroys free radicals in the body which are involved in the aging and mutation of tissues and in destroying the immune system. Apple cider vinegar's beta-carotene is said to be in a "natural, easy to digest form."

Its use as a remedy for arthritis is based on the notion that acid crystals harden in the joints and tissues which cause the joints to become stiff and the tissues to harden. These acid crystals also cause the body to age prematurely, so the ads state. Apple cider vinegar is supposed to put these acid crystals in solution so they can be flushed from the body.

Producers also claim that apple cider vinegar can lower cholesterol and blood pressure. These assertions are based on the assumption that people naturally crave acids when eating animal proteins in order to lessen the thickening influence of "heavy proteins and fat." Apple cider vinegar supposedly thins the blood so it can circulate more freely. Thick blood, they say, puts a strain on the heart and up goes the blood pressure. Another source states that the pectin present in apple cider vinegar works its way through the digestive system, binding to cholesterol and removing it from the body.

Apple cider vinegar is also available in tablet form. One brand is merchandised as a "digestive aid for vegetarians." The manufacturer of this product alleges that the tablets help acidify the stomach and help digest protein. Another tablet, which contains apple cider vinegar as one of its components, is sold as a fiber supplement and supposedly assists in weight loss. Still other companies add herbs to their apple cider vinegar "so people see relief from even more ailments."

The rubbery mass of goo called the "mother of vinegar" is reputed to have magical healing properties as well. Nibbling on a bit of this moldy slime every day is purported to prevent most infectious diseases and keep germs and parasites from invading the body.

One company's advertisement for organic, raw, unfiltered, unheated, unpasteurized apple cider vinegar is particularly alarming. This company's ad maintains that "there is nothing in this wonderful natural apple cider vinegar that can in any way harm your body!" Apparently, they have never heard of the danger of *E. coli* O157:H7 in unpasteurized fruit juices. Normally vinegar is too acidic to support bacteria. However, should the acidity weaken (pH reaching 4.6 or higher), then pathogens will survive and grow.

Jogging in a Jug

In 1985, Jack McWilliams, an Alabama farmer, concocted a potion he called "Jogging in a Jug." It consisted of apple cider vinegar combined with a variety of fruit juices to give it a more appealing taste.

Acetic acid, claimed McWilliams, was lacking in the modern diet, and this

deficiency was the root cause of many health problems. He claimed that the potion had cured his arthritis and heart disease, and it could reduce the risk of cancer in the internal organs. McWilliams marketed his product through the media, receiving extensive coverage in small community newspapers and broadcast outlets. He reportedly sold \$9 million worth of his potion in one year.

The FDA, however, did not look kindly on Mr. McWilliams's vinegar product and its advertised claims. The federal government seized the product in 1994 due to the unproven health claims.

In 1995, thousands of bottles of the potion were ordered destroyed because the product was considered an unapproved new drug due to the claims made by the producer. Subsequently, Mr. McWilliams's company, Third Option Laboratories, Inc., paid the Federal Trade Commission a \$480,000 fine to settle charges of false advertising. "Jogging in a Jug" is still on the market today with a new label that meets FDA guidelines.

The Real Story

There is no scientific evidence that apple cider vinegar has any medicinal properties. While the folksy anecdotes from those who claim to have benefited from apple cider vinegar tonics may be amusing to read, they are simply that—anecdotes.

Apple cider vinegar is anything but a

storehouse of nutrients. A nutritional analysis of one tablespoon (more than the one or two teaspoons suggested to make a tonic) reveals that the golden liquid contains less than a gram of carbohydrate; minuscule amounts of calcium, iron, magnesium, sodium, copper, manganese, and phosphorus; and a mere 15 mg of potassium. The fiber, vitamin, and amino acid content is zero.

As for the presence of any beneficial enzymes in apple cider vinegar or the "mother," food scientists doubt that any could thrive in the acid environment of the vinegar. Assuming any were present, though, they would be destroyed in the acid of the stomach when consumed and be of no use to the body.

The Arthritis Foundation calls vinegar a harmless, but unproven, arthritis remedy. It points out that arthritis symptoms come and go, and that a person using an unproven remedy may think a remedy worked simply because they used it at a time when symptoms were going into natural remission. Such is undoubtedly the case for many of the "cures" connected to vinegar. **NF**

Beth Fontenot is a nutrition consultant and freelance nutrition writer in Lake Charles, LA. She serves on the adjunct faculty at both McNeese State University in Lake Charles and Lamar University in Orange, TX.

READERS' FORUM

A DUCK QUESTION

Your interesting brief on the homeopathic remedy *occillococcinum* (July/August 1997) raises an intriguing ethical question: If he or she suffers from one of the illnesses for which *occillococcinum* [derived from duck's liver and heart] is reputed to be effective, can a strict vegetarian use the preparation in good conscience? The answer obviously hinges on

the question whether the substance he or she actually ingests contains a "memory" of the original duck, for surely it contains none of the unfortunate creature's molecules!

Lawrence S. Lerner
Dept. of Physics and Astronomy
California State University, Long Beach

KUDOS FOR SHARK REPORT

I just wanted to congratulate you for publishing the article on shark cartilage by Saul Green (January/February 1997). I

found the article to be accurate and non-inflammatory. As you may know, I have been making the same points about shark cartilage for a number of years.

Alan R. Gaby, MD
Seattle, WA

JOIN THE FORUM

Send your letters to Readers' Forum, P.O. Box 664, Amherst, NY 14226-0664 or e-mail to fivaughn@aol.com; please include your daytime telephone number.

Book Reviews

Analysis and Ratings

How accurate and useful is the nutrition information in that book? Would a reputable reviewer recommend the book to professionals and consumers? These are the two questions that Nutrition Forum book reviews are intended to answer. So the reviews not only offer analyses but also rate each book as either RECOMMENDED, NOT RECOMMENDED, or RECOMMENDED WITH RESERVATIONS, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Love and Speculation

Manfred Kroger

The Blending Book: Maximizing Nature's Nutrients by Ann Wigmore and Lee Patterson (Garden City Park, NY: Avery Publishing Group, 1997), 146 pp., \$8.95 (paperback)

There are two major parts to this paperback: 75 pages of recipes and 42 pages of physiology textbook information (interlaced with strange statements that are totally new to traditionally trained nutritionists and dietitians).

Ann Wigmore, who died in February 1994, was probably as nice a lady as my grandmother who also worked in the garden and kitchen a great deal. Unfortunately, I had to relearn all that my grandmother taught me about nutrition. I'm afraid the same thing could probably be said about many people who read this book. It's mainly autobiographical, espousing much love; it also presents the views of self-educated health "professionals" and a subtle diatribe against everything that doesn't fit into the authors' worldview.

Like all books of this type, there are many restrictions and commands. Only organic, living plant foods are allowed. All

other supermarket items and the way we eat them are blamed for numerous ills that afflict us. If people would only prepare and drink a fluid, made over several days, of watered wheat grains, with slight fermentation, their vital life force would be restored and the body rejuvenated. Hence Ann Wigmore's choice of the name Rejuvelac for the grain water she so fervently advocated.

Thus, a well-meaning kitchen experimenter attempts to become a nutritional authority and asserts unsubstantiated claims, new theories, and repeated confusions. Even the interesting recipes can't bail out a book like this. Antitechnology believers, however, will gobble up both blended foods and the claims made for them.

It is totally unfounded to say that food enzymes are important nutrients and that their lack induces various types of ill health. Also astounding is the elevation of chlorophyll to nutrient status. The authors' animosity toward cooking and modern food processing and the complete omission of any substantial data or sources makes this book another curiosity item on the shelves of alternative eating/lifestyle libraries.

The book's key idea is that food enzymes effect the best type of digestion and optimal nutrient absorption. In the opinion of the authors, their followers should produce feces of no nutritional contents, whereas the rest of us excrete large amounts of unabsorbed nutrients. Where is the study comparing human feces that might back up the naive claims displayed here?

NOT RECOMMENDED

Stress Lore

Manfred Kroger

Stress and Natural Healing by Christopher Hobbs, L.Ac. (Loveland, CO: Interweave Press, Inc., 1997), 240 pp., \$16.95 (paperback)

With so much persuasive emphasis on natural healing these days in the media and in health-food stores, it is actually refreshing to read a book that is well written and quite comprehensive. The author, a fourth-generation herbalist, has probably read all the herbal books available to him. His many references to Traditional Chinese Medicine

give away "where he is coming from." I found the book quite readable and historically informative—"vital essence," "yin/yang," "digestive tonics to support the body's vital energy" are among the strange concepts for the noninitiated, all steeped in folklore, taught by word of mouth, never properly identified and measured, and largely ignored by modern medicine.

The book covers four areas relating to life with reduced stress: wholesome diet, herbal medicines, vital energy, and visualization and meditation. For the lay reader the book is a very good textbook review of all aspects of stress. But when the name of the world's most foremost stress researcher, Hans Selye, is misspelled, one wonders what other errors there may be.

The author never shows an antagonistic stance toward modern medical treatment, as so many books on "natural healing" do. He simply contrasts for each of the many stress conditions what a doctor will do and what a natural healer will do.

There are many good tables listing prescription and over-the-counter drugs against stress symptoms, and a 43-page chapter, "The Herbal," describing in detail 19 plant sources that have been recommended in stress treatment. For most herbs there is no experimental record of safety and efficacy, just the lore of the centuries with only occasional support from the literature of science. It also seems that much of the herbal information in this book has been filtered somewhat. Shouldn't a discussion of catnip also state that the Food and Drug Administration classifies catnip as an herbal of "undefined safety." All the herbs listed are home to hundreds of potent chemicals, and even a nonchemophobe ought to question whether physiological potency occasionally crosses the threshold of toxicological potency, as the author points out for caffeine, alcohol, tobacco, and ephedrine.

This book is not recommended as a source of guidance on how to treat stress-related illness. It gives the reader very little help in deciding which therapies are scientifically supported. But it is a well-documented catalog of "alternative" treatment methods for a common category of ills. As such, it offers interesting insights into how nonconventional practitioners think and work. **NF**

RECOMMENDED WITH RESERVATIONS

ANOTHER SUPPLEMENT SCAM

Former pediatrician Lendon Smith, MD, is promoting the Life Balances Program, which he describes as "a monitoring method that clearly shows if one is nutrient-deficient, or alkaline, or skewed in some metabolic, chemical, or enzyme department." Purchasers complete a questionnaire and undergo standard blood tests that include a chemistry profile and complete blood count. The test results are then fed into a computer, which issues a report stating which supplements are needed. The products, which are marketed by the International Health Foundation (IHF) of Portland, Oregon, include 20 bottles of vitamins and minerals, 6 dropper bottles of minerals, and an electrolyte solution. Smith claims that sniffing the bottled nutrients enables the user to determine current body needs. He states: "The sweeter or more delightful the smell, the more it is needed. If the contents smell repugnant, it is not to be taken at that particular time." The initial cost of the "complete program" is \$688 plus shipping. During the 1970s, Smith received massive publicity as a guest of Johnny Carson, Phil Donahue, and several other nationally broadcast programs. However, he faded from the limelight after being kept on probation by the Oregon medical board from 1973 through 1981, and he permanently surrendered his license in 1987 rather than face board action on charges of insurance fraud.

MEAT IRRADIATION APPROVED

The FDA has approved irradiation of meat products for controlling disease-causing microorganisms. The approval applies to fresh and frozen red meats such as beef, lamb, and pork. The agency has previously approved irradiation of (1) poultry to control pathogens, (2) pork for control of the hookworm parasite, (3) fruits, vegetables, and grains to control insects, and (4) spices, seasonings, and dry enzymes used in food processing to control microorganisms. The approval came in response to a 1994 petition by

[continued on page 5]

The Unethical Behavior of Pharmacists

How to market dubious supplements and unproven remedies

by Stephen Barrett, MD

Most pharmacists who work in retail pharmacies have a serious potential conflict of interest. On the one hand, they are professionals, expected to be knowledgeable about drugs and to dispense them in a responsible and ethical manner. On the other hand, their income depends on the sale of products. Before the FDA's OTC (Over-the-Counter) Drug Review drove most of the ineffective ingredients out of OTC drug products, few pharmacists protested or attempted to protect their customers from wasting money on products that were ineffective, unnecessary, or irrationally formulated.

During the mid-1980s, two dietitians examined the labels of vitamin products at five pharmacies, three groceries, and three health-food stores in New Haven, CT. Products were considered appropriate if they contained between 50% and 200% of the U.S. RDAs and no more than 100% of others for which Estimated Safe and Adequate Daily Dietary Intakes exist. Only 16 out of 105 (15%) of the multivitamin/mineral products met these criteria (*Journal of the American Dietetic Association* 87:341-343, 1987).

Today the situation appears worse.

Although OTC drugs are generally effective, nearly all pharmacies still carry irrational supplements, and many stock dubious herbal and homeopathic products as well. Chain drugstores are more likely to do so than individually owned stores.

*Nearly all
pharmacies still
carry irrational
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as well.*

Marketing Ploys

Pharmacy schools appear to teach the facts needed to advise people that "nutrition insurance" is rarely needed, that "stress" supplements are a scam, and that doses above the RDAs are seldom appropriate. Yet pharmacists throughout America seem content to sell supplements to people who don't need them. Their professional journals rarely contain articles criticizing the fraud involved, and their trade publications talk mainly about vitamin promotion. In fact, most pharmacy trade publications carry articles urging pharmacists to compete with health-food retailers by using similar propaganda techniques!

Many pharmacies display posters or flyers telling what vitamins do in the body. Some also list the problems that occur with nutrient deficiencies. These items are obviously intended to promote sales by inducing customers to think that (a) if a little

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is good, more is better, and/or (b) if they have any of the symptoms listed, a vitamin might be the answer to their problem.

Many vitamin promoters suggest that being busy, skipping meals, or "eating on the run" places people at risk for dietary deficiency. According to this notion, busy people don't take the time to consume nourishing food. These claims are misleading because preparing or eating a balanced diet takes no more time than preparing or eating an unbalanced diet.

Major vitamin manufacturers and trade associations play a significant role in spreading misinformation. During the early 1980s, for example, Hoffmann-La Roche advertised that "busy" people should take supplements. An article in a pharmacy trade publication later revealed that these ads were intended to influence pharmacists (who advise many customers) as well as the general public. During the same period, until stopped by the New York State Attorney General, Lederle Laboratories marketed Stresstabs with misleading claims that "stress robs the body of nutrients."

In 1989, the Council for Responsible Nutrition (CRN), a nutritional supplement industry association that mainly represents large manufacturers, began advertising that virtually everyone has a "vitamin gap." During the mid-1980s, market research had found that most Americans felt they were getting adequate nutrition from their diet. CRN's "Vitamin Gap" campaign was designed to convince people that supplements were still needed. First it falsely suggested that vitamins could help against stress. Then it falsely suggested that most Americans were not getting enough in their diet.

Lederle used the "vitamin gap" theme in a Centrum ad in the June 1997 *Journal of the American Dietetic Association*. Centrum is a sensibly formulated multivitamin/multimineral product that costs about 10¢ per day. However, the ad suggested that the majority of Americans are not getting the nutrients they need in their diet and should use Centrum to bridge the alleged "gaps." According to the ad: "Statistics

show that 9 out of 10 Americans don't get all the nutrients they need from what they eat, and, in fact, are missing out on important vitamins and minerals."

This statement was based on an analysis of data collected between 1976 and 1980 from the Second National Health and Nutrition Examination Survey. The survey found that only 9% of the participants remembered consuming the recommended five portions of fruits and vegetables on the day covered by the survey (*American Journal of Public Health* 80:1443-1449, 1990).

This does not mean that people who reported less were deficient in vitamins or minerals. Dietary surveys that measure nutrient intake for a single day or even a few days are not suitable for determining the overall quality of an individual's diet. Adequate nutrient intake can be achieved with fewer than the "recommended" number of portions of fruits and vegetables. Furthermore, Americans are eating more fruits and vegetables than they did 20 years ago. CRN used the same faulty reasoning to justify its original campaign.

CRN has produced two brochures that the National Association of Chain Drug Stores distributed to retail pharmacies. One contains a chart of "the health benefits of vitamins and minerals" and subtly suggests that many people don't get enough. Both refer to research developments and speculations that higher-than-RDA levels of various nutrients might help prevent disease. Both state that "appropriate use of nutritional supplements should be part of a healthy lifestyle," but neither provides the information an individual would need to judge whether supplementation makes sense. Both are posted to CRN's Web site (<http://www.crnusa.org/Consumer.htm>).

Investigative Reports

If asked directly for advice, most pharmacists will answer to the best of their ability. However, many are poorly informed.

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[continued on page 4]

The Hying of DHEA

Long on claims, short on evidence

by Beth Fontenot, MS, RD

It's in magazines, on store shelves, in the news, on talk shows, on the Internet, and in books. Promoters promise youth and health to all who partake of it.

It is DHEA, short for dehydroepiandrosterone, a major steroid hormone secreted by the adrenal glands. Many believe that this hormone holds the key to aging, weight loss, memory loss, and a host of other diseases and disorders. No one knows exactly what DHEA does or how it works, yet many are being lured by the claims made for this "superhormone" long before all the evidence is in.

Hormones are powerful chemicals that act as messengers in the body and affect the biochemical reactions within cells. Estrogen and testosterone are two hormones that have been studied for many years and are routinely used for treating various conditions, but the role of other hormones—like DHEA—remains a mystery.

DHEA Basics

DHEA is made from cholesterol, and it is a substrate for the production of estrogen and testosterone. When it is metabolized in the liver, a sulfate is added, and it travels through the body in the form of DHEA-sulfate (DHEAS). It is produced only in primates and a few nonprimate species; however, only in humans and apes do DHEA levels change over the course of life. DHEA levels are very high before birth, drop to nearly none after birth, rise sharply at puberty, reach their peak during the twenties, and then gradually drop by about 2% each year to negligible levels in old age. Some suggest that the drop in DHEA levels is the cause of

aging, sickness, and death. Researchers have found that DHEA levels decrease during illnesses such as lupus, rheumatoid arthritis, and major depressive disorder, and that levels are higher in men than in women at all ages.

Synthetic forms of DHEA have not been approved by the FDA though they are available in Europe and are the versions used in most of the physiologic studies. The DHEA made by vitamin and pharmaceutical companies is produced in a laboratory by extracting sterols from dioscorea, a Mexican yam.

Oddly enough, DHEA is marketed as a dietary supplement even though it is not found in any food. Once sold in health-food stores as a nonprescription weight-loss aid, DHEA was removed from the market by the FDA in 1985 because the substance had never been reviewed for safety and effectiveness. Encouraged by the loose wording of the Dietary Supplement Health and Education Act of 1994, DHEA is now marketed as a "dietary supplement" and allowed to be sold over the counter.

Exaggerated Claims

DHEA is alleged to reverse the aging process and remedy almost any bodily ill. The merchandisers have taken preliminary research (mostly done on rodents) and exaggerated the claims to create an enterprise fueled, at least in part, by our culture's worship of youth and the hope of reversing the consequences of aging. The advertisements for DHEA are filled with "research-backed claims" that quote one

The advertisements for DHEA are filled with "research-backed claims" that quote one prominent researcher after another and frequently misrepresent their findings.

[continued on page 6]

WEB WATCH

The sites listed below include some of the best (most reliable, useful) and worst (unreliable, deceptive) sources on the Web for nutrition and health information. This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>).

BEST

The Institute of Food Technologists site (<http://www.ift.org>) is oriented primarily for its members, but its news releases and "Communicator's Alert" newsletter are useful to others. One timely item is the backgrounder on IFT's Scientific Status Summary "Irradiation of Food," which was published in the January 1998 issue of *Food Technology*.

Large amounts of quackery-related information are available at the National Council Against Health Fraud (<http://www.ncahf.org>) and Health Care Reality Check (<http://www.hcrc.org>) maintained by the Georgia Council Against Health Fraud.

Newsworthy government documents can be accessed at the following URLs:

Federal Register and Congressional Record (http://www.access.gpo.gov/su_docs/aces/aaces002.html); federal legislation, past and pending (<http://thomas.loc.gov/> [Note: This URL contains no "www"]; FDA warning letters (<http://www.fda.gov/foi/warning.htm>).

WORST

The Gerson diet, falsely claimed to be effective against cancer and "other degenerative diseases," is described and is covered in detail on the Gerson Institute site (<http://www.gerson.com>). The program allegedly "works closely with nature to help the sick body to rid itself of disease through the supportive effects of simple foods, juices, and non-toxic medication." A Gerson facility opened in Arizona in 1997.

SEARCH TIPS

The Infoseek search engine (<http://www.infoseek.com>) is excellent for locating health and nutrition information because its "narrow these results" button enables searching within the results of previous searches. When searching for a word string, such as the name of an organization, placing hyphens between the words will search for that exact phrase and will bring up fewer irrelevant URLs. The resultant list can be narrowed by searching within those results with part of the name or a key word you expect to be on the site.

In 1985, reporters from *Consumer Reports* magazine visited 30 drugstores in Pennsylvania, Missouri, and California. The reporters complained of feeling tired or nervous, and asked whether a vitamin product might help. Seventeen were sold a vitamin product, and one was sold an amino acid preparation. Only 9 of the 30 pharmacists suggested that a doctor be consulted (*Consumer Reports* 51:170-175, 1986).

In 1987, two pharmacy school professors sent a questionnaire to 1000 pharmacists in the Detroit metropolitan area and received 197 responses. Among the 116 who identified their five most-common reasons for recommending vitamins or minerals, 66 (56%) listed fatigue and 57 (49%) listed stress (*Journal of Clinical Pharmacy and Therapeutics* 15:141-146, 1990). Neither reason is valid. In response to a question about homeopathy, 27.4% said it was "useful," 18.3% judged it "useless," and 54.3% "didn't know" (*Journal of Clinical Pharmacy and Therapeutics* 15:131-139, 1990).

What Happened to Ethics?

Merlin Nelson, MD, Pharm.D., coauthor of the above-mentioned survey, has asked pharmacists why they promote and sell food supplements to healthy individuals who don't need them. He concluded: "The most common reason is greed. Advertising creates a demand that the pharmacist can supply and make a profit. 'If I don't sell them, they'll just go to my competition down the street,' is a common response. Pharmacists are apparently more interested in a sale than in the patient's welfare. . . .

"Rather than just recommending a multivitamin to patients concerned about obtaining enough vitamins in their diet, pharmacists should offer sound nutritional advice or provide referrals to experts in nutrition such as registered dietitians" (*American Pharmacy* NS28(10) 34-36, 1988).

Pharmacists are also the only recognized health professionals who sell tobacco products, which cause more death and years of lost life than any other consumer product. Although some pharmacists have stopped, the majority do not consider tobacco sales unethical. Nelson is one of only a handful of pharmacists

who have criticized the misleading promotions of supplement manufacturers. As far as I can tell, no professional pharmacy organization has ever done so.

The American Pharmaceutical Association's code of ethics does not state that pharmacists have a duty to prevent dubious products from lining their shelves. Five states have laws declaring it illegal for pharmacists to sell ineffective products, but these laws have never been applied to the sale of OTC products.

I believe that pharmacists have as much of an ethical duty to discourage use of inappropriate products as physicians do to advise against unnecessary surgery or medical care. Very few pharmacists do so. Pharmacy journal editors ignore this problem. Hospital-based pharmacists generally exhibit a higher standard of practice, but very few of them are speaking out about the problems described in this article. **NF**

Stephen Barrett, MD, is a retired psychiatrist who resides in Allentown, Pennsylvania. His 44 books include The Vitamin Pushers: How the "Health Food" Industry Is Selling America a Bill of Goods.

Making Up for Lost Revenues

Pharmacy trade publications, such as *Natural Pharmacist*, suggest that "natural products" offer opportunities to make up for prescription drug revenues lost as a result of managed care and other cost-containment programs. One pharmacy supplier aligned with this trend is The JAG Group of San Clemente, California. According to its Web site (<http://www.jagenterprises.com/servmain.htm>), "natural products offer profit margins greater than those for prescription drugs." JAG's comprehensive program features:

- Product lines that typically produce a 100% markup or more.
- A three-day seminar covering "the importance of wellness" and how to "use natural products to prevent and/or improve chronic disease states."
- WellStore Software designed as a sales and marketing tool to: (1) capture customer information, including e-mail address, (2) categorize products to market directly to customer needs, (3) provide thank-you notes to encourage loyalty, (4) provide product information to print for customers, and (5) track patient-health histories to create fee-for-service revenue.
- Pharmacist Plus™ Software with causes, signs, and symptoms of 223 common ailments and specific dietary, homeopathic, and herbal recommendations. (I believe that providing such information to customers would be outside the scope of pharmacy practice and would constitute the illegal practice of medicine and would violate state laws against theft by deception. Furthermore, homeopathic products have no proven effectiveness.)

- Drug Depletion Software telling "what supplements patients need to replace vital nutrients that are depleted by many of the prescription drugs they are taking." (I do not believe there are many situations in which this is important.)
- Nutritional Analysis Software (an electronic nutritionist) to allow the pharmacist to charge a fee for providing consultations to patients—including assessment of "nutritional needs that best fit your patient's gender, age, lifestyle, analysis of food intake and identification of nutritional deficiencies" and "recommendations for optimum nutrient levels to maintain good health." (I do not believe any software can do this.)
- A TV commercial, radio spots, newspaper and yellow page ads, doctor letters, and a column that can be published under the pharmacist's own name.
- A personalized Internet Web page, which adds the pharmacist to a list of "complementary and natural healthcare practitioners worldwide" so that "when someone searches for a natural healthcare practitioner, they will find you." (I do not believe that pharmacists are qualified or legally permitted to be "natural healthcare practitioners.")
- An in-store display unit designed to let customers see a variety of products, books, and services in one place.
- Answers to questions needed "when a customer is standing in front of you" or when "you want to know about a new fad or product your customer just asked you about."
- "The best experts in the fields of pharmacy, natural products, and complementary medicine available" by picking up the phone or accessing the Internet.—**SB**

[continued from page 1]

Isomedix Inc., which operates an irradiation facility in New Jersey.

IRRADIATION LABELING CHANGED

Before November 1997 when the FDA Reform Act was passed, irradiated foods in the United States were required to be clearly labeled with a green radura symbol and the phrase "Treated by Irradiation" or "Treated with Radiation." The new act calls for the irradiation statement to be no more prominent than the product ingredient list. Irradiation benefits consumers by killing most of the pathogens (disease-causing germs) that may be present. The change was made because prominent labeling may mislead people into thinking that irradiated foods are risky (as falsely claimed by the health-food industry and its allies). Some health-food industry members see the situation as an opportunity to boost sales of nonirradiated meats by persuading consumers that irradiated meats are inferior.

OBESITY AND BREAST CANCER RISK

Researchers who followed more than 95,000 women for 16 years have concluded that avoiding weight gain during adult years may contribute importantly to the prevention of breast cancer after menopause, particularly among women who do not use postmenopausal hormone therapy (*JAMA* 278:1407-1411, 1997). Copies of this report are available from Walter C. Willett, MD, Channing Laboratory, Boston, MA 02115.

RIFE OPERATOR SUED

The attorneys general of Wisconsin and Minnesota have filed suit to stop Shelvie Rettman of Prior Lake, Minnesota, from representing that she can cure cancer. Rettman does not have a medical license in either state. Her approach includes treatments with a device called the Rife Frequency Generator, a special diet, dietary supplements, foot reflexology, and a regimen of baths. The Rife device allegedly generates radio waves with precisely the same frequency as alleged cancer-causing bacteria, shattering them

in the same manner as a crystal glass breaks in response to the voice of an opera singer. The American Cancer Society has noted that although sound waves can produce vibrations that break glass, radio waves lack sufficient energy to destroy bacteria (*CA-A Cancer Journal for Clinicians* 44:115-127, 1994).

NEW ANTIFLUORIDATION GROUP

The newly formed Global Alliance Against Fluoridation (GAAF), based in New York City, hopes to coordinate nationwide and worldwide efforts. Consuelo Reyes, the group's coordinator, states that it was formed in response to the American Dental Association's drive to achieve nationwide fluoridation through federal legislation by the year 2000. Fluoridation opponents have not had an effective national presence since the early 1980s.

ORGANIC CANDY FLAP

Natural Foods Merchandiser has reported that a six-year-old boy in Colorado Springs, Colorado, received a half-day school suspension after sharing organic lemon tart candies with schoolmates. According to the article, school officials assumed the brownish candies were drugs and called the fire department and ambulance rescue teams. The parents were also advised to take the boy to the hospital for tests.

HEALTH CLAIM SURF DAY

In October 1997, FTC officials joined with public health and consumer protection and information agencies from the United States, Canada, and Mexico to "surf" the Internet for potentially false or deceptive advertising claims concerning treatments for heart disease, cancer, AIDS, diabetes, arthritis, and multiple sclerosis. Within a few hours, the surfers identified more than 400 Web sites and many Usenet newsgroups using such promotions. The agency then sent hundreds of e-mail messages pointing out that advertisers must have evidence to back up their claims. FTC staff members plan to revisit the sites to determine whether changes were made.

CAMPANA ALERTA

The FTC has announced settlements with four companies pitching false and unsubstantiated claims to Spanish-speaking populations in the United States and Mex-

ico. One company falsely claimed that *uno de gato* (cat's claw) can strengthen the immune system, reduce abnormal inflammation, cure acne, and have no toxic effects. Another company falsely claimed that its Super Formula Reductora would control and regulate metabolism, reduce appetite, burn or dissolve fat, and cause weight loss. The third company made unsubstantiated claims for its "bioactive cellulite cream" and weight-loss tablets. The fourth represented that its dietary supplement Venoflas would remove dangerous clogs in the circulatory system and treat the symptoms of varicose veins and hemorrhoids. The actions were part of *Campaña Alerta*, a joint action by the FTC, FDA, seven state attorneys general, and the Mexican government. The agencies have also joined forces for an educational campaign.

NUTRI/SYSTEM CRITICIZED FOR PROMOTING 'PHEN-PRO'

Eli Lilly and Co., which manufactures the antidepressive drug Prozac, has notified Nutri-System Weight Loss Centers that it does not endorse the blending of Prozac and phentermine (phen-pro) as a weight-loss agent. Nutri/System has been using the combination for a year but began promoting it heavily after stopping the use of phen-fen (dextfenfluramine plus fenfluramine) at its 450 centers. Nutri/System claims there is a research basis for using phen-pro, but Lilly warned that the FDA has not authorized Prozac for weight control and that Nutri/System's commercial references to the antidepressant violate trademark law.

GLUCOSAMINE SULFATE CRITIQUED

The *Medical Letter for Doctors*, which provides top-quality evaluations of drug products, has concluded that glucosamine appears to be safe and might be effective for treatment of osteoarthritis (*Medical Letter* 39:91-92, 1997). However, it cautions: "Most published trials . . . lasted only four to eight weeks and *Medical Letter* consultants find them unconvincing. As with other 'dietary supplements,' the purity of the glucosamine products sold in pharmacies, health food stores and supermarkets in the USA is unknown." The Arthritis Foundation has called for more rigorously controlled studies. **NF**

prominent researcher after another and frequently misrepresent their findings.

The claims for DHEA are numerous: it boosts the immune system, prevents cancer, melts away body fat, prevents heart disease, enhances the libido, slows the aging process, prevents osteoporosis, treats Alzheimer's Disease, helps depression, lessens the symptoms of menopause and PMS, controls diabetes, slows the progression of AIDS, and provides relief from lupus.

Advertised as the "anti-aging miracle of the 21st century," DHEA is available in tablet, capsule, cream, ointment, drop, roll-on, gum, and sublingual lozenge form. It may also be purchased in combination with various herbs, vitamins, and minerals "for greater effectiveness and absorption."

The recommended daily dosage of DHEA varies widely among companies. Suggestions vary from 3 to 2000 mg per day. Some of the advertisements recommend that consumers have their DHEA level tested before beginning supplementation in order to determine the proper dosage, but because the product is readily available without a prescription, it's doubtful that many consumers will spend the \$70 to \$75 it would cost to have a blood test performed.

Extracts of ground dioscorea are sold in pill form as "natural DHEA" or a "DHEA precursor." These extracts are widely advertised in magazines and newspapers, on the Internet, and are sold in health-food stores. These products are not required to meet any government standards for quality or purity, and they do not convert to DHEA in the body as they are advertised to do.

Some DHEA sellers have devised creative marketing schemes. One company sells a "DHEA Home Test Kit" so consumers can collect a saliva sample, mail it to a laboratory, and receive a report which will supposedly help them determine the level of supplementation their body needs. Another company offers a "DHEA Symptom Survey Form" on the Internet with a list of symptoms ranging from moodiness to heartburn to high blood pressure. Twenty or more symptoms, they say, means you are likely to have a DHEA deficiency due to stress.

Weak Evidence

DHEA was first studied in 1934, and thousands of studies have been performed on it since. However, very few of these studies have involved human subjects. Most involved rodents that were fed daily doses of DHEA. These experiments showed that DHEA could increase life span, improve immunity, facilitate weight loss, and have positive influences on illnesses such as diabetes, cancer, and heart disease. However, rats and mice produce only minuscule amounts of the DHEA that humans produce, and scientists are well aware of the fact that what works in rodents won't necessarily hold true in humans.

The current interest in DHEA began three years ago after a three-month study of DHEA supplementation in humans showed an increase in perceived physical and psychological well-being and mood among a group of 30 men and women. The researchers went on to study the effects of a higher dose of supplemental

DHEA in a six-month study, with an even smaller sample size, to determine if a greater dose for a longer period of time would have a more significant effect. That study showed an increase in lean body mass in both sexes, some increase in muscle strength, and improved immune function. Despite claims to the contrary, no increase in libido was reported in these studies. These studies consisted of only small groups of people; long-term studies on larger populations are needed to confirm these results.

Several studies have suggested that there may be an association between low DHEA levels and heart disease in men, but not women. Other studies have produced contradictory results regarding the role of DHEA in heart disease, and the data from more than one study by the same researcher have produced conflicting results.

In short-term studies, DHEA appeared to improve the functioning of the immune system by elevating the number



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of natural killer cells (T cells and B cells). Preliminary research also suggests that DHEA may improve the ability of the elderly to develop antibodies to the influenza vaccine when it is given along with the vaccine. In addition, DHEA supplementation appears to enhance the ability of T cells to produce interferon and interleukin-2, strong antitumor and antiviral chemical substances in the body. Long-term studies are needed in order to clarify DHEA's role in the immune system.

Other human research with DHEA suggests that it may improve insulin sensitivity in diabetics and maintain bone mineral density after menopause. The most promising use for DHEA appears to be related to its role in the treatment of systemic lupus erythematosus, an autoimmune disease. However, all of these studies have been conducted on small groups of people, and until more research is done, the results are considered preliminary.

There is no evidence at this time that DHEA can prevent cancer. Claims regarding DHEA's role in cancer prevention are based on studies done only in rodents. Cancer cells can take years to become tumors, and the longest studies done on humans have lasted only six months.

DHEA's role in weight loss is conjecture based on the possibility that DHEA can improve insulin sensitivity. Studies in humans have failed to show any beneficial effect of DHEA on body composition or energy expenditure.

In short, the studies that have been performed on DHEA and humans to date are preliminary, inconclusive, or contradictory.

At What Risk?

DHEA research also provides little solid information on the possible adverse effects of long-term administration. These may take years to become evident. As a powerful

steroid hormone, DHEA has the possibility to produce a wide range of side effects throughout the body.

Research has shown that too much DHEA lowers cortisol levels in the body. In women, DHEA has been shown to produce acne, increase facial hair, and cause breast tenderness. Because it can be converted in the body to potent androgens such as testosterone, it has the potential to masculinize women. In men, it could stimulate the growth of prostate cancer, and in women it could increase the risk of breast or ovarian cancer. There is some evidence that taking DHEA for even a short period of time may lead to liver damage.

Many researchers have spoken out against supplementation with DHEA, citing concerns about the lack of research information and the potential for harmful side effects. All of the media hype combined with its easy accessibility lead to concerns that selling such a potent chemical in health-food stores and by mail order may be a disaster waiting to happen.

Dr. Fernand Labrie, a leading DHEA researcher at the Laval University CHUL Research Center in Quebec, Canada, states, "We are very much worried . . . about the free availability of this drug, which, in fact, should be given exclusively following prescription by a physician who needs to adjust the dose according to the individual blood levels for each subject."

The Outlook

According to Dr. Frank Bellino, Endocrinology Program Administrator of the National Institute on Aging, the NIA is currently sponsoring various studies related to DHEA and its role in bone loss in women, atherosclerosis, and immunity. Several studies aimed at better understanding the process by which DHEA levels in blood decrease over the life span of humans are also underway at this time.

Many researchers have spoken out against supplementation with DHEA, citing concerns about the lack of research information and the potential for harmful side effects.

In addition, the NIA has solicited and is in the process of reviewing grant proposals for studies on the use of DHEA in humans that will attempt to determine the exact mechanisms by which DHEA works in the body and to confirm the results of some of the small-scale studies that have already been performed.

Other ongoing studies sponsored by the National Institutes of Health (NIH) include DHEA's effects on patients with Alzheimer's Disease, systemic lupus erythematosus, and its possible role in the prevention of cancer.

Large-scale, randomized, placebo-controlled clinical studies on DHEA are needed before there are answers to the many unanswered questions about DHEA. Until the questions are answered, supplementation is a risky business.

In the meantime, many of the alleged benefits of DHEA can be achieved with lifestyle changes. Eating a low-fat diet and participating in regular exercise can facilitate weight loss, increase lean body mass, reduce the risk of heart disease, diabetes, cancer, and osteoporosis, and ward off many of the problems associated with aging. Fortunately, the evidence for this approach is in. **NF**

Beth Fontenot is a nutrition consultant and freelance nutrition writer in Lake Charles, LA. She serves on the adjunct faculty at both McNeese State University in Lake Charles and Lamar University in Orange, TX.

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Meat Madness

Manfred Kroger

Slaughterhouse: The Shocking Story of Greed, Neglect, and Inhumane Treatment Inside the U.S. Meat Industry by Gail A. Eisnitz (Amherst, NY: Prometheus Books, 1997), 311 pp., \$25.95 (hardback).

Ninety years ago Upton Sinclair's novel *The Jungle* was aimed at Americans' hearts—it wanted people to feel for the exploited immigrant workers in the meat industry. But the book hit readers in the stomach instead with its graphic details of unsanitary and inhumane conditions. That book was largely responsible for the country's first meat inspection law. Now comes Gail Eisnitz, an untiring worker for the Humane Farming Association, an excellent writer-reporter, a thorough and persistent investigator, and spokesperson for animals faced with cruelty, especially during the last 10 minutes of life. She deserves as much credit as Sinclair (who was finally honored by the White House shortly before his death for his work's impact on national affairs).

However, what Eisnitz attempts to accomplish is not the creation of a new

law, but the enforcement of an existing one, the 1958 federal Humane Slaughter Act. In harrowing detail and in the words of numerous line workers (usually with a chip on their shoulders) the actual, unbelievably horrifying conditions in several slaughterhouses are described.

The act is simply not enforced. Those responsible for it or answering to it look the other way and are desensitized because they are literally forced by line speeds and fear of job loss to disassemble living creatures by any means possible. It is a riveting account, not for the faint of heart.

The book is an indictment of an entire industry: detached government regulators, profit-conscious managers, illegal practices, conditions harmful for man and beast alike—all condoned by a naïve public enjoying a steady supply of affordable meat products. This industry has the highest accident rate, and its workers include recent immigrants, school dropouts, disgruntled social misfits, prison inmates working under a release program, and some truly sadistic, despicable characters.

Gail Eisnitz has done a great service with this exposé. It remains to be acted upon now. I say this despite the book's very one-sided presentation and the author's zealotry. Her accounts desperately need to be counterbalanced by the industry's good side, if that is possible.

RECOMMENDED

Compassion and Sense

Manfred Kroger

Gilda's Disease: Sharing Personal Experiences and a Medical Perspective on Ovarian Cancer by M. Steven Piver with Gene Wilder (Amherst, NY: Prometheus Books, 1996), 184 pp., \$22.95 (hardback).

Here are four books in one: (1) film star Gene Wilder's touching account of his wife's battle with cancer from 1986 to 1989; (2) Gilda Radner's family history, career highlights (remember Roseanne Roseannadanna of "Saturday Night Live" in the '70s?), and excerpts from her best-selling autobiography, *It's Always Some-*

thing; (3) Dr. Piver's commentary on this patient's path through these three years; and (4) much information on ovarian cancer in easy-to-read language. Readers will experience both emotional and rational perspectives. A cancer patient's desperate search for answers is displayed, especially those regarding prevention, and an expert's state-of-the-art explanations are detailed. It is refreshing to see that so-called alternative therapies are fairly criticized and not blindly endorsed.

Dr. Piver is a cancer surgeon. He writes knowledgeably and compassionately about ovarian cancer, of which there are 30 types which kill 12,000 women in the United States every year. Twice as many are diagnosed to have this cancer. It is for these women and their families that this book was written and for all others who may want to learn about preventive measures. **NF**

RECOMMENDED

The text of a recent *LA Times* ad sent in by *NF* reader Elaine S. Hofberg:

Looking beyond traditional cares?
Searching for something more holistic than
oriental therapies?
Wishing to break free from spiritual
and cultural abuse?

For the first time in the U.S.!

DRUIDIC MEDICINE

Where state-of-the-art American scientists learn
from the most ancient spirituality in the World

When foremost doctors in California team
together with the most famous spiritual leader
in Europe

Why the last Lineal Druid on Earth has come to
the United States to help people recover their
true Native identity and Ethnic memory

Endorsed by Thousands in Europe
(EXPERIENCED)

The only care that integrate [*sic*] Health,
Spirituality and Ecology as One.
(GREEN SPIRITUALITY & HEALTH)

More committed to Mother Earth than any other
Indigenous tradition
(EURO-ABORIGINE HERITAGE)

by appointment only

NEW BILL INTENDS TO OUTLAW CONSUMER PROTECTION

The Health Free Speech Act, introduced by Rep. Ron Paul (R-TX), would amend the Federal Food, Drug, and Cosmetic Act by inserting the words "other than food" into its definition of the term "drug." The amended definition would read "articles (except devices), other than food, intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man." The bill's proponents believe that this would exempt not only foods but also herbs and dietary supplements. The bill's intention is to make it impossible for the FDA to regulate claims made for any product that a seller labels as a dietary supplement.

'NUTRITION COUNSELOR' DISCIPLINED

Jane Winterbottom Donigan, 79, a licensed nutrition counselor who owns a health-food store in Boca Raton, Florida, has signed a consent agreement to settle an administrative complaint that she was "guilty of committing an act of . . . misconduct in the practice of dietetics and nutrition." The complaint states that in 1995, Donigan was consulted by a 77-year-old woman who complained of numbness and tingling of her left arm, arthritis in her right hip, acid stomach, incontinence, mitral valve prolapse, rectal pains, neck and low back pain, bladder infection, low energy, intermittent nausea, frequent headaches, memory loss, sinus problems, and poor circulation of the legs. Without communicating with the woman's doctor, Donigan recommended that she take 400 mg of ginkgo biloba per day, an amount higher than the recommended dosage (150 mg). Four days later, the woman was hospitalized with a severe stroke. Donigan does not have accredited nutrition credentials but was licensed after being grandfathered by virtue of her "professional experience." Although ginkgo has anticoagulant properties, a connection between the ginkgo and the stroke cannot be established because the stroke could have occurred anyway.

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The Truth about Organic 'Certification'

Does it help ensure safer foods— or just costlier ones?

by Stephen Barrett, MD

"If you as a consumer have a desire to purchase a fake or a fraud of one kind or another, should your government guarantee your right to do so? More than that, is your government obligated to prosecute one who, knowing of your propensity for fraud, tricks you into buying the genuine in place of buying the fake? Remember—ing that 'your government' is all the rest of us, is it right for you to take our time and money to underwrite such ridiculous exercises as making sure you are cheated when you want to be cheated? And must we penalize the man who breaks his promise to cheat you?"

These astute questions were raised in 1972 by Dick Beeler, editor of *Animal Health and Nutrition*, who was concerned about laws being adopted in California and Oregon to certify "organic" foods. Those laws signaled the beginning of efforts that culminated in 1990 with passage of the U.S. Organic Foods Production Act, which ordered the U.S. Department of Agriculture (USDA) to set certification standards. Although the USDA had opposed passage of the act, the Alar scare plus a campaign by environmental, consumer, and farm groups persuaded Congress to include it in the 1990 Farm Bill (NF 8:25-29, 1991).

As directed by the law, the secretary of agriculture established a National Organic Standards Board to help develop a list of substances permissible in organic production and handling and to advise the secretary on other aspects of implementing a National Organic Program. In 1992, the secretary appointed 15 people, 8 of whom were industry members. The board held 12 full-board meetings and 5 joint committee meetings and received additional input through public hearings and written submissions from interested persons. It presented its recommendations to the secretary in 1994 and issued 30 subsequent addenda.

Studies have found that the pesticide levels in foods designated organic were similar to those that were not.

The Current Marketplace

Total retail sales of the organic industry have reportedly risen from \$1 billion in 1990 to \$3.5 billion in 1996. "Certified" organic cropland production expanded from 473,000 acres to 667,000 acres between 1992 and 1994 and is expected to reach two million acres by the year 2000. Despite this rapid growth, the organic industry represents a very small percentage of total agricultural production and sales.

The most common concept of "organically grown" food was articulated in 1972 by Robert Rodale, editor of *Organic*

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Gardening and Farming magazine, at a public hearing: "Food grown without pesticides; grown without artificial fertilizers; grown in soil whose humus content is increased by the additions of organic matter; grown in soil whose mineral content is increased by the application of natural mineral fertilizers; has not been treated with preservatives, hormones, antibiotics, etc." However, in 1980, a team of scientists appointed by the USDA concluded that there was no universally accepted definition of "organic farming." Their report stated:

The organic movement represents a spectrum of practices, attitudes, and philosophies. On the one hand are those organic practitioners who would not use chemical fertilizers or pesticides under any circumstances. These producers hold rigidly to their purist philosophy. At the other end of the spectrum, organic farmers espouse a more flexible approach. While striving to avoid the use of chemical fertilizers and pesticides, these practitioners do not rule them out entirely. Instead, when absolutely necessary, some fertilizers and also herbicides are very selectively and sparingly used as a second line of defense. Nevertheless, these farmers, too, consider themselves to be organic farmers.

Today, approximately 4,000 farmers and 600 handlers are certified by 33 private or 11 state agencies. Each certifying agency has its own standards and identifying marks. No industrywide agreement exists about which substances should be permitted or prohibited for organic production and handling.

The Proposed Rule

On December 16, 1997, the USDA Agricultural Marketing Service proposed rules for a National Organic Program (Federal Register 62:65850-65967, 1997). The proposal includes: (1) national standards for production and handling, (2) a National List of approved synthetic substances, (3) a certification program, (4) a program for accrediting certifiers, (5) la-

beling requirements, (6) enforcement provisions, and (7) rules for importing equivalent products. A new USDA seal will be the only permissible marker.



The proposed rule defines organic farming and handling as:

A system that is designed and managed to produce agricultural products by the use of methods and substances that maintain the integrity of organic agricultural products until they reach the consumer. This is accomplished by using, where possible, cultural, biological and mechanical methods, as opposed to using substances, to fulfill any specific function within the system so as to: maintain long-term soil fertility; increase soil biological activity; ensure effective pest management; recycle wastes to return nutrients to the land; provide attentive care for farm animals; and handle the agricultural products without the use of extraneous synthetic additives or processing in accordance with the Act and the regulations in this part.

The weed and pest-control methods to which this refers include crop rotation, hand cultivation, mulching, soil enrichment, and encouraging beneficial predators and microorganisms. If these methods are not sufficient, various listed chemicals can be used. (The list does not include cytotoxic chemicals that are carbon-based.) The proposal does not call for monitoring specific indicators of soil and water quality, but leaves the selection of monitoring activities to the producer in consultation with the certifying agent.

For raising animals, antibiotics are not permitted as growth stimulants but are

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The Creatine Craze

Such ergogenic promise—but at what price?

by Beth Fontenot, MS, RD

Each year athletes spend more than one hundred million dollars on dietary supplements in the hope of improving their physical appearance and athletic performance. Today's most popular ergogenic aid is creatine. Its use is prevalent in high school, college, and professional athletic programs, and some Olympic contenders have used it. More than one hundred companies sell a creatine product. You can buy creatine in gyms, in local "health-food" stores, on the Internet, and in General Nutrition Stores across the country. But creatine is not for everyone, and those who decide to take it should know the risks.

Why Creatine

Creatine was introduced as a potential ergogenic aid in 1993, and since then its use has grown dramatically. The National Collegiate Athletic Association (NCAA) Study of Substance Use and Abuse Habits of College Student-Athletes showed that 13.3% of those surveyed reported using creatine.

Creatine is an organic compound made by the liver, kidneys, and pancreas from the amino acids glycine, methionine, and arginine. From these sites of synthesis, creatine is transported to the skeletal muscles. Creatine exists in two forms in muscle: as free creatine and as creatine phosphate, which makes up two-thirds of the total creatine in the body.

In addition to being synthesized by the body, creatine also comes from the consumption of meat and fish products. There is no Recommended Dietary Allowance (RDA) for creatine, but 1 to 2 grams per day is what researchers have estimated as the daily requirement. Typically, about one gram per day is made by the body, and one gram per day is consumed in the diet.

During quick bursts of activity, creatine plays a role in energy production. When muscles contract, adenosine triphosphate (ATP) is used to fuel the movement. ATP provides energy by releasing one of its phosphate molecules, and then it becomes another compound called adenosine diphosphate (ADP). A muscle has only enough ATP stored to perform high-intensity muscle contractions for about 10 seconds. For the energy system to continue, more ATP must be produced.

Creatine phosphate gives its phosphate molecule up to ADP to create more ATP. The ability to regenerate ATP, then, depends on the supply of creatine phosphate in the muscles.

Creatine supplementation: No one knows the long-term effects.

Promise and Reality

Creatine is claimed to increase energy, increase muscular strength, produce greater and faster muscle gains, improve endurance, delay fatigue, and aid in burning fat. It is sold in a variety of forms: pills, powders, capsules, liquids, fruit-chew candy, and a "just-add-water" single-serving form. Some products combine creatine with other substances like citrate or dextrose, or with various vitamins, minerals, and amino acids. The marketers claim that these additives provide greater benefit to the athlete.

In the early 1990s researchers started to look at the impact of creatine supplementation on exercise performance. Since then, research has suggested that creatine may have a future as an ergogenic aid. In several studies, subjects taking creatine have demonstrated significant improvement in short bouts of activities that require both power and strength such as sprinting, knee extensions, and bench-press exercises.

According to current theory, creatine

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Nutrition Forum rates the factual accuracy and usefulness of Internet sites containing nutrition and health information. This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web.

BEST

MedicineNet (<http://www.medicinenet.com/>) provides articles, written by experts, on hundreds of health-related topics.

The National Osteoporosis Foundation Web site (<http://www.nof.org>) tells how to prevent and treat osteoporosis.

The American Dental Association has extensive information on fluoridation at <http://www.ada.org/consumer/fluoride/fl-menu.html>

WORST

The International Health Foundation site (<http://www.ihf.com/people.html>) markets Life Balance products (<http://www.lbwic.com/>) said to be "based on individual body chemistry." The program's core is a 20-bottle vitamin regimen whose dosage is determined by smelling the bottles. ("The sweeter or more delightful the smell, the more it is needed. If the contents smell repugnant, it is not to be taken at that particular time.") The "sniff test" is a brainchild of Lendon Smith, MD, who retired in 1987 rather than face charges of insurance fraud brought by the Oregon Board of Medical Examiners.

Oxford Health Care (<http://www.oxhp.com>) describes the company's "comprehensive alternative medicine program" and its catalog of herbal products, supplements, homeopathic products, and publications.

The Vitamin Advisor link of Ask Dr. Weil (<http://cgi.pathfinder.com/drweil/>) leads to a questionnaire, which, when completed, provides Andrew Weil, MD's "personalized formula of my recommended vitamins, supplements and tonics." The site also links to an online store where the gullible can purchase the recommended items.

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permitted to counter infections. The rules permit up to 20% of animal feed to be obtained from nonorganic sources. This was done because some nutrients (such as trace minerals) are not always available organically. Irradiation, which can reduce or eliminate certain pests, kill disease-causing bacteria, and prolong food shelf-life, is permitted during processing. Genetic engineering is also permissible.

In an accompanying news release, USDA Secretary Dan Glickman stated:

What is organic? Generally, it is agriculture produced through a natural as opposed to synthetic process. The natural portion of the definition is fairly obvious, but process is an equally critical distinction. When we certify organic, we are certifying not just a product but the farming and handling practices that yield it. When you buy a certified organic tomato, for instance, you are buying the product of an organic farm. And, consumers are willing to fork over a little more for that tomato. They've shown that they will pay a premium for organic food. National standards are our way of ensuring that consumers get what they pay for.

BE A NUTRITION FORUM CONTRIBUTOR!

If you find any news or information that may be of interest to our readers—such as published articles, news reports, press releases, or relevant personal experience—please send it to us. Mail it to Lewis Vaughn, *Nutrition Forum*, P.O. Box 664, Amherst, NY 14226-0664. We're especially interested in receiving information about enforcement actions by state agencies, lawsuits by victims of quackery, and health-fraud news that may have been overlooked by the national media.

More Nutritious?

The USDA proposal applies to all types of agricultural products and all aspects of their production and handling, ranging from soil fertility management to the packaging and labeling of the final product. The document is intended to address production methods rather than the physical qualities of the products themselves. In fact, it states: "No distinctions should be made between organically and non-organically produced products in terms of quality, appearance, or safety." In other words, no claim should be made that the foods themselves are better—or even different!

Organic foods are certainly not more nutritious. The nutrient content of plants is determined primarily by heredity. Mineral content may be affected by the mineral content of the soil, but this has no significance in the overall diet. If essential nutrients are missing from the soil, the plant will not grow. If plants grow, that means the essential nutrients are present. Experiments conducted for many years have found no difference in the nutrient content of organically grown crops and those grown under standard agricultural conditions.

Safer?

"Organic" proponents suggest that their foods are safer because they have lower levels of pesticide residues. However, the pesticide levels in our food supply are not high. To protect consumers, the FDA sets tolerance levels in foods and conducts frequent "market basket" studies wherein foods from regions throughout the United States are purchased and analyzed. The agency has found that about two-thirds of the fruits and vegetables have no detectable pesticides and only about 1% of domestic and 3% of imported foods had violative levels. Its annual Total Diet Study has found that dietary intakes of pesticides for all population groups are well within international and EPA standards.

Studies conducted since the early 1970s have found that the pesticide levels in foods designated organic were similar to those that were not. In 1997, *Consumer Reports* purchased about a thousand pounds of tomatoes, peaches, green bell peppers, and apples in five cities and tested them for more than 300 synthetic

pesticides. Traces were detected in 77% of conventional foods and 25% of organically labeled foods, but only one sample of each exceeded the federal limit (*Consumer Reports* 63[1]:12–18, 1998).

Pesticides can locate on the surface of foods as well as beneath the surface. The amounts that washing can remove depends on their location, the amount and temperature of the rinse water, and whether detergent is used. Most people rinse their fruits and vegetables with plain water before eating them. *Consumer Reports* stated that it did not do so because the FDA tests unwashed products. The amount of pesticide removed by simple rinsing has not been scientifically studied but is probably small. *Consumer Reports* missed a golden opportunity to assess this.

Do pesticides found in conventional foods pose a health threat? Does the difference in pesticide content warrant buying "organic" foods? *Consumer Reports* equivocates: "For consumers in general, the unsettling truth is that no one really knows what a lifetime of consuming the tiny quantities in foods might do to a person. The effect, if any, is likely to be small for most individuals—but may be significant for the population at large." But the editors also advise, "No one should avoid fruits and vegetables for fear of pesticides; the health benefits of these foods overwhelm any possible risk."

NF Senior Associate Editor Manfred Kroger, Ph.D., Professor of Food Science at Pennsylvania State University, puts the matter more bluntly: "Scientific agriculture has provided Americans with the safest and most abundant food supply in the world. Agricultural chemicals are needed to maintain this supply. The risk from pesticide residue, if any, is minuscule, is not worth worrying about, and does not warrant paying higher prices."

Tastier?

Taste is determined primarily by freshness. In the early 1990s, Israeli researchers made 460 assessments of 9 different fruits and vegetables and found no significant difference in quality between "organic" and conventionally grown samples (*American Journal of Alternative Agriculture* 7:129–136, 1992). The

Consumer Reports study found no consistent differences in appearance, flavor, or texture.

Organically produced ("free-range") poultry are said to be raised in an environment where they are free to roam. To use this term, handlers must sign an affidavit saying that the chickens are provided with access to the outdoors. A recent taste test conducted by *Consumer Reports* rated two brands of free-range chicken as average among nine brands tested. Its March 1998 issue stated that few chickens choose to roam and that one manager said that free-ranging probably detracts from taste because it decreases the quality of the bird's food intake (*Consumer Reports* 63[3]:12-18, 1998).

Organic Proponents Object

Health-food-industry trade and consumer publications indicate widespread dissatisfaction with the proposed rules. The Organic Farmers Marketing Association (<http://www.ota.com>) states:

The definition of organic as written in the proposed national or-

ganic standards lacks the holistic approach central to organic practices. The proposed rules take a reductionist approach to organic food production that eliminates key concepts such as the health of the agro-ecosystem and biodiversity on the farm.

Industry sources state that the USDA has received more than 4,000 comments on the proposed rules. One distributors association official wrote that if the rules are implemented, his members would seek to buy its agricultural products from foreign sources. Others have complained that the proposed fees are too high.

Most objections pertain to the provisions that permit irradiation, genetic engineering, and the use of sewage sludge as fertilizer. Other objections include permitted use of amino acids as growth promoters, antibiotics (when necessary to save the animal's life), synthetic animal drugs, food additives, and animal feed from nonorganic sources.

Certification agencies with "higher standards" have objected that they are prohibited from stating this on their labels. Some poultry farmers have objected

to provisions enabling intermingling of free-range poultry and other poultry.

The Bottom Line

Organic certification, no matter what the rules, will not protect consumers. Foods certified as "organic" will neither be safer nor more nutritious than "regular" foods. They will just cost more and may lessen consumer confidence in the safety of "ordinary" foods.

(Copies of the proposed rule can be purchased for \$8 from the Federal Register by calling [202] 512-1800. Additional information can be accessed through the National Organic Program Web page at <http://www.ams.usda.gov/nop>. Comments on the proposed rule can be sent from the Web site or mailed to: Eileen S. Stommes, Deputy Administrator, USDA-AMS-TM-NOP, Room 4007-So., Ag Stop 0275, P.O. Box 96456, Washington, DC 20090. Comments will eventually be posted on the Web page.) **NF**

Stephen Barrett, MD, a retired psychiatrist who resides in Allentown, Pennsylvania, is a board member of the National Council Against Health Fraud and board chairman of Quackwatch, Inc.

B R I E F S

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However, Donigan failed to comply with Florida's licensing law, which sets documentation standards and mandates medical consultation or referral under certain circumstances. The consent agreement requires her to pay a \$500 fine, take 10 hours of continuing education courses, and adhere to the standards required by the law.

NEW ANTIQUACKERY BOOK

Chemical Sensitivity: The Truth About Environmental Illness takes a close look at the myths and facts related to multiple chemical sensitivity, candidiasis hypersensitivity, sick building syndrome, the Feingold Diet, Gulf War syndrome, and false claims of mercury-amalgam toxicity. The book is written by Stephen Barrett, MD, and Ronald Gots, MD, Ph.D. Copies can be ordered from the National Council Against Health Fraud (NCAHF), P.O. Box

1747, Allentown, PA 18105. The price for NCAHF members is \$25.90 (\$26.80 Canada), postage included. The nonmember price is \$28.50 (\$29.40 Canada).

CAMPAIGN AGAINST FRAUD BY E-MAIL

The FTC and U.S. Postal Service have notified more than 1,000 junk e-mailers that the agencies are monitoring unsolicited e-mail for fraudulent schemes and are keeping track of schemers. Junk e-mail can be sent for review to the FTC's e-mailbox: uce@ftc.gov.

HOMOCYSTEINE AND B VITAMINS

A recent study that followed 80,000 women for 14 years found that the incidence of heart attacks was lowest among those who used multivitamins or had the highest intake of folic acid and B₆ from dietary sources (*JAMA* 279:359-364, 1998). These data parallel the finding that elevated homocysteine levels are associated with a higher incidence of heart disease. The researchers measured folic acid

blood levels but did not measure homocysteine or B₁₂ levels. Rather, they assumed that low folic acid levels were caused by inadequate dietary intake. Victor Herbert, MD, a leading expert on B₁₂ metabolism, has pointed out that the low folic acid levels among the experimental subjects could have been caused by decreased B₁₂ absorption related to getting older. Because folate can prevent the early signs of B₁₂ deficiency while neurological damage takes place, Herbert has petitioned the FDA to order the addition of vitamin B₁₂ to any folate fortification or supplement (*American Journal of Clinical Nutrition* 65:572-573, 1997).

NEW MILK LABELING

The labels of fat-reduced milk products are now required to follow the same requirements as those of other reduced-fat products. As of January 1, 1998, 2% milk must be called "reduced fat" or "less fat" rather than "low fat"; 1% milk can be called "low fat" or "little fat"; and skim can

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retain its name or be called "fat-free," "zero-fat," or "no-fat" milk. In all cases, the nutrients provided (other than fat) must be at least equal to those in full-fat milk before fortification with vitamins A and D.

DONSBACH FACES PRISON

On November 24, Kurt W. Donsbach, D.C., was sentenced to a year in federal prison by a federal judge in San Diego. Last year Donsbach pled guilty to smuggling unapproved drugs into the U.S. and not paying income tax on the money he made from selling them. In a plea bargain with the U.S. attorney's office, he forfeited about \$165,000 and paid an additional \$150,000 in back taxes. Donsbach is scheduled to report to prison on April 27, 1998, but his attorney has said that sentence may be modified after Donsbach testifies in a trial scheduled for this year in Texas. In recent years, Donsbach has administered a Mexican clinic that offers dubious treatments for cancer and other serious diseases. Before that, he operated several supplement companies and a nonaccredited correspondence school that issued hundreds of dubious nutrition "degrees."

WEB SITE RATING SYSTEMS QUESTIONED

Two Canadian researchers examined 47 systems used to rate Web sites providing health information on the Internet and found that only 14 of these described their rating criteria, only 5 provided instructions for their use, and none provided information on whether they had been validated. The researchers concluded: "Many incompletely developed instruments to evaluate health information exist on the Internet. It is unclear, however, whether they should exist in the first place, whether they measure what they claim to measure, or whether they lead to more good than harm" (*JAMA* 279:611-614, 1998).

OFFBEAT LITERATURE AVAILABLE

Quackwatch has more than 200 surplus copies of health-food magazines, chiropractic journals, vitamin catalogues, and other sources of misinformation. Send \$10 for 10 assorted items or \$15 for 20

assorted items to Quackwatch, PO Box 1747, Allentown, PA 18105. If you prefer one or more of the above categories, indicate that with your order. Otherwise, a varied mixture will be provided. (Satisfaction not guaranteed.)

ALCOHOL IN GINSENG PRODUCTS

The Treasury Department's Bureau of Alcohol, Tobacco and Firearms is warning consumers that ginseng products sold at health-food and convenience stores may contain up to 34 percent alcohol. Of 55 different products tested by the agency, only seven contained no alcohol. Some products were as much as one-third alcohol. Ginseng is a bittersweet root that is purported to cure the common cold and failing memory, among other things. The BATF has asked the U. S. Customs Service to detain ginseng products determined to be alcoholic beverages and is also working to recall the products.

NEW RULES ON WEIGHT LOSS IN ATHLETES

Following the deaths of three college wrestlers last year, the National Collegiate Athletic Association (NCAA) has made changes in its rules that deal with how athletes "make weight." Effective January 13, the new rules prohibit the use of diuretics, rubber suits, and saunas as means of achieving the proper weight. In addition, a seven-pound weight allowance was added in each weight class. The NCAA Wrestling Committee and Committee on Competitive Safeguards and Medical Aspects of Sports will further examine the issue of changing weight-loss behavior in wrestling and consider more rule changes at the Wrestling Committee meeting scheduled for April.

AGENCIES ENCOURAGE CALCIUM INTAKE

The Department of Health and Human Services (DHHS) and the NIH National Institute of Child Health and Human Development have both implemented a campaign to increase calcium consumption. The DHHS program is entitled "Crash Course on Calcium" while the NIH campaign is called "Milk Matters." Both target young people and emphasize the importance of calcium for strong bone building

and a healthy body. The DHHS program has an Internet site (<http://www.whymilk.com>), and a brochure outlining the NIH program is available at <http://www.nih.gov/nichd>.

NEW BLOOD PRESSURE GUIDELINES

The National Heart, Lung, and Blood Institute of NIH has released new guidelines for the treatment of high blood pressure. The guidelines contain new treatment strategies and specific recommendations for drug use in the treatment of hypertension. The major emphasis is on lifestyle changes, including dietary modifications. The report encourages increasing fruit and vegetable consumption, using low-fat dairy foods, reducing saturated and total fat intake, reducing sodium intake, and maintaining adequate potassium. Weight loss is recommended in addition to limiting alcohol intake and increasing physical activity. Copies of the new guidelines are available at <http://www.nhlbi.nih.gov/nhlbi.htm>.

PSYLLIUM CLAIMS APPROVED BY FDA

The FDA has ruled that certain foods containing soluble fiber from psyllium seed husk (PSH) can claim that they may reduce the risk of coronary heart disease (CHD) when combined with a diet low in saturated fat and cholesterol. This action is an amendment to the FDA regulation published last year which allowed a health claim on the association between soluble fiber from whole oats and a reduced risk of CHD. The FDA evaluated placebo-controlled studies that tested the intake of 10.2 grams of PSH (about 7 grams of soluble fiber) per day as part of a low-saturated-fat and low-cholesterol diet on total- and LDL-cholesterol levels. The studies showed that PSH consistently lowered these levels. Foods that carry this claim must provide at least 1.7 grams of soluble fiber from PSH per serving. In addition, some foods carrying the PSH health claim will be required to have a statement on the label advising consumers to consume adequate amounts of liquid since certain foods containing PSH may be difficult to swallow. This new health claim is in response to a petition that was submitted by the Kellogg Company. **NF**

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supplementation increases the bioavailability of creatine phosphate in the skeletal muscle cells. This increase is believed to enhance muscle performance by allowing faster resynthesis of ATP to provide energy for brief, high-intensity activities, and by buffering the intracellular hydrogen ions that are associated with lactate production and muscle fatigue. So it's thought that creatine's ergogenic effect may be to increase the force of muscular contraction and prolong anaerobic exercise.

Studies also show that creatine supplementation may lead to an increase in body mass. The reported increase has ranged from 0.8 to 1.8 kg, with some reports of a 3-kg gain. It is unclear whether the weight gain is due to increased muscle mass or water retention.

Though the amount of creatine phosphate in muscle may be increased significantly with supplementation, there are factors that seem to affect the absorption of creatine ingested as a supplement. One such factor is the presupplementation level of the individual. Athletes with low to normal creatine levels, such as vegetarians, show a greater increase in creatine stores after supplementation, and they are more likely to benefit. Some research suggests that there may be an upper limit of creatine storage in human muscle. If this is correct, supplementation will be beneficial only to those whose creatine levels are below the maximum storage level.

Dietary factors may also influence the absorption of creatine. Some studies have suggested that caffeine consumption may decrease the benefits of creatine supplementation. Other studies show that creatine stores were increased significantly when creatine ingestion was followed by carbohydrate consumption since the uptake of creatine by the muscles is believed to be enhanced in the presence of insulin.

Research indicates that 20 to 25 grams of creatine per day increases the creatine content in muscle by 20% to 30%. So proponents of supplementation say that the dosage required to increase creatine stores to their maximum level is about 20 grams per day for 5 to 6 days (dividing the dose into 4 doses of 5 grams). After this "loading phase" of supplementation, 3 to 5 grams per day is supposed to be the maintenance dose.

Many athletes believe that "if a little is good, more must be better," and they take more than the maintenance dose of creatine. But no one really knows what such large doses will do in the body. Some health professionals worry that these doses may lead to dehydration or that very high doses may not be excreted by the kidneys. In any case, since there seems to be a saturation limit for creatine in the muscles, oversupplementation is pointless.

No Across-the-Board Help

Research suggests that only athletes who participate in activities that are intermittent or whose sport requires a large body mass may benefit from creatine supplementation. Such activities include powerlifting, bodybuilding, football, and track-and-field events such as shot-put and javelin.

Despite claims to the contrary, there is no evidence that creatine supplementation can enhance endurance-exercise performance, such as long-distance running or swimming. In fact, the weight gain associated with supplementation may actually have an adverse effect on such endurance activities.

The International Olympic Committee does not include creatine on its list of banned substances. Because creatine is a dietary component, it would be difficult to determine who might be taking creatine supplements and who might be eating large amounts of meat.

Is It Safe?

Athletes taking creatine have reported muscle cramps, pulls, and tears, as well as stomach distress. Far more worrisome is the uncertainty of how much is too much. Some health professionals are concerned that consuming more than 30 grams per month could lead to fat accumulation in the liver.

In addition, all of the studies that have been done to date have looked at creatine use for a short period of time, generally about a month. No one knows the effects of long-term creatine supplementation. The NCAA is currently reviewing proposals for research on the short- and long-term effects of creatine supplementation.

The research to date has been performed primarily on college-age, athletic males, and the results may not apply to

teenagers, women, older adults, or individuals with varying levels of fitness. Creatine supplementation should especially be discouraged among teenage athletes since supplementation has not been studied in this population, and its effect on growth and development are completely unknown. The NCAA has urged that all athletes view with extreme caution the prospect of taking creatine.

Currently, the Centers for Disease Control and Prevention and the Food and Drug Administration are investigating whether the deaths of three college wrestlers last year may have been related to the use of dietary supplements. At least one of the wrestlers was known to be using creatine.

As with many other alleged ergogenic aids, creatine seems so promising to so many—but the promise rests on a pile of unknowns, which in turn may hide dangers that no coach, athlete, or parent should ever accept. **NF**

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Scaring the Scared

Manfred Kroger

How I Conquered Cancer: A Naturopathic Alternative by Eric Gardiner (Houston, TX: Emerald Ink Publishing, 1997), 118 pp., \$9.95 (paperback).

This book's back cover advises, "If you have prostate cancer, or if you are an American male 30 years old or older, you must read this book. An entire industry out there wants to take out your prostate. You don't have to play their game. Keep your prostate, your bladder control, your dignity. The other game in town is called Naturopathic Medicine and you owe it to yourself to find out about it." This argument sounds suspiciously like those we sometimes hear from well-meaning friends: "Yes, you could have your damaged car repaired by an established dealership garage, but instead why not take it to an alley shop owned by a friend's friend who is said to have put a few clunkers back on the road?" Actually, this book seems just as anecdotal—and about as reliable—as most thirdhand car-repair advice.

It's another book by an aging male who for a lifetime has recklessly abused his body and health, is suddenly confronted with the "big C," sets out to hastily live the rest of his life as he should have all along, and then wittily and with an upbeat voice touchingly instructs the rest of the world with his newfound insights.

When diagnosed with prostate cancer, Mr. Gardiner began seeing the medical establishment as "the enemy." He also in-

dicted others as contributors to his condition and to human misery in general—namely, the pharmaceutical and food-processing industries, conventional agriculture, and all air, water, soil, and food pollutants. On his enemies list are all these things he believes are linked to cancer: meat, metal in your mouth, aluminum in your kitchen, "poisonous" consumer products, parasites in your intestine, unfiltered air and water, "nonorganic" food, alcohol, tobacco, stress, and lack of exercise.

There is some good common sense here and some good advice from the "orthodox" literature. But when this information is diluted with the mishmash of sometimes conflicting naturopathic pronouncements, a thoughtful reader must conclude that this book is uneven and studded with sheer drivel. The author's naturopathy is a dangerous disregard for medical science, a blind trust in unproven remedies and questionable practices, and a declaration of war against the scientific method and most of what is praised as achievements in science and technology.

Worst of all are the recommendations for hopelessly scared cancer victims to use numerous regimens, products, and devices that have generally not been shown in tests to be safe and effective. Almost as bad are the many rigid, irrational do's and don't's.

We need sensible, sane, and truly helpful books for those confronted with the threat of cancer. This volume is not one of them.

NOT RECOMMENDED

Herbal Moods

Varro E. Tyler

St. John's Wort: The Mood Enhancing Herb by Christopher Hobbs (Loveland, CO: Botanica Press, 1997), 176 pp., \$12.95 (paperback).

St. John's wort (hypericum) is a popular herb with antidepressant properties. A reliable book offering the latest scientific information on this botanical is much needed. But, although this volume presents much of the latest findings on the herb in a useful fashion, it also contains some extraneous information and opinions that may be confusing to the lay reader.

About one-third of the book (chapters

2 and 3) is devoted to a discussion of the symptoms of depression and related syndromes and their treatment by various drug and nondrug regimens. This is useful background; the trouble comes in discussions of the herb itself.

In the remaining Chapters (1 and 4) devoted to the herb, the author repeatedly discusses its potential for inhibiting monoamine oxidase (MAO), even providing on page 37 a table of tyramine-rich foods and beverages to be avoided while consuming it. Yet, a few pages later (p. 39), it is correctly noted that the MAO activity of St. John's wort is insignificant even in large doses.

The likelihood of developing photosensitivity after consuming the herb is mentioned several times throughout the book, including the table on page 148. However, no such case has been reported in the medical literature in a patient consuming normal therapeutic doses of hypericum.

Hobbs's well-known antipathy toward standardization of phytochemicals is displayed once again on pages 22–23. Instead of the "mass-produced" standardized extracts, he recommends the use of handmade tinctures, the quality of which, in his opinion, can easily be determined. "Simply check the color and taste." But pharmacists know that the color and taste of a liquid preparation do not necessarily indicate the quantity of active principles present. They are also aware that most active principles are organic compounds which are almost always far less stable in solution than in a dry state. In spite of these drawbacks, the author provides on pages 27–28 detailed instructions for preparing a homemade tincture for internal consumption from the plant. Such preparations may be satisfactory, but the preparers will never know for certain unless they follow the author's example and send a sample to an analytical laboratory for a high-performance liquid chromatographic (HPLC) analysis. Obviously, the author did not depend just on color and taste to determine the quality of his preparation.

Nevertheless, if read selectively and critically, the volume can provide much useful information on one of the most popular herbs of this decade. **NF**

RECOMMENDED WITH RESERVATIONS

HERBAL CRITIQUES

The U.S. Pharmacopeia has criticized the use of comfrey, valerian, and ginger. Its expert advisory panel has concluded that comfrey is carcinogenic and can cause liver damage; that there is insufficient evidence that valerian is useful for the short-term treatment of insomnia; and that there is insufficient evidence that ginger can prevent nausea and vomiting. However, the panel recommended that valerian and ginger be studied further. Patient education leaflets on these topics can be viewed on the USP Web site <http://www.usp.org/did/mgraphs/botanica>. Full monographs are \$25 per topic from USP's Document Disclosure Dept., 12601 Twinbrook Parkway, Rockville, MD 20852.

FORMER PHYSICIAN INDICTED

Donald L. MacNay, formerly an orthopedic surgeon in Manassas, Virginia, has been indicted for allegedly defrauding cancer patients he treated intravenously with an unapproved aloe vera drug. MacNay's medical license was revoked in February 1998 by the Virginia Board of Medicine, which cited fraud, unprofessional conduct, and gross malpractice. Four patients he treated last year died shortly after receiving his aloe therapy. MacNay is also charged with improperly supplying narcotic drugs to an assistant.

ST. JOHN'S WORT DOSAGE PROBLEMATIC

A Good Housekeeping Institute analysis of six widely available St. John's wort supplement capsules and four liquid extracts revealed a lack of consistency of the suspected active ingredients, hypericin and pseudohypericin. The study found: (a) a 17-fold difference between the capsules containing the smallest amount of hypericin and those containing the largest amount, based on manufacturer's maximum recommended dosage, (b) a 13-fold difference in pseudohypericin in the capsules, and (c) a 7-to-8-fold differential from the highest to the lowest levels of liquid extracts.

[continued on page 23]

Homeopathy

Much ado about little or nothing

by Stephen Barrett, MD

Homeopathic "remedies" enjoy a unique status in the health marketplace: They are the only category of quack products legally marketable as drugs. This situation exists for two reasons. First, the 1938 Federal Food, Drug, and Cosmetic Act, which was shepherded through Congress by a homeopathic physician who was a senator, recognizes as drugs all substances included in the *Homeopathic Pharmacopeia of the United States*. Second, the FDA has not held homeopathic products to the same standards as other drugs.

Basic Misbeliefs

Homeopathy dates back to the late 1700s when Samuel Hahnemann (1755-1843), a German physician, began formulating its basic principles. Hahnemann was justifiably distressed about bloodletting, leeching, purging, and other medical procedures of his day that did far more harm than good. Thinking that these treatments were intended to "balance the body's 'humors' by opposite effects," he developed his "law of similars"—a notion that symptoms of disease can be cured by extremely small amounts of substances that produce similar symptoms in healthy people when administered in large amounts. The word "homeopathy" is derived from the Greek words *homoios*

(similar) and *pathos* (suffering or disease).

Hahnemann and his early followers conducted "provings" in which they administered herbs, minerals, and other substances to healthy people, including themselves, and kept detailed records of what they observed. Later these records were compiled into lengthy reference

books called *materia medica*, which were and still are used to match a patient's symptoms with a "corresponding" drug.

Hahnemann declared that diseases represent a disturbance in the body's ability to heal itself and that only a small stimulus is needed to begin the healing process. He also claimed that chronic diseases were manifestations of a suppressed itch (psora), a kind of miasma or evil spirit.

At first he used small doses of accepted medications. But later he used enormous dilutions and theorized that the smaller the dose, the more powerful the effect—a notion often referred to as the "law of infinitesimals." That, of course, is just the opposite of the dose-response relationship that pharmacologists have demonstrated.

The basis for inclusion in the *Homeopathic Pharmacopeia* is not modern scientific testing, but homeopathic "provings," many of which took place during the 1800s and early 1900s. These provings had little consistency because meth-

The basis for inclusion in the Homeopathic Pharmacopeia is not modern scientific testing.

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ods varied greatly from practitioner to practitioner. Some used a single dose; others dosed as often as three times a day for months; and potencies ranged from the undiluted original substance to dilutions so high that not one molecule of the original substance was likely to remain. The book's current (ninth) edition describes how more than a thousand substances are prepared for homeopathic use. It does not identify the symptoms or diseases for which homeopathic products should be used; that is decided by the practitioner (or manufacturer). The fact that substances listed in the *Homeopathic Pharmacopeia* are legally recognized as "drugs" does not mean that either the law or the FDA recognizes them as effective.

Because homeopathic remedies were actually less dangerous than those of nineteenth-century medical orthodoxy, many medical practitioners began using them. At the turn of the twentieth century, homeopathy had about 14,000 practitioners and 22 schools in the United States. But as medical science and medical education advanced, homeopathy declined sharply in America, where its schools either closed or converted to modern methods. The last pure homeopathic school in this country closed during the 1920s.

Many homeopaths maintain that certain people have a special affinity to a particular remedy (their "constitutional remedy") and will respond to it for a variety of ailments. Such remedies can be prescribed according to the person's "constitutional type"—named after the corresponding remedy in a manner resembling astrologic typing. The "Ignatia Type," for example, is said to be nervous and often tearful, and to dislike tobacco smoke. The typical "Pulsatilla" is a young woman, with blonde or light-brown hair, blue eyes, and a delicate complexion, who is gentle, fearful, romantic, emotional, and friendly but shy. The "Nux Vomica Type" is said to be aggressive, bellicose, ambitious, and hyperactive.

The "Sulfur Type" likes to be independent. And so on.

The 'Remedies' Are Placebos

Homeopathic products are made from minerals, botanical substances, and several other sources. If the original substance is soluble, one part is diluted with either nine or ninety-nine parts of distilled water and/or alcohol and shaken vigorously (succussed); if insoluble, it is finely ground and pulverized in similar proportions with powdered lactose (milk sugar). One part of the diluted medicine is then further diluted, and the process is repeated until the desired concentration is reached. Dilutions of 1 to 10 are designated by the Roman numeral X (1X = 1/10, 3X = 1/1,000, 6X = 1/1,000,000). Similarly, dilutions of 1 to 100 are designated by the Roman numeral C (1C = 1/100, 3C = 1/1,000,000, and so on). Most remedies today range from 6X to 30X, but products of 30C or more are marketed.

A 30X dilution means that the original substance has been diluted 10³⁰ times. Assuming that a cubic centimeter of water contains 15 drops, this number is greater than the number of drops of water that would fill a container more than 50 times the size of the Earth. Imagine placing a drop of red dye into such a container so that it disperses evenly. Homeopathy's "law of infinitesimals" is the equivalent of saying that any drop of water subsequently removed from that container will possess an essence of redness. Robert L. Park, PhD, a prominent physicist who is executive director of the American Physical Society, has noted that since the least amount of a substance in a solution is one molecule, a 30C solution would have to have at least one molecule of the original substance dissolved in a minimum of 100³⁰ molecules of water. This would require a container more than 30 billion times the size of the Earth.

The fact that homeopathic products are legally recognized as "drugs" does not mean that the FDA recognizes them as effective.

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Can Nutrition Cure ADHD?

The facts about diets and dietary supplements

by Beth Fontenot, MS, RD

Few medical conditions lend themselves to more unproven claims, distortions of the truth, and controversial therapies than does Attention-Deficit/Hyperactivity Disorder (ADHD). Numerous dietary interventions and nutritional supplements have been claimed to ease or cure ADHD. Unfortunately, the promise of a quick solution or a cure that doesn't involve the use of drugs is often irresistible for vulnerable, well-meaning parents, even if that "solution" has no scientific basis or is outright quackery.

The American Psychiatric Association's *Diagnostic and Statistics Manual (DSM-IV)* lists three categories of ADHD: (1) predominantly inattentive type, (2) predominantly hyperactive-impulsive type, and (3) combined type. Specific criteria must be met for the diagnosis of each type. In most cases, the cause of the condition is unknown, but it is believed that ADHD may be the result of organic, genetic, and psychosocial factors.

Standard therapy for ADHD involves the use of stimulant medications such as Ritalin or Dexedrine, behavioral management, and/or special education. Various "natural" treatments have also been proposed, including defined diets, elimination diets, dietary supplements, megavitamin therapy, and herbal therapy.

Salicylates and Sugar

Benjamin Feingold, MD, was the first person to implicate diet as the primary cause of hyperactivity and advocate the use of a defined diet. The Feingold Diet, popularized in the 1970s, was based on the idea that hyperactivity in children was caused by salicylates (found naturally in some fruits and vegetables) and artificial colorings and flavorings in the food supply. The diet required that all of these substances be removed from a child's diet. Dr. Feingold estimated that 50% of his hyperactive patients responded favorably to this diet.

But there was a problem with Dr. Feingold's research. It was based on un-

controlled trials of children he had treated. Controlled double-blind challenge studies have not supported Dr. Feingold's claims. In addition, his diet is very difficult to follow since many foods that a child typically eats contain some type of additive, though the diet itself is not harmful. Nevertheless, many families follow the diet, and Feingold Associations are still active in some parts of the country.

Another food that has been implicated as a cause of ADHD in most children is sugar. However, there is no good evidence to support this claim. A meta-analysis in the *Journal of the American Medical Association (JAMA)*: 1617-1621, November 22-29, 1995) examined 16 articles reporting on 23 separate studies on the relationship between sugar and the behavior and cognition of children. The authors found that sugar did not affect the behavior or cognitive performance of children.

Many parents firmly believe that an excess of sugary foods causes hyperactivity or inattentive behavior in their children. In fact, avoiding sugar is one of the more popular pieces of advice that parents with ADHD children receive. Questions remain as to why the results of controlled studies differ from the impression of parents. It may be that popular folklore or publicity proposing a link between sugar and behavior may encourage parents to expect adverse behavior and selectively focus on it. In addition, high-sugar foods are commonly consumed at parties and gatherings where children tend to get excited, and parents may connect the intake of sugar with "hyperactive" behavior.

Dubious Products

A search on the Internet for nutritional treatments for ADHD uncovers numerous supplements claimed to relieve the symptoms of ADHD, improve a child's attentiveness, or control a child's behavior. These products cover the supplement

[continued on page 22]

Nutrition Forum rates the factual accuracy and usefulness of Internet sites containing nutrition and health information. This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web.

BEST

The *Journal of the American Medical Association (JAMA)* has begun publishing a "Patient Page" that interprets information from one or more of the original research articles running in each issue. The material will also identify Web sites and toll-free numbers for obtaining additional information. Starting with the April 22-29 edition, the page will be published at the back of each issue and on the AMA's Web site <http://www.ama-assn.org/consumer.htm>. Although pages are copyrighted, JAMA and the AMA are encouraging physicians to photocopy and distribute them for educational purposes.

At <http://cpmnet.columbia.edu/texts/gcps/>, Columbia University offers the U.S. Preventive Services Task Force's landmark 1996 report on the scientific basis and cost-effectiveness of dietary counseling and other interventions for more than 80 potentially preventable diseases and conditions.

WORST

A Pennsylvania chiropractor operates Vitamin Counsel, <http://www.vitamincounsel.com>, which offers a "customized nutrition program" based on the company's interpretation of a urinalysis and other data. The initial cost is about \$100 for a urine test kit, a questionnaire, and a month's supply of an "intestinal cleanser." The test procedure is alleged to reveal whether you are giving your body the right nutrients in the right amounts and whether the nutrients are being properly absorbed or you are "just making expensive urine." The "custom supplements" cost \$44.75 per month.

Homeotreat (<http://www.homeotreat.com>), operated by a Czech chiropractor, offers online consultation based on current symptoms, medical history, and 128 homeopathy-related questions. The proprietor claims that homeopathy has cured or relieved more than a hundred diseases and conditions and also offers long-term preventive benefits. The costs for his services are \$55 for the initial consultation, \$35 for follow-up consultations, and \$9 for the prescribed "remedy."

Occilococcinum, a 200C product “for the relief of colds and flu-like symptoms,” involves “dilutions” that are even more far-fetched. Its “active ingredient” is prepared by incubating small amounts of a freshly killed duck’s liver and heart for 40 days. The resultant solution is then filtered, freeze-dried, rehydrated, repeatedly diluted, and impregnated into sugar granules. If a single molecule of the duck’s heart or liver were to survive the dilution, its concentration would be 1 in 100^{200} . This huge number, which has 400 zeroes, is vastly greater than the estimated number of molecules in the universe (about one googol, which is a 1 followed by 100 zeroes). *U.S. News & World Report* has noted that only one duck per year is needed to manufacture the product, which had total sales of \$20 million in 1996. The magazine dubbed that unlucky bird “the \$20-million duck.”

Actually, the laws of chemistry state that there is a limit to the dilution that can be made without losing the original substance altogether. This limit, called Avogadro’s number, corresponds to homeopathic potencies of 12C or 24X (1 part in 10^{24}). Hahnemann himself realized that there is virtually no chance that even one molecule of original substance would remain after extreme dilutions. But he believed that the vigorous shaking or pulverizing with each step of dilution leaves behind a “spirit-like” essence—“no longer perceptible to the senses”—which cures by reviving the body’s “vital force.” This notion is unsubstantiated. Moreover, if it were true, every substance encountered by a molecule of water might imprint an “essence” that could exert powerful (and unpredictable) medicinal effects when ingested by a person. Dr. Park has noted that to expect to get even one molecule of the “medicinal” substance allegedly present in 30X pills, it would be necessary to take some two billion of them, which would total about a thousand tons of lactose plus whatever impurities the lactose contained.

Many proponents claim that homeo-

pathic products resemble vaccines because both provide a small stimulus that triggers an immune response. This comparison is not valid. The amounts of active ingredients in vaccines are much greater and can be measured. Moreover, immunizations produce antibodies whose concentration in the blood can be measured, but high-dilution homeopathic products produce no measurable response.

‘Electrodiagnosis’

Some physicians, dentists, and chiropractors use “electrodiagnostic” devices to help select the homeopathic remedies they prescribe. These practitioners claim they can determine the cause of any disease by detecting the “energy imbalance” causing the problem. Some also claim that the devices can detect whether someone is allergic or sensitive to foods, vitamins, and/or other substances.



No homeopathic product has been proven effective for any therapeutic purpose.

The procedure, called electroacupuncture according to Voll (EAV), electrodiagnosis, or electrodermal screening, was begun during the 1970s by Reinhold Voll, MD, a West German physician who developed the original device. Subsequent models include the Dermatron, Vegatest, Interro, and Omega AcuBase.

Proponents claim that these devices measure disturbances in the flow of “electro-magnetic energy” along the body’s “acupuncture meridians.” Actually, they are fancy galvanometers that measure electrical resistance of the patient’s skin when touched by a probe. Each device contains a low-voltage source. One wire from the device goes to a brass cylinder covered by moist gauze, which the patient holds in one hand. A second wire is connected to a probe, which the operator touches to “acupuncture points” on the patient’s foot or other hand. This completes a circuit, and the device registers the flow of current. The information is then relayed to a gauge that provides a numerical readout. The size of the number depends on how hard the probe is pressed against the patient’s skin. Recent versions, such as the Interro, make

sounds and provide the readout on a computer screen. The treatment selected depends on the scope of the practitioner’s practice and may include acupuncture, dietary change, and/or vitamin supplements, as well as homeopathic products. Regulatory agencies have seized several types of “electrodiagnostic” devices but have not made a systematic effort to drive them from the marketplace.

Unimpressive ‘Research’

Since many homeopathic remedies contain no detectable amount of active ingredient, it is impossible to test whether they contain what their label says. Unlike most potent drugs, they have not been proven effective against disease by double-blind clinical testing. In fact, the vast majority of homeopathic products have never even been tested.

Homeopathy’s favorite article is probably a 1994 report claiming that homeopathic treatment had been demonstrated to be effective against mild cases of diarrhea among Nicaraguan children (*Pediatrics* 93:719–725, 1994). The claim was based on findings that, on certain days, the “treated” group had fewer loose stools than the placebo group. However, the data were not properly interpreted. In a rebuttal article, Wallace Sampson, MD, and William London, EdD, noted that the data were oddly grouped and contained errors and inconsistencies (*Pediatrics* 96:961–964, 1995).

In December 1996, a lengthy report was published by the Homeopathic Medicines Research Group (HMRG), an expert panel convened by the Commission of the European Communities. The HMRG included homeopathic physician-researchers and experts in clinical research, clinical pharmacology, biostatistics, and clinical epidemiology. Its aim was to evaluate published and unpublished reports of controlled trials of homeopathic treatment. After examining 184 reports, the panelists concluded: (1) only 17 were designed and reported well enough to be worth considering; (2) in some of these trials, homeopathic approaches may have exerted a greater effect than a placebo or no treatment; and (3) the number of participants in these 17 trials was too small to draw any conclusions about the effectiveness of homeopathic treatment for any specific

condition. Simply put: Most homeopathic research is worthless, and no homeopathic product has been proven effective for any therapeutic purpose. The National Council Against Health Fraud has warned that “the sectarian nature of homeopathy raises serious questions about the trustworthiness of homeopathic researchers.”

Proponents trumpet the few “positive” studies as proof that “homeopathy works.” Even if their results can be consistently reproduced (which seems unlikely), the most that the study of a single remedy for a single disease could prove is that the remedy is effective against that disease. It would not validate homeopathy’s basic theories or prove that homeopathic treatment is useful for other diseases.

Placebo effects can be powerful, of course, but the potential benefit of relieving symptoms with placebos should be weighed against the harm that can result from relying upon—and wasting money on—ineffective products. Spontaneous remission is also a factor in homeopathy’s popularity. I believe that most people who credit a homeopathic product for their recovery would have fared equally well without it.

Homeopathic practitioners claim to

provide care that is safer, gentler, more “natural,” and less expensive than conventional care—and more concerned with prevention. The fact is, however, that homeopathic treatments prevent nothing and many homeopathic leaders preach against immunization. Equally bad, a report on the National Center for Homeopathy’s 1997 Conference described how a homeopathic physician had suggested using homeopathic products to help prevent and treat coronary artery disease. According to the article, the speaker recommended various 30C and 200C products as alternatives to aspirin or cholesterol-lowering drugs (*Homeopathy Today* 17(8):3, 1997).

Greater Regulation Is Needed

If the FDA required homeopathic remedies to be proven effective in order to remain marketable—the standard it applies to other categories of drugs—homeopathy would face extinction in the United States. However, there is no indication that the agency is considering this. FDA officials regard homeopathy as relatively benign (compared, for example, to unsubstantiated products marketed for cancer and

AIDS) and believe that other problems should get enforcement priority. FDA guidelines issued in 1988 permit manufacturers to sell nonprescription homeopathics for “self-limiting conditions recognizable by consumers,” provided that their labeling “adequately instructs consumers in the product’s safe use.” But if a product doesn’t work, the only truly adequate instruction for use is to avoid it.

In August 1994, 42 critics of quackery and pseudoscience petitioned the FDA to initiate a rulemaking procedure to require that all over-the-counter (OTC) homeopathic drugs meet the same standards of safety and effectiveness as non-homeopathic OTC drugs. The petition also asked the FDA to warn the public that although the agency has permitted homeopathic products to be sold, it does not recognize them as effective. The FDA has not yet ruled on the petition. On March 3, 1998, at a symposium sponsored by *Good Housekeeping* magazine, former FDA Commissioner David A. Kessler, MD, JD, acknowledged that homeopathic products do not work but that he did not attempt to ban them because he felt that Congress would not support a ban.

The Federal Trade Commission could take effective action against homeopathic manufacturers that make false claims in their ads. Since no homeopathic product now advertised has been proven effective, and since few if any have even been reliably tested, it is hard to imagine how therapeutic claims for them could stand up in court. However, the FTC has shown no inclination to regulate homeopathic advertising.

If the FDA and FTC attack homeopathy too vigorously, its proponents might even persuade a lobby-susceptible Congress to rescue them. Regardless of this risk, federal agencies should not permit worthless products to be marketed with claims that they are effective. Nor should they continue to tolerate the presence of quack “electrodiagnostic” devices in the marketplace. **NF**

Dr. Barrett, a retired psychiatrist, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud. His 44 books include The Health Robbers: A Close Look at Quackery in America (Prometheus, 1993).

Dubious Marketing

America’s most blatant homeopathic marketer appears to be Biological Homeopathic Industries (BHI) of Albuquerque, New Mexico, which, in 1983, sent a 123-page catalog to 200,000 physicians nationwide. Its products included BHI Anti-cancer Stimulating, BHI Antivirus, BHI Stroke, and 50 other types of tablets claimed to be effective against serious diseases.

In 1984, the FDA forced BHI to stop distributing several of the products and to tone down its claims for others. However, BHI has continued to make illegal claims. Its 1991 Physicians’ Reference (“for use only by health care professionals”) inappropriately recommended products for heart failure, syphilis, kidney failure, blurred vision, and many other serious conditions. The company’s publishing arm issues the quarterly *Biological Therapy: Journal of Natural Medicine*, which regularly contains articles whose authors make questionable claims. An article in the April 1992 issue, for example, listed “indications” for using BHI and Heel products (distributed by BHI) for more than 50 conditions—including cancer, angina pectoris, and paralysis. And the October 1993 issue, devoted to the homeopathic treatment of children, includes an article recommending products for acute bacterial infections of the ear and tonsils. The article is described as selections from Heel seminars given in several cities by a Nevada homeopath who also served as medical editor of *Biological Therapy*. In 1993, Heel published a 503-page hardcover book describing how to use its products to treat about 450 conditions. Twelve pages of the book cover “Neoplasia and neoplastic phases of disease.” (“Neoplasm” is a medical term for tumor.) In March 1998, during an osteopathic convention in Las Vegas, Nevada, a Heel exhibitor distributed copies of the book when asked for detailed information on how to use Heel products.

spectrum: antioxidants, amino acids, herbs, vitamins, minerals, and an array of other dietary supplements, some with questionable ingredients.

One such product that is highly promoted for the treatment of ADHD is "Pyc-nogenol," a commercial mixture of bioflavonoids that appears to exhibit antioxidative activity in animal studies. Bioflavonoids are naturally available from vegetables, and are found in the white matter inside the peel of citrus fruits. The impact of large amounts of bioflavonoids on the human body is unknown, as is their usefulness.

Advertisements for "Pycnogenol" state that it is a patented extract from the bark of the French Maritime Pine Tree, and it is described as "the most potent, natural antioxidant compound ever discovered." According to its promoters, "Pycnogenol" is important to brain function because it protects the brain cells from compounds that circulate in the blood. There is no evidence that Pycnogenol is effective to use, and reports of its beneficial effects on ADHD are strictly anecdotal.

Still another product which claims to be beneficial for children with ADHD is "beCALM'd." This product is sold by Technology Services Team, a multilevel marketing company. It is supposed to increase the production of neurotransmitters which will supposedly allow the brain to function better. The ad on the Internet states that beCALM'd is a patented "precise combination of amino acids, vitamins, and minerals."

The ingredients of beCALM'd include l-glutamine, d-phenylalanine, calcium, magnesium, chromium, folic acid, and vitamins A and B₆. The promoters for this product claim that in order to get enough of the right combination of these nutrients for the brain to function properly, one would need to consume "several pounds of fish, whole milk, cheese, and 2 or 3 pounds of turkey per day." In fact, the nutrient ingredients in beCALM'd are all available in adequate amounts in a balanced diet with normal portion sizes, and there is no known magic combination of nutrients that will make the brain work better.

Vaxa International, a "homeopathic nutraceutical company," has its version of a defined diet for ADHD on the Internet.

The diet requires eliminating many foods including dairy products, all yellow foods (like corn and squash), and fruit juices. The company claims that a high-protein shake for breakfast made with coffee and a protein powder is needed "to feed the brain." The ADHD program also encourages the use of colloidal minerals (see *Nutrition Forum*, September/October, 1997) and one or more of its three supplemental products, depending on which symptoms of ADHD need to be treated.

One of these supplements is "Attend"—claimed to be a "brain fertilizer." It is composed of amino acids, essential fatty acids, lipid complexes, homeopathic medicines, hormone precursors, and precursors to neurotransmitters. Vaxa's "Extress" is a supplement purported to be helpful with temper problems because it contains branched-chain amino acids. There is no scientific evidence that any of these products are effective.

There are also various herbal therapies that are supposed to treat ADHD. Gingko biloba, capsicum, veratrum album, eleuthero (Siberian ginseng), and evening primrose oil are just some of the botanicals that are advertised as beneficial for treating the symptoms of ADHD. But there is no evidence that any herb is beneficial in the treatment of ADHD. Without adequate testing, quality controls, and standardization of the active principles in herbs, parents just can't be sure of what they are purchasing and what they are giving their children.

Megavitamin therapy has also been proposed for the management of ADHD. Megavitamin therapy is defined as using one or more vitamins in doses at least 10 times the recommended dietary allowance. Some studies have reported benefit from megavitamin therapy for the management of ADHD, but these were poorly designed and lacked appropriate controls.

A study published in *Advances in Neurology* (58:303-310, 1992) was designed to determine whether megavitamin therapy could have a positive effect on children with ADHD. Forty-one children participated in the randomized, controlled trial, which monitored physical, behavioral, and biochemical parameters. The study concluded that megavitamin therapy was ineffective in the management of ADHD and posed a danger because of the potential for hepatotoxicity.

Advice from the Experts

The American Academy of Pediatrics has concluded that special diets and supplements do not relieve the symptoms of ADHD and warns that food modification alone should not be used as treatment for ADHD.

A statement from a National Institutes of Health Consensus Conference said that defined diets should not be universally used in the treatment of childhood hyperactivity, and a defined diet should not be initiated until a child and his family have been fully and appropriately evaluated and all traditional therapeutic options considered.

Some of the best advice for parents and professionals on the issue of nutrition and ADHD appeared in an article published in the *Journal of Child Neurology* (10 Suppl 1:S96-100, January 1995). The author says that professionals should be informed about controversial treatments proposed for children with learning disabilities so that they can educate parents on the facts about these treatments. The author also advises parents of children with learning disabilities not to accept controversial treatments without question and not to put their children through unproven treatments that are unlikely to help. **NF**

A Cautionary Note

Because the Feingold Diet does no physical harm, it might appear to be helpful in some instances. However, the potential benefits should be weighed against the potential harm of (1) teaching children that their behavior and school performance are related to what they eat rather than what they feel, (2) undermining their self-esteem by implanting notions that they are unhealthy and fragile, (3) creating situations in which their eating behavior or fear of chemicals are regarded as peculiar by other children, and (4) depriving them of the opportunity to receive appropriate professional help. —Stephen Barrett, MD

Beth Fontenot is a nutrition consultant and freelance nutrition writer in Lake Charles, LA. She serves on the adjunct faculty at McNeese State University in Lake Charles, TX.

[continued from page 17]

DUBIOUS VITAMIN PROMOTION

The Vitamin Shoppe, which operates a discount mail-order business and 30 retail stores, has purchased exclusive rights to advertise on Time Inc. New Media's "Ask Dr. Weil" Web site (www.drweil.com) beginning in April. Users who complete Weil's "Vitamin Advisor" questionnaire will get "personalized" advice and can click on a link to the Vitamin Shoppe's Web site where they can purchase the recommended products. Completion of the questionnaire invariably results in multiple recommendations for vitamin and herbal products. Time executives estimate that Weil's site draws about 1.2 million page views per week, equivalent to several hundred thousand visitors every week. *Advertising Age* reports that the ad rights involved a seven-figure amount.

IMPOTENCE SCAM

A new drug for the treatment of impotence was approved last March by the Food and Drug Administration, but a copycat herbal concoction is being targeted to men. Viagra, the newly approved drug, is marketed by Pfizer Pharmaceuticals and is the first oral medicine for impotence. Ads for Vaegra, "a proprietary blend of pharmaceutical-grade ingredients" according to its flyer, were apparently sent to a large number of older men around the country and touts the same claims as those made for Viagra. The advertisement for Vaegra contains quotations and research citations, but those quoted deny any knowledge of the product. Pfizer has filed suit against Vaegra's distributors, American Urological Clinic, and has been granted a temporary order restraining the clinic from using the look-alike name. Companies that market products with no proven effect often use a name similar to that of a proven drug. At \$89.00 a bottle, Vaegra could be an expensive spelling lesson.

ACSH MAGAZINE SURVEY

The American Council on Science and Health has evaluated the quality of nutri-

tion articles published in popular magazines during 1995 and 1996. The study covered eight randomly selected articles from each of 21 magazines. Four nutrition and food-science experts rated each article for accuracy, style of presentation, and validity of recommendations. *Consumer Reports*, *Better Homes & Gardens*, and *Good Housekeeping* topped the list. The full report can be obtained for \$5 from the American Council on Science and Health, 199 Broadway, 2nd Floor, New York, NY 10023.

VITAMIN ANGEL ALLIANCE

In 1994, Nutritech/ALL ONE PEOPLE, of Belgrade, Maine, joined forces with Direct Relief International to create the Vitamin Angel Alliance to fight blindness and malnutrition in children around the world. Direct Relief annually distributes over \$28 million in medical supplies, pharmaceuticals, and nutritional products to over 70 countries. The alliance intends to promote awareness and raise contributions of vitamin supplements within the natural-foods industry for distribution by Direct Relief. So far, it has collected and distributed more than six million doses.

BREASTFEEDING RIGHTS

Since 1993, at least 14 states and many cities and counties have passed laws protecting the right to breastfeed infants in public. The states include California, Connecticut, Delaware, Florida, Illinois, Michigan, Nevada, New Jersey, New York, North Carolina, Texas, Utah, Virginia, and Wisconsin.

TELEMARKETING/INFOMERCIAL CASE SETTLED

The attorneys general of Arizona, California, Illinois, Massachusetts, New York, Pennsylvania, Vermont, and Wisconsin have announced an Assurance of Voluntary Compliance with Talk America, Inc. (a national telemarketer) and Nature's Pure Body Institute, Inc. (a manufacturer). Both companies had been charged with making unsupported claims for three products during infomercials and telephone sales pitches: (1) Purifast 30 had been alleged to prevent cancer, remove waste from the

body, detoxify the bloodstream, and allow users to live without aches and pains; (2) Daily Harvest Vitamins had been claimed to reduce the risk of degenerative diseases, remove foreign chemicals, relieve constipation, and cause weight loss; and (3) Natural Hair Shampoo had been claimed to reverse baldness and increase hair growth. The agreement requires the companies to pay full refunds to consumers who ordered these products and to pay \$150,000 to the participating states for investigative costs and attorneys fees.

NEW DRI'S

The Institute of Medicine has released a lengthy report on its recommended intakes of B vitamins. The report notes that although most Americans and Canadians get enough vitamin B₁₂ in their food, between 10% and 30% of older adults have lost their ability to adequately absorb the naturally occurring form of B₁₂ found in food. For this reason, the report says, people over 50 should meet most of their recommended intake with synthetic B₁₂ from fortified foods or vitamin supplements. The full report—*Dietary Reference Intakes: Thiamin, Riboflavin, Niacin, Vitamin B₆, Folate, B₁₂, Pantothenic Acid, Biotin, and Choline*—can be purchased by calling (800) 624-6242; sending \$44 to the National Academy Press, 201 Constitution Ave, N.W., Washington, DC 20418; or ordering it at a discount online (<http://www.nap.edu>). The full text can also be read online, although the process is cumbersome.

VITAMIN E IS POPULAR

A nationwide survey conducted by Decision Analysts, Inc., of Arlington, Texas, found that vitamin E is now the second most popular single vitamin supplement after vitamin C. The survey reported that nearly one-third of U. S. adults take vitamin E as a dietary supplement. The survey reported that the use of vitamin E was particularly strong among women, with 25% of women surveyed stating that they take the vitamin. In addition, among adults aged 45 to 54, nearly 36% take it and in the over-age-55 group, 44% take the vitamin. **NF**

Book Reviews

Analysis and Ratings

NF reviews rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to *Nutrition Forum Book Reviews*, P.O. Box 664, Amherst, NY 14226-0664.

Honest Ergogenics

Joseph P. Cannon

The Ergogenics Edge by Melvin Williams, PhD (Champaign, IL: Human Kinetics Publishers, 1998), 316 pp., \$17.95, ISBN 0-88011-545-9 (paperback).

Dr. Melvin Williams, professor of Exercise Science, Physical Education and Recreation at Old Dominion University, is one of the country's foremost authorities on ergogenic substances. Dr. Williams has combined his more than 30 years of research experience into the *Ergogenics Edge*, a book devoted to the subject of sports performance-enhancing substances.

Early chapters of the book cover the basics such as factors that limit sports performance. They offer a very easy-to-understand yet comprehensive overview of energy systems, muscle-fiber types, and their interactions during exercise. Other topics include how sport psychology can help enhance one's exercise performance and how to evaluate the claims made for an ergogenic substance (including the perils of relying on testimonials).

The real beauty of this book is its coverage of over 60 ergogenic substances. These range from various over-the-counter vitamins, minerals, and amino acids to illegal substances such as steroids and cocaine. Few stones are left unturned. Besides the more conspicuous—and dubious—of ergogenic aids, such as chromium picolinate, DHEA, and antioxidants, Dr. Williams also covers more

low-profile aids such as nasal-airway expanders and oxygen supplementation. Very good synopses of relevant literature are included for creatine and beta hydroxy methyl butyrate (HMB), two of the new kids on the block that everyone seems to be talking about these days. Each substance is listed alphabetically for easy access, and each entry includes classification and usage of the compound, an explanation of how it's supposed to work, the effectiveness of the substance, safety issues associated with its use, legal and ethical issues, and recommendations—which basically gives the bottom line on whether or not the substance should be used. All recommendations for (or against) use are made solely on the basis of available scientific literature.

References, for those who wish to pursue matters further, are listed at the back of the book and are organized according to chapter. Most references are very recent, having been published within the past five years, with many others published within the past year.

The *Ergogenics Edge* is a rare find these days: it's unbiased, easy to understand, comprehensive, and up to date.

RECOMMENDED

Herbal Fake

Varro E. Tyler

Essiac: A Native Herbal Cancer Remedy by C. Olsen (Pagosa Springs, CO: Kali Press, 1996), 122 pp., no price given, ISBN 0-9628882-5-7 (paperback).

Most readers, with the possible exception of those who have spent the last decade or so in Antarctica, will be familiar with Essiac, the most visible of America's unproven herbal remedies for cancer. The formula was popularized by Canadian nurse Rene Caisse, who is said to have obtained it indirectly from an Ojibwa medicine man in 1922. Christening the mixture with her own name spelled backwards, nurse Caisse treated cancer patients with it until shortly before her death in 1978. Since then, the product has continued to be widely promoted and used by some alternative health-care practitioners.

This volume details the history of the remedy, provides a number of testimoni-

als regarding its purported efficacy, gives a formula for it as well as its mode of preparation and use, and then throws in a few space fillers, such as an illustrated description of the five Tibetan rites to normalize hormone production in the body. No mention is made of the tests conducted in 1983 by the National Cancer Institute (NCI) that found that Essiac lacked any significant antitumor activity.

Basically, Essiac is a tea consisting principally of burdock root (*Arctium* spp.), with lesser amounts of sheep sorrel (*Rumex acetosella*), slippery elm bark (*Ulmus fulva*), and Turkey rhubarb root (*Rheum scutatus*?). Actually, the book defines Turkey rhubarb as *Rheum palmatum*, a type of Chinese rhubarb often transshipped through Turkish ports. Just how this nonnative laxative herb could have been used in an ancient Ojibwa formula is not explained.

The book repeatedly notes that each of the herbs in Essiac has been used as a food. This assertion apparently confuses the root of rhubarb species containing anthraquinone derivatives that act as laxatives with the petioles of common rhapontic rhubarb that are edible. As for slippery elm bark with its tough lignified fibers, it can scarcely be regarded as a food.

In attempting to explain the presumed beneficial effects of Essiac ingredients, the book notes that sheep sorrel contains alkaloids that may play a part in the cytotoxic activity. Yet in his authoritative work on the distribution of alkaloids, Raffauf has indicated that the species gave negative tests for such compounds.

Another puzzling statement refers to the Essiac formula having been handed over to the Resperin Corporation in 1977 by Rene Caisse who insisted "the formula not be disclosed and is still under lock and key today." That being the case, what assurance is there that the Essiac recipe given in the book is at all authentic?

Aside from anecdotal information—testimonials by users—there is nothing to support the assertion that Essiac is an effective cure for cancer. Persons interested in the history and development of unproven cancer remedies, such as krebiozen, laetrile, and the like, will find this book of interest. **NF**

NOT RECOMMENDED

NEW SUPPLEMENT REGULATIONS

On April 29, the FDA proposed new rules for statements about the effects of dietary supplement products on body structure and function (Federal Register 63:23624-23632, 1998). The rules were drafted to comply with the Dietary Supplement and Health Education Act of 1994, which was intended to weaken the agency's authority. The proposed rules include: (1) Disease claims are not permitted; (2) Disease is defined as "any deviation from, impairment of, or interruption of the normal structure or function of any part, organ, or system (or combination thereof) of the body that is manifested by a characteristic set of one or more signs or symptoms"; (3) "Signs or symptoms" include laboratory or clinical assessments that are characteristic of a disease, such as an elevated cholesterol fraction, uric acid, or blood sugar, and characteristic signs of disease, such as elevated blood pressure; (4) A claim that a product helps protect against a disease (e.g., "reduces the stiffness of arthritis") is a disease claim; (5) A product name that implies an effect on a disease, e.g., "Hepatocure" would constitute a disease claim, but names such as "Cardiohealth" or "Heart Tabs" would not; and (6) suggestions that a product helps fight a specific disease or type of disease by stimulating the body's defenses would be disease claims, but general claims such as "supports the immune system" would not. The full text of the proposed regulations is available online at <http://www.fda.gov> (search for "dietary supplements"). The deadline for public comments is August 27.

COURT THWARTS FDA BAN

The FDA has determined that Cholestin, a product promoted as a dietary supplement intended to affect cholesterol levels, is not a dietary supplement, but is an unapproved drug under the terms of the Federal Food, Drug, and Cosmetics Act. Cholestin contains lovastatin, the active ingredient in Mevacor, a prescription drug used to modify cholesterol levels. The product is manufactured by Phar-

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Nutritional Supplements for Down Syndrome

What happens when hope meets hype

by Len Leshin, MD

Down syndrome is a genetic disorder caused by the presence of a third 21st chromosome. It occurs once in every 600 to 700 births, making it the most common genetic disorder. Its common features include poor muscle tone, short stature, a small nose with flat nasal bridge, small skin folds on the inner corner of the eyes (epicanthal folds), dry skin, immune-system suppression, developmental delays, speech difficulties, and mental retardation.

Even before Down syndrome was found to be caused by a genetic abnormality, nutritional therapies were proposed, usually focusing on one or two items. Mixtures that included vitamins, hormones, and enzymes were advocated in the 1960s by Haboud, a German physician; however, other investigators found no beneficial effect. At about the same time, Henry Turkel, MD, in the United States claimed that a mixture of 48 different ingredients could improve intelligence and the appearance of children with Down syndrome. No double-blind study was ever performed with Turkel's formula. Dr. Turkel administered his formula to children with Down syndrome for almost 40 years; if there had been some benefit, we should have had such evidence by now. Yet no such group of children or adults has been identified to date.

In the 1980s, Ruth Harrell, MD, and

associates reported that supplementary vitamins and minerals and thyroid hormone improved IQ scores and caused "physical changes toward normal" among children with various types of mental deficiency, with the best results in three children with Down syndrome. However, the study was neither controlled nor blinded, and seven different studies during the next decade showed no positive results from Harrell's mixture. Harrell's formula gained notoriety because it was discussed in a scientific journal.

No double-blind study was ever performed with Turkel's formula.

Haps Caps, another mixture of vitamins, minerals, and enzymes that hit the marketplace during the 1980s, is frequently given with thyroid hormone. No study of Haps Caps has been published.

Haps Caps is promoted through traveling clinics run by Jack Warner, MD, of California.

In recent years, two formulas have become even more popular because of TV shows, Internet promotion, and seminars. In 1995, ABC-TV's *Day One* promoted a formula created by Dixie Lawrence Tafoya, owner/operator of an adoption agency that specializes in finding homes for disabled children. Lawrence initially based her formula on Turkel's original mixture but modified it for her own daughter. The TV program described how Lawrence had adopted a girl with Down syndrome and had "tapped into medical databases, scoured libraries, called re-

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search departments, talked to anyone who knew anything about the biochemistry of Down syndrome." The result was a formula based on Turkel's original mixture but containing many more ingredients. Subsequently, the drug piracetam was added to the child's regimen. During the TV program, her daughter's school principal and a special-instruction teacher said the child had improved after taking the formula; whereas a National Down Syndrome Congress official said, "But until . . . it's proven that the position is what made that improvement, we would be irresponsible to tell people to go get that."

By the time *Day One* aired, Lawrence had arranged for her formula to be produced by Nutri-Chem Labs (a Canadian company) and the product was called MSB Plus, which differed considerably from previous formulas aimed at Down syndrome. In 1996, she withdrew her support from Nutri-Chem and began promoting a formula called NuTriVene-D, which is marketed by International Nutrition, Inc., of Baltimore, Maryland. Nutri-Chem still markets MSB Plus. Both formulas have more than 40 ingredients, most of them the same or similar, but with differences in dosage. Various formulas from other companies have not been as popular.

Common Ingredients

Down syndrome formulas contain four main groups of ingredients: vitamins, minerals, amino acids, and antioxidants. Newer additions include digestive enzymes and fat supplements.

Vitamins. Supplementation with both single vitamins and vitamin mixtures has been studied in children with Down syndrome. Although sporadic reports of vitamin deficiencies have been published, most studies reveal none, and many studies have found that vitamin supplementation with either RDA doses or megadoses have no effect on mental ability or behavior. The present supplements tend to use RDA values, although levels of vitamin A

high enough to be toxic are still occasionally promoted.

Minerals. Several studies have shown that zinc and selenium serum levels are decreased among children with Down syndrome. Some studies on zinc report increased growth, improved thyroid and lymphocyte functions, and increased survival of white blood cells with supplementation; however, these are mostly unconfirmed. Selenium is a cofactor in glutathione peroxidase, an enzyme that helps scavenge oxygen radicals. Selenium supplementation may improve certain indicators of immune functioning, but the supporting research has only been preliminary. There is no information on possible adverse effects of chronic zinc and selenium supplementation. No other mineral has been found either lacking or helpful in Down syndrome.

Amino acids. All three popular formulas (MSB Plus, NuTriVene-D, and Haps Caps) include amino acids. This supplementation is based on a study of adults with Down syndrome published in 1992 by Jerome Lejeune, MD. This study reported a consistent deficiency of serine and an excess of cysteine and lysine, which Lejeune felt were caused by overexpression of certain genes on the 21st chromosome. He postulated that the supplemental amino acids balanced the blood levels, making the biochemical workings of the body normal. However, a subsequent study of 22 children found no such abnormalities in serum or urinary amino-acid levels. Amino-acid supplements can cause an unpleasant odor in the user's urine and sweat.

Some proponents claim that overexpression of the cystathione beta-synthase gene causes a "functional" folic-acid deficiency in which serum levels are normal but the body can't use all of it and is unable to repair damaged DNA. Supplementation supposedly alleviates this alleged problem. This theory has yet to be supported in a scientific study. The FDA has just funded such a study, which should be completed

Vitamin supplementation with either RDA doses or megadoses have no effect on mental ability or behavior.

[continued on page 28]

Doing the DRIs, Part II

The second DRI report covers B-vitamins and choline

The National Research Council has released the second of its series of seven reports on Dietary Reference Intakes (DRIs). The first DRI report, published last year, discussed five nutrients related to bone health (see *NF*, Nov./Dec. 1997). This report covers the B-vitamins and choline. Except for folate and choline, the recommended intakes have not changed substantially since the 10th edition of NRC's *Recommended Dietary Allowances* was published in 1989.

As of January 1, 1998, U.S. food manufacturers are required to add folic acid to enriched bread, rolls, and buns; all enriched flour including bromated and self-rising flours; enriched corn grits and corn meals; enriched farina and rice; and all enriched macaroni and noodle products including vegetable macaroni, vegetable noodle, and nonfat milk macaroni products. In addition, breakfast cereals have added folic acid up to 400 mcg per serving.

This report stresses that adults need 400 micrograms per day of folate, a level that many Americans were not meeting before folate fortification began. To reduce the risk of spina bifida and other neural-tube defects, women capable of becoming pregnant should obtain the recommended amount from fortified foods, vitamin supplements, or a combination of the two, the report says. This is in addition to the naturally occurring folate they obtain from a varied diet.

Whether these women can rely totally on the folate in food is uncertain, since research has involved giving only additional amounts of folic acid.

The report recommends individual intakes for thiamin, riboflavin, niacin, vitamins B₆ and B₁₂, pantothenic acid, biotin, and choline. Most Americans and Canadians have adequate amounts of these nutri-

ents in their diet. The report notes, however, that between 10% and 30% of older adults have lost the ability to adequately absorb the B₁₂ in their food. Therefore, people over age 50 should meet most of their recommended intake with fortified foods or vitamin supplements.

In recent years, much research has centered on the roles that B-vitamins may play in reducing the risk of cardiovascular disease, cancers, and various mental disorders. Although promising, the research is not yet solid enough to justify recommendations for nutrient intake, the report says.


Therefore, rather than setting intake levels to reduce the risk of

these diseases, the DRI committee based its recommendations on values shown to guard against anemia or other conditions that can develop when these vitamins are lacking.

Consumption of folate and vitamin B₆ can reduce elevated levels of homocysteine in the blood, and some studies have linked lower homocysteine concentrations with a decreased risk of cardiovascular disease. But it is not yet

settled whether increasing folate or B₆ intake leads directly to less vascular and heart disease. Likewise, data showing that increased folate may protect against colorectal cancer do not provide conclusive evidence of a benefit, the report says.

The report lists an Adequate Intake level for choline, which is a departure from the previously issued *Recommended Dietary Allowances*. Choline is not generally considered a vitamin for humans, but recent research has shown that healthy males fed a choline-deficient diet developed liver damage. Concluding that sufficient human data are not available to


Except for folate and choline, the recommended intakes have not changed substantially since the 10th edition.

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WEB WATCH

This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web.

BEST

PubMed <http://www.ncbi.nlm.nih.gov/PubMed/> provides free MEDLINE searches and the ability to read abstracts of recent articles. The search engine also provides links to related articles and their abstracts.

Consumer Gateway to Health <http://www.consumer.gov/health.htm> and Healthfinder <http://www.healthfinder.org> provide links to a wealth of information from federal agencies and some nonfederal organizations. Most pathways lead to reliable information, but Healthfinder searches using key words related to "alternative" practices can lead to quacky sources. No links exist to the major antiquackery Web sites.

The table of contents and selected articles from the latest issue of the *Scientific Review of Alternative Medicine* are available at hcr.org/sram.index.html. This peer-reviewed medical journal publishes objective evaluations of the treatments and claims of "alternative medicine."

WORST

<http://www.healthfoodsbiz.com> is the new home page of *Health Foods Business*, a health-food-industry trade publication. The site contains current articles and a small archive of previously published ones.

Physicians Research Laboratories <http://www.physiciansresearch.com> is a multilevel company that markets many dietary supplements and herbal products. Its online retail catalog, which can be searched by inserting disease names, contains seven products said to be useful in preventing or treating cancer.

NEW DEVELOPMENT

Cable modems. Many cable companies now offer Internet connections that require no telephone line and download up to 50 times as fast as ordinary modems. The monthly cost is about \$40.

in 1999. However, it is not clear that cystathione beta-synthase levels are elevated in Down syndrome. One study showed increased amounts, but two others did not.

Another amino acid being promoted is tryptophan, which the body uses to synthesize serotonin. Decreased serum levels of serotonin have been found among people with Down syndrome. However, it is not yet possible to study serotonin levels in the brain, so it is not known whether the brain serotonin levels are also low. Oral administration of 5-hydroxytryptophan, a compound the body uses to make serotonin, has produced no apparent benefits.

Antioxidants. It has been known for many years that one of the genes overexpressed in Down syndrome is the one producing superoxide dismutase (SOD).

This enzyme converts oxygen radicals, which are normal by-products of cell metabolism, to hydrogen peroxide and water. Glutathione peroxidase then converts the hydrogen peroxide to water and oxygen. One theory states that if there is more SOD without a corresponding increase in glutathione peroxidase, then more hydrogen peroxide will be available to cause peroxidative damage to the cell. Experiments with cell cultures and postmortem tests seem to show that this oxidative damage might cause premature aging, damage leading to senile dementia of the Alzheimer's type, and the early loss of brain cells seen in infants with Down syndrome. The theory claims that antioxidant supplements may prevent and even reverse damage by peroxidation. However, no evidence of this oxidative damage has been found in living humans with Down syndrome, and the possibility of adverse effects from long-term use of large amounts of antioxidants has received little attention.

Digestive enzymes. Parents are being told that their children with Down syndrome lack certain digestive enzymes, making it harder for them to get needed nutrients from the diet. There is no evi-

dence that people with Down syndrome are deficient in any pancreatic or intestinal enzyme. In fact, most children with Down syndrome have trouble with constipation, whereas people deficient in digestive enzymes tend to have loose stools. There does seem to be an increase in celiac disease (a disorder of malabsorption of wheat gluten) in Down syndrome, but enzymes do not help in this condition.

Docosahexaenoic acid (DHA). This omega-3 fatty acid is an important constituent of cell membranes, especially in the retina and brain. Typically, DHA is synthesized in the body from other fatty acids in the diet. Studies have indicated that premature infants may not be able to synthesize enough on their own, so infant formulas for premature babies should be fortified with DHA. Because breast milk contains DHA, the World Health Organization and several



The use of DHA entails some risks. Too much can actually suppress the immune system.

other organizations have asked the FDA to include it in regular infant formulas in the U.S. (DHA is already a component in infant formula in several European countries.) Promoters of DHA for older children with Down syndrome claim that its use will improve eye and neurologic development. No research indicates that children with Down syndrome lack DHA, cannot make enough, or can benefit from DHA supplements.

Further, studies have shown that the critical period for supplementing DHA in preterm infants is the first two months of life, and little benefit beyond that should be expected. Likewise, the promotion of the use of other fatty acids has no proven benefit for children with Down syndrome. The use of DHA entails some risks. Too much can actually suppress the immune system, which is already impaired in people with Down syndrome.

Choline. Studies have shown that as children with Down syndrome age, there is a loss of neurons that produce the neurotransmitter acetylcholine. It is presumed that this loss may cause difficulties with memory and cognitive function. Choline is promoted for increasing myelination of neurons and for increasing levels of the neurotransmitter acetylcholine. However,

there is no evidence that oral choline supplements do either of these things in people with Down syndrome.

Piracetam. Another product mentioned on the ABC TV show profiling Dixie Lawrence was piracetam. Piracetam was developed in the 1970s and has been studied as a possible treatment for several diseases, including Alzheimer's disease, sickle-cell anemia, dyslexia, and a movement disorder called myoclonus. One study seemed to show cognitive improvement in children with Down syndrome given piracetam, but the study was not blinded or controlled by placebo. No other study on this topic has been published, though introductory studies are currently taking place. Piracetam has orphan drug status for myoclonus, but it is not FDA-approved for treating Down syndrome.

DMSO (dimethyl sulfoxide). The Sierra Clinic, located in Mexico, is treating children with muscular injections of amino acids and DMSO in an attempt to improve cognition and motor skills. One study supports such use, but the study was not blinded and has not been confirmed by any other researcher. One study on oral DMSO in children with Down syndrome found no benefit.

Adverse Effects

When use of supplementary nutrients began, many of the vitamins were in megadose quantities. However, in response to criticism of the danger of toxicity, most regimens are now within RDA ranges. Vitamins A and E continue slightly above the RDA in several supplements. There is still concern as to infants who are nursing or taking formula and being given these products getting too much vitamin A and a heavy protein load.

Information on side effects is not being collected systematically. However, at a meeting in late 1997 of the Down Syndrome Medical Interest Group, doctors caring for these children reported instances of diarrhea, hyperactivity, and insomnia. Another notable effect has been loss of appetite, related to the fact that these supplements are not usually palatable. Parents often hide them in food and drink. A few children have stopped eating, apparently suspicious that the supplement

was in all their food. Orange skin coloring (carotenemia) was occasionally reported before vitamin-A levels in these supplements were decreased.

Questionable Promotions

Supplement products have become a source of much debate and controversy in the Down syndrome community, largely because of the ways they are promoted. Here are some examples.

Stating speculations as fact. Supplement promoters commonly claim that “infants with Down syndrome become retarded largely because of the overexpression of” superoxide dismutase, and that supplements can compensate for this. Some promoters append a long list of scientific articles to their promotional pieces, implying that they all support what the promoter has written. Generally, however, many of the studies have little to do with nutritional supplementation, and of those that do, the vast majority actually conclude that supplementation is not beneficial. Such lists can be very misleading to the parent with no medical background or a physician who lacks the time to investigate the actual articles or even read the abstracts..

Dubious claims of benefits. The claims range from the mild, such as an increase in growth rate and decrease in rate of infections, to the extreme of normalizing such items as cognition, muscle tone, sleep habits, speech, visual acuity, and even facial features. The Sierra Clinic even claims on its Web site that its treatment “turns the Down syndrome patient into a normal healthy individual.”

Targeted nutrition. The NuTriVene-D program is said to be specifically designed for individuals with Down syndrome—to enable better absorption of nutrients and provide “essential nutrients that are typically deficient.” International Nutrition and the Trisomy 21 Research Institute refer to NuTriVene-D as “Targeted Nutrition Intervention” (“TNI”). However, they do not recommend testing vitamin and mineral levels before use of the product is begun (and do not recommend amino-acid testing at all). No definitive research has been published showing consistent nutrient deficiencies among children with Down syndrome. When asked why the supplement is called “targeted” if no

blood tests are done to determine whether deficiency exists before it is used, proponents reply that the stock formula fits the needs of approximately 85% of all children with Down syndrome and that adjustments can be made later. NuTriVene-D is also promoted for use by children with other “chromosomal deletions or mutations, and other abnormalities.”

Use of anecdotal evidence. Many parents report that their child improved after starting supplements. Stories of increased health, normal growth, children acting “brighter” or “more with it” are abundant and can be very alluring to the interested parent or doctor. However, such testimonials have been shown to be affected strongly by the parent’s bias. Curiously, two studies in the 1980s using Harrell’s formula showed that parents of the children taking the placebo were more likely to claim their child had shown improvement than were the parents of children taking the actual formula.

Misrepresenting the nature of Down syndrome. Some promotional literature refers to Down syndrome as a “progressive, metabolic, degenerative disease that if left untreated, would lead to poor health, mental retardation, and ultimately premature death.” Researchers and clinicians who have worked with adults with Down syndrome for years, if not decades, dispute this statement, as do current parents of adults with Down syndrome. The outlook for people with Down syndrome is not bleak, and each generation has had a healthier, longer life span. There is no evidence that any nutritional supplement enhances the prognosis. This tactic preys on parents of infants and young children with Down syndrome who are vulnerable to the suggestion that they might be bad or neglectful parents if they don’t give their children these products.

The Bottom Line

While a few vocal doctors have championed the idea that dietary supplements can help children with Down syndrome, most doctors who take care of these children on a day-to-day basis do not recommend supplements. In 1996, the American College of Medical Genetics stated that it knew of no scientific evidence that treatment with piracetam or amino-acid supplements can improve the mental func-

tioning of people with Down syndrome. In 1997, the National Down Syndrome Society cautioned parents that:

The administration of the vitamin related therapies—e.g., the vitamin/mineral/amino acid/hormone/enzyme combination—has not been shown to be of benefit in a controlled trial, that the rationale advanced for these therapies is unproven, and that the previous use of these therapies has not produced any scientifically validated significant results. Moreover, the long-term effects of chronic administration of many of the ingredients in these preparations are unknown. Despite the large sums of money which concerned parents have spent for such treatments in the hope that the conditions of their child with Down syndrome would be bettered, there is no evidence that any such benefit has been produced.

Despite all this, an estimated 5,000 children with Down syndrome have been placed on one of these supplements. The number still taking them is unknown, but interest in these treatments remains high. Told that the nutritional therapies can’t hurt and might help, many parents decide that the therapies are “worth a try.” Also, with so much research in Down syndrome focusing on prenatal testing or presenile dementia, many parents feel abandoned by the medical establishment. For these parents, the supplement promoters seem to be the only ones interested in “ending the implications of Down syndrome.” as one newsletter puts it.

No matter how alluring the theories are, or how convincing the anecdotal evidence may seem, it’s important to remember that these theories have not been proven, past experience with similar claims have been proven unhelpful, and the currently promoted formulas have not been scientifically proven safe or effective.

References and Web sites related to this article can be accessed from <http://www.quackwatch.com/01QuackeryRelatedTopics/down.html>. **NF**

Dr. Leshin is a pediatrician in Corpus Christi, Texas. He is a member of the Down Syndrome Medical Interest Group and is the father of a young boy with Down syndrome. His Web site <http://www.davlin.net/users/lleshin> deals with medical matters relevant to this condition.

[continued from page 25]

manex, Inc., of Simi Valley, California, which extracts the main ingredient from red-yeast-rice powder imported from China. The FDA believes that Cholestin is not a dietary supplement because lovastatin was not "marketed as a dietary supplement or food" before the agency approved Mevacor as a drug. However, a federal court judge has ruled otherwise and issued a temporary restraining order preventing the FDA from stopping the importation of red yeast rice.

BREATHASURE CLAIMS ATTACKED

The Warner-Lambert Company, which manufactures Certs breath mints, Clorets mints and gum, Dentyne gum, and Listerine antiseptic mouthwash, is suing in federal court to stop Breathasure Inc., of Calabasas, California, from continuing to claim or imply that its "internal breath freshener products," Breathasure and Breathasure-D, get rid of bad breath for hours and give users clean, fresh breath, even after they consume onions, garlic, or other foods containing aromatic substances. Claims of this type have been made on product labels; in radio, television, and magazine ads; and on the Internet at <http://www.breathasure.com>. Since 1994, the Council of Better Business Bureau's National Advertising Division has investigated twice and concluded that such claims were unsubstantiated. The active ingredients in Breathasure are said to be parsley seed and sunflower oils. Breathasure-D, also said to aid digestion, contains these ingredients plus ginger, chamomile, and "true licorice." Warner-Lambert's suit charges that "taking Breathasure capsules with water is no more effective in fighting bad breath than drinking water alone."

MAJOR ST. JOHN'S WORT STUDY FUNDED

St. John's wort (*Hypericum perforatum*) is widely claimed to be effective as an antidepressant. The mechanism of action is unknown; and the active ingredient, if any, has not been ascertained. Extracts standardized for hypericin (one of the

herb's constituents) have been found to be about twice as effective as a placebo. A few studies have found hypericin somewhat more effective than a standard antidepressive drug. However, none of these studies lasted more than six weeks, which is not long enough to determine how long the herb would be effective or to detect any long-term adverse effects (*British Medical Journal* 313:253-258, 1996). In addition, some of the studies were not well designed (*BMJ* 313:241-242, 1996). The NIH Office of Alternative Medicine has funded a three-year, \$4.3-million clinical trial to compare the effects of hypericum, a placebo, and a standard antidepressant on patients who are followed for up to six months.

PROPOSED ORGANIC RULES CHANGED

On May 8, Agriculture Department Secretary Dan Glickman announced that the USDA will revise its proposed national organic standards to eliminate provisions that would have permitted "organic food" to be fertilized by human waste or to contain irradiated or genetically engineered materials. Natural Foods Merchandiser has reported that the change was triggered by more than 200,000 protest messages from the organic industry and consumers.

CONTAMINATED GINSENG

Pharmaprint, Inc., recently notified the Food and Drug Administration of its discovery of residues of quintozone, an agricultural-crop fungicide, in a shipment of raw ginseng root. The presence of the fungicide ranged from 3 parts per million (PPM) to 12 PPM in random samples of the shipment. The raw ginseng root had been shipped from Hauser Chemical Research, Inc., in Boulder, Colorado. Hauser is one of several sources of ginseng for American supplement makers. Pharmaprint rejected the shipment of ginseng from Hauser and notified the FDA because of concern that the contamination could affect other ginseng products on the market.

HERBAL PRODUCT SETTLEMENT

The family of a student who died from an overdose of Ultimate Xphoria, an ephedrine-containing herbal product, has settled with the manufacturers of the

product for \$2.5 million. Neither company, American Supplement Technologies, Inc., nor Alternative Health Research, Inc., would comment. The student, Peter Schlendorf, was on spring break in Panama City in 1996 when he died. A month later, both Florida and New York banned the sale of the product as well as other products containing ephedrine. The FDA has issued a warning about the use of ephedrine.

FTC ACTION AGAINST SUPPLEMENT MAKER AND AD AGENCY

The maker and ad agency for two dietary supplements have agreed to settle Federal Trade Commission charges that they made false and unsubstantiated health claims. The FTC alleged that Bogdana Corporation promoted two products, Cholestaway and Flora Source, as cures or preventives for a variety of serious diseases and health conditions even though they did not have a reasonable basis for any of the claims at the time they were made. In a separate complaint, the FTC alleged that Western Direct Marketing Group, Inc., knew or should have known that the claims for the products were deceptive. The FTC settlement with these two companies contains various reporting provisions that will assist the FTC in monitoring the companies' compliance with the provisions of the agreement.

TEEN DIES AFTER TAKING 'RIPPED FUEL'

An herbal supplement called Ripped Fuel, touted to boost athletic performance, may have been involved in the death of a 15-year-old girl who collapsed at a soccer game in California. The coroner's report said that the cause of death was Bland-White-Garland syndrome, a congenital heart defect; however, the supplement may have aggravated the girl's heart condition. Her heart condition was discovered by medical examiners from Boston where a 23-year-old athlete suffered fatal heart damage linked to Ripped Fuel in 1996. Ripped Fuel contains ma huang, a form of ephedrine, and is available in supermarkets and health-food stores. Twinlab, the company that produces Ripped Fuel, maintains that their product was not a factor in the girl's death. **NF**

determine whether choline is essential in the human diet, the report advises that this question be given high research priority.

Upper Limits

The committee set the tolerable upper intake level for vitamin B₆ at 100 milligrams per day for adults. Intakes above this amount could cause sensory neuropathy, a nerve disorder that can lead to pain, numbness, and weakness in the limbs. Likewise, adults with vitamin B₁₂ deficiency who take excess folic acid place themselves at greater risk of progressive, crippling neurologic damage. For folic acid, the committee set the tolerable upper intake level for adults at 1,000 micrograms (1 milligram) per day.

Individuals who consume too much niacin have been shown to feel a flush, warm sensation, itching, and other symptoms. The committee set the tolerable upper intake level for niacin at 35 milligrams per day. Some individuals who take high-dose, over-the-counter niacin supplements may exceed this amount regularly.

The report lists an Adequate Intake level for choline, which is a departure from the previously issued Recommended Dietary Allowances. However, choline has not been established as an essential nutrient for humans, and the American diet contains enough that deficiency has not been reported outside of unusual experimental conditions.

Because the committee was unable to identify studies conducted on the adverse effects of taking large doses of the other B-vitamins, it did not set upper limits for thiamin, riboflavin, vitamin B₁₂, pantothenic acid, and biotin.

For Further Information

The full report—*Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B₆, Folate, Vitamin B₁₂, Pantothenic Acid, Biotin, and Choline*—will soon be available in both hardcover (\$34.95) and softcover (\$24.95) versions. It can be purchased by calling (800) 624-6242; sending payment to the National Academy Press, 201 Constitution Ave, NW, Washington, DC 20418; or ordering at a discount online (<http://www.nap.edu>). The full text can also be read online, although the process is cumbersome. **NF**

Book Reviews

Analysis and Ratings

NF reviews rate each book as either RECOMMENDED, NOT RECOMMENDED, or RECOMMENDED WITH RESERVATIONS, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Sugar Busters ... Busted!

Beth Fontenot

Sugar Busters! Cut Sugar to Trim Fat by H. Leighton Steward, Morrison C. Bethea, MD, Sam S. Andrews, MD, and Luis A. Balfart, MD (New York: Ballantine Books, 1998), 268 pp., \$22.00, ISBN 0-345-42558-8, hardcover.

Three physicians and a business executive have come up with the newest version of the “carbohydrates-are-bad-for-you” diet and have written a book that is selling like hotcakes (oops . . . those aren’t allowed on the diet). The main idea behind this so-called Sugar Busters diet is that sugar is “toxic” and that certain foods like bread, rice, potatoes, and bananas are bad for you because they have a high glycemic index. The glycemic index is a way of classifying foods based on how much they raise your blood sugar when you eat them. When your blood sugar rises, the body produces insulin, a hormone that lowers blood sugar. The creators of this diet claim that insulin is the “bad guy” because when you eat from their list of forbidden foods (foods with a high glycemic index), insulin will cause sugar to be stored as fat.

While there may be a grain of truth to the authors’ theory, they have exaggerated it, insisting in effect that eating a baked potato is like eating a potato skin filled with sugar. Yes, carbohydrates are broken down to sugar by the body. Yes, insulin does promote fat storage, but only when more carbohydrate is eaten than the body can use. The authors slam foods such as bananas, raisins, carrots, beets, corn, and

any food made with refined sugar or flour, and they okay eating foods like butter, bacon, eggs, and sausage. They say that fruit eaten in combination with other foods is harmful because it overstimulates insulin secretion, which, they say, will make you fat.

The truth is that weight gain occurs when foods are eaten in excess and not because of eating “wrong” foods, “bad” foods, or wrong combinations of food. Carbohydrates can be stored as fat, but only if they are eaten in excess. Anything you eat in excess of what your body needs is stored as fat. Carbohydrates are no more fattening than any other foods. In fact, excess carbohydrate in the diet is less efficient at producing body fat than excess fat in the diet.

Insulin is not a “bad guy.” It is needed to move sugar from your bloodstream into the cells of your body where it is used to fuel all of your activities. As for losing weight, what matters is calories—not carbohydrates and insulin.

You’ll probably lose a few pounds if you follow the Sugar Busters diet. But what you are losing is body water or muscle mass from depriving yourself of carbohydrates. When you restrict your intake of carbohydrates, your body loses its stored sugar (glycogen) along with the water in the stores. This causes a rapid weight loss when you first begin the diet. If carbohydrates are restricted too severely, your body makes another fuel source for itself—ketones. The excretion of excess ketones also causes water loss. In addition, if adequate sugar is not available to your body, your muscle mass is broken down to get to amino acids that can be converted to sugar. This again results in the loss of water stored in body proteins and of muscle mass.

The Sugar Busters diet ridicules established eating guidelines promoted by the American Dietetic Association, the American Heart Association, and other health organizations. An analysis of the suggested meal plan in the book using usual portion sizes shows that anywhere from 40 to 50% of the calories come from fat, and much of that is saturated fat. This exceeds the AHA’s recommendation that less than 30% of calories should come from fat with very limited amounts of saturated fat. The authors’ suggestion to limit certain grain foods, fruits, and veg-

etables contradicts the guidelines of the USDA's Food Guide Pyramid.

A joint report issued last year by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO) emphasized the importance of carbohydrates in the diet and stated that a high intake of carbohydrates can reduce the risk of obesity and protect against other nutrition-related diseases. The report also declared that there is no evidence that sugars and starches promote obesity.

In short, the book is filled with inaccurate nutrition information, and the authors' claims (and success stories) are not supported by scientific data. The whole idea of the glycemic index is controversial at best. The Sugar Busters diet is nothing new. It's just a recycled version of the same old low-carbohydrate diet that's been around for years. If it really worked, would it have to be repackaged, renamed, and resold every few years?

NOT RECOMMENDED

Primitive Nutrition

Becky Chase

Traditional Foods Are Your Best Medicine: Improving Health and Longevity with Native Nutrition by Ronald F. Schmid, ND (Rochester, Vermont: Healing Arts Press, 1997), 270 pp., \$14.95, ISBN 0-89281-735-6, softcover.

Using anthropological data and some biological speculation, Ronald Schmid hopes to convince the reader that our biology requires us to eat a natural-foods diet similar to that of ancient cultures. By eating these "traditional" foods, he says, we can avoid arthritis, cancer, heart disease, allergies, and even headaches.

Our genetic structure has not changed significantly over the last 10,000 years, yet Schmid contends that the introduction of refined foods and an imbalance of animal-to-plant foods in the last century have changed our bodies. Schmid tells us that in addition to causing degenerative diseases previously seldom seen, the modern diet has lengthened the gastrointestinal tract, causing problems with meat digestion. The diet has created changes in the formation of the dental arch and the skull that are responsible for

dental problems and mental illness. It is even supposed to be responsible for genetic diseases like Down syndrome.

Much of the "evidence" presented comes from work performed earlier in this century by Weston Price, a dentist, and Francis M. Pottenger, a physician. Though the chapters on native diets are interesting and Schmid raises valid concerns with the modern diet, he fails at making a clear and valid argument. The core assertion—that the modern diet has changed our biology—is simply speculation backed only by suggestive or inconclusive evidence.

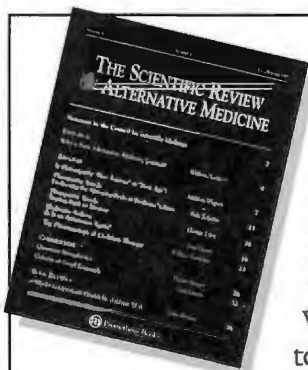
The types of foods available to us today obviously differ from those available centuries ago. Schmid's answer to that problem is to eat a natural-foods diet similar to modern-day hunter-gatherers that still exist in isolated pockets around the world. According to Schmid, that diet should consist primarily of two food groups, animal foods and vegetables. Animal foods should be from naturally raised animals and include meat, organ meats, and seafood eaten lightly cooked or raw. Also, raw dairy products, such as milk, cheese, yogurt, and a little butter, can be included. Vegetables should be eaten mostly raw, especially raw greens, along with other lightly cooked vegetables. But this particular mix of food groups in the suggested proportions conflicts with the recommendations of the Food Guide Pyramid. And there is no solid scientific evi-

dence that eating organic foods is more healthful than eating regular foods. In addition, though Schmid alludes to food-safety concerns, he gives only a cursory look at the issue of eating raw animal foods.

While the importance of omega-3 fats is covered thoroughly and accurately, other issues important to the author's argument are glossed over, such as specifics about the low nutrient density of refined foods. Many statements are simply wrong or unsubstantiated by references in the bibliography. For example, he claims that lamb fat is rich in EPA. According to nutrient analysis data, EPA appears in only small quantities in lamb, compared to fish, and only in the organ meats. He suggests the use of cod-liver oil as a reasonable alternative to eating fish, but then raises safety concerns without adequately addressing them. This curious mix of accurate and erroneous nutrition information, contradictions, and unsubstantiated assertions will leave the astute reader confused about specific recommendations.

The nutritional advice given in this book would be expensive and difficult for most people to follow. There are few practical guidelines that address implementation of the ideas or that demonstrate how to ensure nutritional adequacy and balance. **NF**

NOT RECOMMENDED



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**RAW MILK AND DISEASE
OUTBREAKS**

In a report published in the August 1998 issue of the *American Journal of Public Health*, surveillance data on raw milk-associated disease outbreaks in the U.S. from 1973 through 1992 were reviewed. In early 1995, when the data were collected, 28 states permitted intrastate sale of raw milk. In all of these states, the volume of raw milk sold represented less than 1% of the total of all pasteurized and unpasteurized milk sold. There were 46 reported outbreaks involving 1,733 cases that were reported in 21 states. Forty of the outbreaks (87%) occurred in states where intrastate sale of raw milk was legal. For more than half the cases and outbreaks, *Campylobacter* was the pathogen implicated. The number of reported outbreaks per 10 million person-years was 0.14 in states where intrastate sale of raw milk was legal and 0.03 in states where intrastate sale was illegal. (*Am J Public Health* 88:1219-1221, 1998)

GARLIC FAILURE

A recent report (*JAMA* 279:1900-1902, 1998) examined the effect of garlic therapy on serum cholesterol levels. In a double-blind, placebo-controlled study of 25 patients with moderately high cholesterol, some patients received garlic oil and some received a placebo. Later in the study, all of the patients received the placebo for a period of time and then all were given the garlic oil for another period. The results of the study showed that the garlic oil preparations had no influence on cholesterol levels.

**FDA RECALLS
HERBAL SEDATIVE**

Sleeping Buddha, a dietary supplement promoted as a treatment for insomnia and restlessness, has been recalled after the FDA determined that the product contained a prescription-strength sedative not listed on the label. The ingredient, estazolam, can have serious side ef-

[continued on page 37]

Pyruvate: Just the Facts

Why there's less than meets the eye

by Joseph P. Cannon

Every year a new batch of weight-loss products is touted to melt off excess pounds and increase muscle mass with minimal effort. This year is no different. One thing that's new, however, is that one new weight-loss product actually has scientific studies published in reputable journals that are alleged to back up its claims. The product is called pyruvate.

As promoted in health-food stores and in radio commercials, scientific evidence is supposed to show that pyruvate can:

- Enhance weight loss by 37% over dieting alone
- Enhance fat loss by 48% over dieting alone
- Decrease appetite
- Increase muscle endurance
- Inhibit the regaining of fat once dieting stops
- Increase metabolism

Pyruvate (also known as pyruvic acid) is a three-carbon compound generated as the end product of glycolysis, one of the body's energy-generating pathways. During the early 1980s, research showed that pyruvate could prevent fatty buildup in rat livers from chronic alcohol use. It was probably these studies that inspired University of Pittsburgh researcher Ronald Stanko to investigate whether pyruvate might also work as a weight-loss product. To date, Stanko is responsi-

ble for practically all of the studies on pyruvate and also holds the U.S. patent on "Pyruvate +," a form of pyruvate sold through Med Pro Industries.

The vast majority of studies done on pyruvate have in reality been mixtures of pyruvate and dihydroxyacetone, another three-carbon metabolite formed during glycolysis. Dihydroxyacetone is also found in over-the-counter pyruvate formulations but is rarely mentioned on the labels.

*To date,
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responsible
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"Pyruvate +."*

**Science and
Wishful Thinking**

How well, though, does scientific research support the claims made for pyruvate?

Claim #1: Enhances weight loss. There are few studies on pyruvate and its effects on weight loss. Those that have been done suggest that pyruvate works under laboratory conditions, but its effect is not very impressive. In one study, for example, obese women (defined as weighing over 200 pounds) added 30 grams of pyruvate to a 1000-calorie/day liquid diet for 21 days. This resulted in 37% more weight loss and 48% more fat loss compared to control subjects who were on the 1000-calorie/day diet only (*American Journal of Clinical Nutrition* 56:630-635, 1992).

These figures seem impressive until

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one looks at the actual pounds of weight and fat lost. Specifically, the 37% enhancement in weight loss amounts to an average of only 3.5 pounds difference between the group taking the pyruvate and the one not taking it. With respect to the 48% increase in fat loss, this too is misleading because only 3.2 pounds more fat were lost in those consuming pyruvate.

In a second study, obese women were placed on a 500-calorie/day diet for 21 days, with some of the women supplementing with 16 grams of pyruvate and 12 grams of dihydroxyacetone (*American Journal of Clinical Nutrition* 55:771-776, 1992). Again, women supplementing with pyruvate did lose significantly more fat and weight than those not supplementing, but those using pyruvate lost an average of only 1.98 pounds more weight and 1.76 pounds more fat. It's important to note that these weight-loss studies took place under controlled laboratory conditions. No published peer-reviewed study to date has ever been conducted in real-life situations where calorie intake is not strictly controlled.

Claim #2: Decreases appetite. This claim is based on only one study—a study that was performed not on humans but on laboratory rats. In this investigation, laboratory rats were allowed to eat as much food as they wanted. At the end of the study, researchers found that the rats that received pyruvate and dihydroxyacetone consumed less food than rats not receiving the supplements (*Journal of Clinical Nutrition* 53:847-853, 1991). To date, however, such a study has never been performed on humans.

Claim #3: Increases muscle endurance. There is only one published peer-reviewed study suggesting that pyruvate can increase muscle endurance—and the only published study done on men (*Journal of Applied Physiology* 68[1]: 119-124, 1990). This is the study that is most quoted to people interested in increasing their exercise ability. The study showed that a mixture of 25 grams of pyruvate and 75 grams of dihydroxyace-

tone taken for 7 days increased triceps endurance by 20%.

Of course, until other studies are done, this study should be considered preliminary. What's more, this study did not look at traditional aerobic conditioning like jogging or bicycling but rather at how long the triceps muscle (on the back of the upper arm) took to totally exhaust itself. Muscles other than the triceps as well as those undergoing different types of exercise might react differently, so it's unknown how these results might translate over to exercising individuals. This problem is even mentioned in the study in light of the fact that one of the participants had a reduced triceps endurance capacity following ingestion of pyruvate. Therefore, individuals looking to pyruvate to enhance their exercise ability should save their money until more research is conducted in this area.

Claim #4: Inhibiting the regaining of fat once dieting stops. Everybody knows that when one stops dieting and goes back to old eating habits, that weight slowly creeps back. Anything that could slow this process would certainly appeal to dieters who fall off the wagon. But the claim that pyruvate can suppress appetite is based on only one published peer-reviewed study (*International Journal of Obesity* 20:925-930, 1996).

In this investigation, obese women (average weight 228 pounds) went on a 310-calorie/day diet for 21 days. Following this, they then went on a three-day high-calorie diet to purposely regain the weight. Some women used a mixture of 15 grams of pyruvate and 75 grams of dihydroxyacetone during the dieting process. After the study, it was found that those women who didn't receive any pyruvate regained an average of 6.38 pounds of weight, while women who used pyruvate regained an average of 3.96 pounds of weight. This amounts to only a 2.42-pound difference between the groups. With respect to the regaining of fat, women not using pyruvate regained

There is only one published peer-reviewed study suggesting that pyruvate can increase muscle endurance.

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Juicing for Fun and Profit

Taking a good thing too far

by Therese Walsh

They say you can't have too much of a good thing, but as many marketers are proving, you can make too much out of a good thing—if that thing is juicing. Juicing is the consumption of juices from raw fruits and vegetables. Ever since Jay "The Juiceman" Kordich started promoting juicing years ago on television, it has become a trendy alternative to eating the real McCoy. And while juicing itself isn't inherently bad, the claims being made by advocates and companies selling juice extractors are often misleading at best and dangerous at worst.

Overselling Juice

Kordich himself claims that juices contain active enzymes that, by breaking food down in the digestive system, spare our bodies' own enzymes from having to put forth the effort. But the fact is, orally ingested enzymes will not significantly aid digestion and have no enzymatic activity in the human body.

Kordich's worst offense, however, comes from promoting the idea—without evidence—that juice by itself may be able to cure medical conditions including heart disease, impotence, and anxiety. The danger is that some naïve people will believe his claims and forego or abandon proven medical treatments to rely instead on an almost exclusively juice diet.

Naturopath Michael T. Murray, ND, makes unsubstantiated claims that specific juices can combat cancer, arthritis, kidney stones, and aging. In his book *The Complete Book of Juicing*, Murray recommends a true juice fast, just as a few other proponents of juicing do. Nutrition experts, however, point out that although brief fasts may not be harmful, depriving

the body of a well-balanced diet on a long-term basis can be very risky.

'Dried Juice'

Even more dubious are the many claims made for dried-juice products. Touted as the effortless way to meet the recommended quota of fruits and vegetables per day (because popping a pill is easier than peeling a banana), these products raise a host of critical questions. The most basic question is: Are there good scientific studies that back up any of the claims? But also:


Has research shown that the nutrient content of whole fruits and vegetables is fully maintained through processing? Are there side effects? Unfortunately, there appears to be *no solid research to answer these questions.*

One company, Juice Plus, has published a study in the *Journal of the American Nutritional Association*, but this rare piece of research is fatally flawed. This study looked at the effect of Juice Plus products or placebo on the body composition of 96 subjects.

The study authors hypothesized that subjects in the experimental group (who were fed two fruit and two vegetable capsules before meals, along with an undefined amount of "nutritionally enhanced protein drink mix" and two fiber chromium-laced wafers) would, by trial's end, have less fat mass and more lean muscle mass than their control group (who were given placebo capsules at unidentified times during the study).

The researchers report that this is exactly what happened. But there are other possible explanations for these results. It

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Kordich's worst offense comes from promoting the idea—without evidence—that juice by itself may be able to cure medical conditions.

WEB WATCH

This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web.

BEST

The Agricultural Research Service's Nutrient Data Laboratory <http://www.nal.usda.gov/tnic/foodcomp/Data/index.html> offers information on 6,000 foods in 22 food categories. Food composition data can be accessed by searching for individual foods or downloading by category.

The American Council on Science and Health <http://www.acsh.org> maintains a large site, full of excellent reports that can be purchased by mail or downloaded for reading with Adobe Acrobat.

WORST

The Acumin Corporation <http://www.acumins.com> offers a Personal Nutrition Program based on responses to online questionnaires for men and women. The "personal formulas" cost a minimum of \$39.95/month plus shipping. Above-RDA amounts of many nutrients are recommended regardless of the answers selected. Men who merely check "Yes" for "Are you concerned about heart disease or have your parents or siblings had heart disease?" raise the recommended levels of 11 vitamins at an additional cost of \$10 per month. The company offers hair analysis "to help you determine how well your body is absorbing the nutrients in your vitamins." Acumin is also seeking "Partners" to market from their own Web site and receive referral fees when visitors place orders.

RenewLife <http://www.renewlife.com> markets "intestinal cleansing" products to treat "leaky gut syndrome," an alleged condition in which the digestive tract is "overcome with parasites, Candida, and toxins." Product information and a free half-hour audiotape can be ordered by e-mail, or the tape can be audited online using RealPlayer software.

REPORTING HEALTH FRAUD

See a health claim on the Internet that looks a little suspicious? Fraudulent or dubious health products found on the Internet can be reported to the Food and Drug Administration by e-mail at otcfraud@cder.fda.gov or by calling 1-301-594-0070.

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an average of 3.96 pounds of fat while those using the pyruvate regained an average of 1.76 pounds of fat. Again, this amounts to only a 2.2-pound difference between them.

Claim #5: Increases metabolism. Much hype surrounds the claim that pyruvate can increase one's metabolism and therefore help one lose weight. Unfortunately there is no solid evidence to support this claim. Earlier studies in rats did show that pyruvate increased resting metabolism (the number of calories used at rest), but these results have never been confirmed in human studies. In fact, in the most recently published pyruvate study, the group of people who did *not* receive pyruvate had a higher resting metabolism at the end of the study than those who did receive the pyruvate. Therefore, the idea that pyruvate enhances human metabolism remains speculative at best.

With respect to side effects, the literature to date seems to show that pyruvate is relatively safe with the most noticeable problems being occasional diarrhea, loose or softened stools, and a rumbling sound in the gut which is caused by gas passing through the intestines. At the present time, nobody is sure of the physiological mechanism of action of the pyruvate/dihydroxyacetone mixture and how it relates to weight loss or any other reported claim.

All of the published peer-reviewed studies done to date except one have been either conducted on obese women on very restrictive diets or on laboratory rats. Therefore, results obtained from these populations may not indicate what would be gained from humans under more real-life situations where food intake is not strictly controlled. Also, the subjects in the studies consumed very large amounts of pyruvate and dihydroxyacetone, far in excess of the dose of 3 to 5 grams per day recommended in over-the-counter products. To date, no published peer-reviewed research exists showing that the 3- to 5-gram dose will produce the same effects as the higher dosages used in the studies.

Popular Hype

One prominent false claim that one is likely to encounter is "pyruvate is backed up by

25 years of extensive scientific research" (J. B. Roufs, *Muscle and Fitness*, December 1996). While it's true that research on pyruvate does appear in prestigious scientific journals, the fact is that there were no studies on pyruvate and weight loss published before 1986 or after 1996. That's only 10 years, not 25. Furthermore, if one were to look just at the human studies using pyruvate, then this number is even further reduced to only six years.

Some people selling pyruvate give out free audiotapes that boast of pyruvate's supposed amazing abilities. In one of these tapes, the person selling pyruvate (who is identified as a physician) states that when you are using pyruvate, "You are in the fat-burning mode—even when you are not exercising." This is very interesting because when you are resting, you are already in the "fat-burning mode." At rest, approximately 70% of the calories you derive energy from are coming from fat with the remaining 30% coming from carbohydrates (sugars).

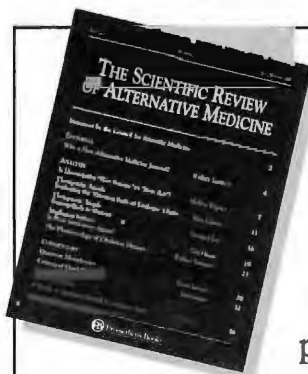
Some people claim that pyruvate is an antioxidant. As is mentioned in a recent review of pyruvate in *Medicine and Science in Sport and Exercise* (30: 837-843, 1998), some evidence hints that pyruvate might act as an antioxidant. But only three studies show that pyruvate acts

as an antioxidant—and these studies were conducted not on humans but on rodent hearts. More research is necessary to determine the efficacy of pyruvate's antioxidant action in humans.

Claims that pyruvate aids in cardiac function are prevalent. But there is absolutely no published peer-reviewed evidence that either pyruvate or dihydroxyacetone aids the heart in pumping blood more effectively. In fact, those studies that did record pyruvate's effect on heart functions found no change after use. Therefore, if you have any cardiac abnormalities, pyruvate is not the answer to your problems. You are best served by following medical advice.

Pyruvate is also supposed to build muscle. There is no published peer-reviewed scientific evidence showing that pyruvate can build muscle tissue. In the only study of exercise and pyruvate ever conducted, no mention was made regarding pyruvate having any effect on muscular strength or hypertrophy. This claim seems to be specifically targeting those individuals interested in weight lifting and bodybuilding. **NF**

Joesph P. Cannon is an exercise physiologist and an NSCA-certified personal trainer.



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fects, including the possibility of fetal damage if pregnant women take the supplement. In addition, it poses a risk to those who drive, operate heavy machinery, or take other sedative drugs or drink alcohol in addition to the supplement.

BRITISH BATTLE OVER B₆ DOSAGE

British nutrition authorities recommend daily intakes of pyridoxine (vitamin B₆) of 1.2 mg for adult women and 1.4 mg for adult men, amounts easily obtainable from food. In July 1997, the United Kingdom Ministry of Agriculture, Fisheries, and Food (MAFF) announced its intention to restrict sales of dietary supplements containing more than 10 mg of B₆. Higher-level products would continue to be available—through pharmacies (10–49 mg per day) or by prescription (50 mg or more)—but should carry a warning label.

According to Health Foods Business, all 13,000 U.K. pharmacies responded to the proposal by withdrawing such products, supermarkets followed suit, but health-food stores continue to sell them. MAFF states that its proposal was based on animal studies plus reports of nerve toxicity in humans taking as little as 50 mg per day over periods of months or years.

Opponents claim that the report was based on a single 1987 study that was seriously flawed. British and American manufacturers and trade groups have banded together to oppose the restrictions, which they fear could be followed by other European countries and be expanded to cover other nutrients. GNC and NTBY (Nature's Bounty) each contributed \$150,000 to British Consumers for Health Choice, a "consumer advocacy group" fighting the restrictions. In June 1998, a British parliamentary select committee recommended a voluntary limit of 100 mg. The controversy can be followed by searching for "pyridoxine" on MAFF's Web site (<http://www.maff.gov.uk>).

WEIGHT-LOSS DEVICE IS HOT

A Miami-based company, TV Store Corp./Body Fitness, Inc., is conducting a voluntary recall of a weight-loss product. The product, which is sold under the name "Moulding Body Electrical Body Belts" or "Personal Electro-Sauna," resembles a heating pad and can be wrapped around the waist, thighs, or arms. It has caused skin burns and fires. The FDA has alerted consumers to the recall and states that they are actively monitoring the situation.

MOST POPULAR SUPPLEMENTS

NBTY, Inc., a vitamin, mineral, and nutritional supplement manufacturer in Bohemia, NY, has released its consumer-tracking report of the ten most popular supplements in the United States. The report was compiled from data supplied by NTBY's retail chain, Vitamin World, Puritan's Pride catalogues, and Nature's Bounty products. The top nutritional supplements purchased by Americans are: (1) vitamin E, (2) vitamin C with rose hips, (3) St. John's wort, (4) calcium/magnesium, (5) echinacea, (6) ultra lecithin, (7) zinc, (8) E complex, (9) ginkgo biloba, and (10) cranberry caps.

SUPPLEMENT/HERB USE INCREASING

Hartman & New Hope, the market research division of New Hope Communications (publisher of the trade magazine *Natural Foods Merchandiser*), has asked 43,000 heads of American households about their use of vitamin, mineral, and herbal products. Its December 1997 survey found that 68% reported using at least one such product within the previous six months and that 31% of users took seven or more supplements regularly, averaging more than 12 per household. The magazine's June 1998 issue pegs 1997 natural-food-store sales at \$3.34 billion for vitamins and supplements, \$1.45 billion for bulk herbs and herbal products, and \$781 million for ayurvedic and homeopathic products.

VIAGRA IMITATOR STOPPED

On April 24, Missouri Attorney General Jay Nixon obtained a temporary restraining order (TRO) against the American Urological Clinic, a direct-mail marketer of an impotence treatment called Vaegra (VAY-gra), a name similar to the well-publicized new prescription drug for impotence. The company's solicitations included a *Newsweek* article on Viagra's success without making it clear that its product was not Viagra. A 75-day supply cost \$83.95. The company's brochure had stated that Vaegra was developed after years of scientific research at the clinic. However, the facility was nothing more than a Mailboxes, Etc. dropbox in Kansas City. The Missouri TRO prevents the American Urological Clinic from advertising, marketing, or selling its products in Missouri or from retrieving mail sent to its Kansas City dropbox. A few days earlier, Pfizer Inc., which makes Viagra, obtained a federal TRO against the clinic.

NUTRITION LITERATURE GUIDE

The *Good Nutrition Reading List*, published annually by the American Dietetic Association, is a consumer guide to books and newsletters that provide scientifically sound information. To obtain a copy, send \$3.50 and a self-addressed stamped 4 x 9 envelope to ADAF-GNRL, P.O. Box 77-6034, Chicago, IL 60678-6034.

UNFOUNDED HEALTH SCARES

The American Council on Science and Health has revised and expanded its excellent booklet *Facts Versus Fears: A Review of the Greatest Unfounded Health Scares of Recent Times*. The 52-page report includes scares related to cranberries, DDT, cyclamates, DES in beef, nitrites, saccharin, hair dyes, Love Canal, asbestos in hair dryers, coffee, EDB, Alar, Perrier water, dental amalgam, cellular phones, community water fluoridation, food irradiation, and bovine somatotropin (BST). Copies are \$5 each from ACSH, 1995 Broadway, 2nd Floor, New York, NY 10023.

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CHOLESTAWAY ADS ATTACKED

Bogdana Corporation, a Beverly Hills, California, company, and its officers have agreed to settle FTC charges that they made false and unsubstantiated health claims for Cholestaway and Flora Source. Cholestaway, a chewable tablet or wafer made of calcium carbonate and other ingredients, was claimed to lower serum cholesterol and blood pressure and cause weight loss. Flora Source, a powdered combination of bacteria in a base of rice starch, was advertised for treating or preventing AIDS, chronic fatigue syndrome, and other serious illnesses and health problems by replacing "natural" intestinal flora and boosting the body's immune system. The FTC also charged that the advertising agency that had created television infomercials for Cholestaway knew or should have known that the claims for it were deceptive. The settlements prohibit Bogdana and the agency from making efficacy, performance, or safety claims for any food, drug, or dietary supplement unless they have competent and reliable scientific evidence to back the claims.

GENETIC ENGINEERING ATTACKED

A coalition of scientists, religious leaders, and consumers is suing the FDA to obtain mandatory safety testing and labeling of all genetically engineered foods. The suit alleges that current FDA policy, which permits at least 36 such foods to be marketed, violates the agency's legal mandate to protect public health and provide consumers with relevant information about the foods they eat. It also charges that the policy violates religious freedom. The suit was organized by the Alliance for Bio-Integrity of Iowa City, Iowa, and the Washington, DC-based International Center for Technology Assessment, nonprofit groups "dedicated to the protection of human health and the environment through sustainable and safe technologies." The FDA does not require safety testing because it regards genetically engineered foods to be as safe as their natural counterparts. **NF**

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is little wonder that the experimental group lost fat mass—the researchers filled the experimental group up with protein drinks and fiber wafers before their meals! And the extra attention bestowed upon that group could have made them more aware of not only their diet, but their exercise habits. Any increase in exercise in this group could easily have resulted in increased lean muscle mass. The researchers apparently did not control for such a possibility.

In addition, the study's design makes it impossible to attribute the results to any experimental component. What do the researchers wish us to believe is the key here? The mystery nutritional drink mix, the Juice Plus capsules, or the chromium-laced wafers? The manufacturers of Juice Plus capsules, who coincidentally also manufacture the wafers and the drink mix—and who funded the study—would likely have us purchase all of the above.

Juice Plus has also paid a journal called the *American Medical Review* to publish results of their so-called bioavailability studies. But this research too is seriously flawed.

Juice Plus capsules and many other dehydrated juice capsule products, including those from AIM and Juice For Life, are promoted as having enzymes that aid in digestion. These claims are just as false for juice capsules as for whole juice. Even the claim that juice capsules contain much the same nutritional value as the actual juice is unsubstantiated. It is odd that few, if any, labels for juice capsules list the amount of vitamins, minerals, and fiber that the capsules are supposed to contain.

Noni Juice

Recently, multilevel marketers have been promoting a juice product called Noni. Noni juice comes from the plant *Morinda citrifolia*, a tropical variety found in Polynesia. Used for hundreds of years by native folk, the juice is said to have special healing powers.

There has been some research conducted with Noni, which shows that it contains a volatile oil that is biologically active. The research, however, has yet to

identify how Noni affects the physiology of living things. Laboratory research with mice has shown that Noni can inhibit the growth of cancer cells. Although this may be an interesting preliminary finding, it is a long way from proven usefulness in treating or preventing human cancer. We don't know how Noni inhibits cancer cells, whether it is toxic to normal human cells in much the same way that chemotherapeutic agents are, or what other effects it may have. Many substances that have looked promising in animal studies have proved a bitter disappointment in human research.

Ralph Heinicke, a researcher at the University of Hawaii, claims to have identified the active substance in Noni. He claims this substance, proxeronine—a precursor to the alkaloid xeronine—is responsible for increased cellular function and improved uptake of vitamins and minerals. Although his findings are preliminary at best, Heinicke has been recommending Noni for a variety of ills, including high blood pressure, depression, and arthritis. Multilevel marketing companies have latched onto Heinicke's claims, citing him whenever they tout their Noni.

Morinda Corporation has, until recently, been the sole seller of Noni juice, but now Nature's Rx, Inc., is selling Noni juice capsules. Both these companies have made unsubstantiated claims regarding Noni's effectiveness in the treatment of infections, asthma, and diabetes—conditions that should be dealt with by a medical professional. Nature's Rx, Inc., even claims that Noni—containing an essentially untested, biologically active, volatile oil—is indicated for pregnancy and childbirth. **NF**

Therese Walsh is a freelance health journalist in Binghamton, NY.

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If you find any news or information that may be of interest to our readers—such as published articles, news reports, press releases, or relevant personal experience—please send it to us. Mail it to Lewis Vaughn, *Nutrition Forum*, P.O. Box 664, Amherst, NY 14226-0664. We're especially interested in receiving information about enforcement actions by state agencies, lawsuits by victims of quackery, and health-fraud news that may have been overlooked by the national media.

Cranberry Juice and UTIs

Maybe Grandma was right

by Beth Fontenot, MS, RD

Generations of women have regarded drinking cranberry juice as a simple preventive or treatment for urinary tract infections (UTIs). Is this just another dubious folk remedy, or has science shown that this bit of medical folklore has some merit?

Cranberry Science

About 75 years ago scientists determined that eating large amounts of cranberries could cause urine to become more acid. They speculated that this could prevent or treat recurrent UTIs since bacteria favor an alkaline medium for growth. Subsequently, commercial cranberry juice cocktails became a popular "cure" for women suffering from recurrent UTIs, and anecdotal evidence seemed to support the notion. It was years later that scientists found that the increase in urine acidity after drinking cranberry juice was small and transient, but this finding did not seem to sway those who believed in the benefits of the beverage.

More recent studies have suggested that cranberry juice's alleged effectiveness against bacteria is not in its ability to acidify the urine, but in its ability to prevent bacteria from sticking to the lining of the urinary tract where they can multiply and cause infection. Two anti-adhesion factors have been isolated from cranberry juice, fructose and another polymeric compound of unknown nature. Several fruit juices have been tested, but only cranberry and blueberry juice contain the latter inhibitor.

Recently a randomized, double-blind, placebo-controlled study of 153 elderly women was undertaken to determine whether the regular consumption of cranberry juice did indeed have an effect on the incidence of UTIs (*Journal of the American Medical Association* 271:751-754, 1994). This population was chosen because the condition is particularly prevalent in older women. The research-

ers found that women given 10 ounces of cranberry juice every day for 6 months were half as likely to develop a urinary tract infection as women who consumed a placebo beverage. The study also suggested that cranberry juice reduced preexisting bacteria in the urinary tract as well as the occurrence of new bacteria, and that the effects were unrelated to the acidity of the women's urine. The researchers concluded that prevalent beliefs about the effects of cranberry juice on the urinary tract may have microbiologic justification.



The researchers concluded that prevalent beliefs about the effects of cranberry juice on the urinary tract may have microbiologic justifications.

Pop a Pill Instead?

Cranberry pills and capsules are sold in health-food stores and pharmacies. One brand is marketed as a convenient way to get the benefits of cranberry juice "without the unnecessary, and nutritionally harmful, calories." The pills are purported not only to prevent or treat UTIs, but also to treat kidney stones and act as a "urine deodorizer" for those troubled by urinary incontinence.

A Good Housekeeping Institute study of cranberry pills, however, found that they vary greatly in the amount of cranberry concentrate they contain, in the number of pills recommended per day,

and in their price. The manufacturers base their claims about the pills' effectiveness against UTIs on studies using cranberry juice. But there is no scientific evidence that cranberry pills are effective. Nor is there evidence that cranberry pills prevent kidney stones or "deodorize" the urine.

Jerry Avorn, MD, of Brigham and Women's Hospital and Harvard Medical School, was a researcher in the *JAMA* study. He doubts the effectiveness of cranberry pills or capsules. Avorn told the Good Housekeeping Institute, "We don't know if the active component in cranberries survives the extraction process, or, if it does, if it's present in an amount that would help."

The Bottom Line

So is cranberry juice effective against urinary tract infections? The answer seems to be probably. *NF* Editorial Board member Varro Tyler, PhD, a top expert on the medicinal use of plants, says that an "appropriate cranberry product" does seem to be useful in the prevention and treatment of UTIs. He thinks that consuming about 3 ounces daily of cranberry juice cocktail (which is about 33% cranberry juice) may work as a preventive, while 12 to 32 ounces daily may be useful as treatment for a UTI. He cautions, however, that cranberry juice may be a useful addition to standard antibiotic therapy *but should never be used in place of such therapy.*

More research is needed before we're certain of cranberry juice's anti-UTI effects in older women. And more studies will be necessary to determine if cranberry juice is effective at all in younger women. Another question that needs to be answered: Does cranberry juice taken along with antibiotics offer any benefit over either antibiotics or cranberry juice alone? In any case, it seems clear that for an otherwise healthy individual, drinking moderate amounts of cranberry juice can't do any harm and might even do some good. **NF**

Beth Fontenot is a nutrition consultant and freelance nutrition writer in Lake Charles, LA, where she also serves on the adjunct faculty at McNeese State University.

Book Reviews

Analysis and Ratings

How accurate and useful is the nutrition information in that book? Would a reputable reviewer recommend the book to professionals and consumers? These are the two questions that Nutrition Forum book reviews are intended to answer. So the reviews not only offer analyses but also rate each book as either RECOMMENDED, NOT RECOMMENDED, or RECOMMENDED WITH RESERVATIONS, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Phytochemical Feast

Lisa Waldron Martin, MA, RD

Eat to Heal: The Phytochemical Diet and Nutrition Plan by Kristine M. Napier, MPH, RD, LD (Warner Books, 1998), 282 pp., \$5.99, ISBN 0-446-60475-5, softcover.

This information-packed book is aimed toward a general audience, but nutritionists will find much of it worthwhile. Dietitians unfamiliar with the explosion of research being done on phytochemicals will certainly feel more informed after reading this book, and others will learn enough little-known food facts to make the effort worthwhile.

The book is organized in four sections to give more than one way to access information: by specific phytochemical, by plant foods, by diseases, and by recipes. If readers are searching for information on lycopene, tomatoes, prostate cancer, or recipes containing vegetables, they merely look for those headings.

Although a general audience would find nothing lacking in this volume, health professionals may wish the author had annotated her sources rather than just describing studies and quoting researchers. The author is an experienced nutrition writer and mentions studies that are well

known or from reputable institutions. Readers, however, have to remember not to draw conclusions based on a single study.

The primary usefulness of this book to nutrition professionals lies in its reviewing of the latest findings in the field. The book also engenders a greater appreciation of the disease-preventing potential of all types of plant foods including herbs and spices, whole grains, and even fruits and vegetables formerly thought of as nutritional lightweights, such as apples and onions. The author acknowledges that although most phytochemical research is still at the laboratory stage, the results so far correlate well with epidemiological studies. Some epidemiological findings have practical implications, such as the data showing that once-a-week soybean or tofu eaters have a significantly decreased risk of rectal cancer.

Some buying, preparing, and menu ideas may be elementary to experienced cooks, but useful information and ideas are there, especially on lesser-known foods. The recipes which comprise about one-third of the book are all low fat. They are especially helpful if looking for ideas on using more uncommon plant foods.

RECOMMENDED

Real Medicine?

Manfred Kroger

Rediscovering Real Medicine by Jean Elmiger (Boston, MA: Element Books, Inc., 1998), 281 pp., \$14.95, ISBN 1-86204-199-7, softcover.

If *Nutrition Forum* were a periodical *not* devoted to mainstream science, if its contents were *not* hinged on medical majority consensus thinking and steeped in the tradition of the scientific method to arrive at the truth—then this book could be recommended as a contribution to the literature of homeopathy.

Its subtitle is "The New Horizons of Homeopathy." The author sounds so sincere, so devoted, and so superior to us all, who could dislike him? He is not unlike my uneducated grandmother, may she rest in peace, who also distrusted all of orthodox (allopathic) medicine and sought refuge and healing powers in nature, in herself, in

the mysterious. In short, in the *unproven*. She too was fearful of inoculations and the evils you might meet in a hospital.

Elmiger's contempt for his fellow medical practitioners is immense and begins after his traditional European medical studies. His search for a new way of healing and preventing disease is so bizarre and unfathomable to a rational mind, it can only be relegated to the fringes of the medical arts. Nevertheless, his literary skills (this book is a translation of the 1985 French version), his devotion to patients, his learning and powers of persuasion are genuine. And therein lies the danger for gullible, ordinary people.

The author touts the book as a "revolutionary new approach to health"—then launches into an incomprehensible self-made theory of what constitutes health and disease. Much is taken from ayurvedic, Chinese, and astrological medicines, and, of course, he is totally sold on homeopathy and ridicules all those poor souls who are not. To believe what you read in these pages, you must have ultimate faith in the supernatural, in a construct of unproven and unprovable bioenergetic phenomena, and actually step back in time into premodern views of the body and the forces within. In short, the book teaches metaphysical mysticism and requires the reader to engage in "four-dimensional reasoning." Edgar Cayce is among Elmiger's role models, as are Hahnemann and other "pioneers" who brought us live sheep-cell therapy, biological catalysis/diathesis, the use of oligo-elements, the obsession with the spinal column, blocked energy circuits, Hering's law, Voll's electro-acupuncture machine, nosodes, and other such concepts grounded in mostly wishful thinking. **NF**

NOT RECOMMENDED

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**MARK MCGWIRE AS
ROLE MODEL**

Along with home runs, baseball hero Mark McGwire is delivering mixed messages. On one hand, he is involved in discouraging youths from using chewing tobacco. Since July, the Alliance of the American Dental Association has distributed thousands of posters and hundreds of thousands of trading cards containing his picture and the warning, "Don't use spit tobacco, it's poison." On the other hand, revelation of his use of "dietary supplements" said to contain androstenedione has caused sales of this product to soar. Androstenedione is a steroid hormone that can raise the body's level of testosterone. In August, a panel of baseball officials was appointed to consider whether androstenedione use should be banned, as it is in most sports, here and abroad. The Endocrine Society has warned that the purity, effectiveness for athletes, and safety of commercially marketed products are unknown.

**SUPPLEMENT CLAIMS
PROHIBITED**

The FDA has rejected the first set of health claims submitted by a dietary supplement manufacturer (Weider Nutrition International) under provisions of the FDA Modernization Act of 1997. According to Natural Foods Merchandiser, the prohibited claims were: (1) vitamin A and beta-carotene may reduce the risk in adults of atherosclerosis, coronary heart disease, certain skin cancer; (2) vitamins C and E may reduce the risk in adults of atherosclerosis, coronary heart disease, certain cancers, cataracts; (3) B-complex vitamins may reduce the risk in adults of cardiovascular disease by lowering elevated cholesterol levels; (4) chromium in adults may reduce the risk of hyperglycemia (high blood sugar) and the effects of glucose intolerance; (5) omega-3 fatty acids in adults may reduce the risk of cardiovascular disease; (6) zinc in adults may increase the body's ability to fight infection and heal wounds; (7) garlic in adults may reduce serum cholesterol and the risk of cardiovascular dis-

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Fad Diagnoses*An epidemic of nonsense in nutrition
and 'fringe' medicine*

by Stephen Barrett, MD

The *American Heritage Dictionary* defines "fad" as "a fashion that is taken up with great enthusiasm for a brief period of time; a craze." A small percentage of physicians and large percentages of chiropractors, naturopaths, and bogus "nutritionists" are labeling patients with diagnoses not recognized by the scientific community. The diagnoses are, in fact, fads—with no scientific backing at all. More than a dozen such briefly popular labels have been promoted during the past 50 years. Some refer to actual disease (which the patients do not have), whereas others are not recognized by the scientific community (see box). Some unscientific practitioners apply one or more of these labels to nearly every patient they see. In many cases, they use non-standard laboratory tests to "diagnose" them and recommend "dietary supplements" to treat them.

Years ago, many people who were tired or nervous were said to have "adrenal insufficiency." The vast majority of these people were not only misdiagnosed but were also treated with adrenal gland extract, a substance that the FDA later banned because it was too weak to treat the actual disease. "Low thyroid" (hypothyroidism) was likewise unjustifiably diagnosed in many cases of fatigue or obesity. Today's "fad" diagnoses used to explain various common symptoms are chronic fatigue syndrome, hypoglycemia, food allergies, Lyme disease, parasites, "multiple chemical sensitivity," "candidiasis hypersensitivity," "Wilson's syndrome," "leaky gut syndrome," "mercury

amalgam toxicity," and "cavitational osteopathosis." The first six of these are legitimate conditions that unscientific practitioners overdiagnose. The rest are figments of pseudoscientific imagination.

Only a small percentage of people troubled by fatigue have chronic fatigue syndrome (CFS). According to criteria developed by the U.S. Centers for Disease Control and Prevention, CFS should never be diagnosed unless fatigue persists or recurs for at least six months and is se-

Fad Diagnoses***Scientifically Recognized but
Inappropriately Diagnosed:***

Adrenal insufficiency
Chronic fatigue syndrome
Food allergies and sensitivities
Hypoglycemia
Hypothyroidism
Lyme disease
Parasites

***Not Scientifically Defined
or Recognized:***

Candidiasis hypersensitivity
("yeast allergy")
Cavitational osteopathosis
Leaky gut syndrome
Mercury-amalgam toxicity
Multiple chemical sensitivity
Wilson's syndrome

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were enough to reduce the patient's activity level by more than half. In addition, the fatigue should be accompanied by several other symptoms, such as severe headaches, low-grade fever, joint or muscle pain, general muscle weakness, sleep disturbance, and various psychological symptoms. *Consumer Reports* has called CFS "a magnet for quacks" and warned that "some practitioners create CFS patients by finding the syndrome in people who clearly don't have it."

Real cases of hypoglycemia exist, but they are rare and should be carefully checked by laboratory testing before the diagnosis is made. The diagnosis should be reserved for patients who get symptoms two to four hours after eating, develop blood glucose levels below 45 mg. per 100 ml whenever symptoms occur, and are immediately relieved of symptoms when blood sugar is raised. The glucose tolerance test is not reliable for evaluating most cases of suspected hypoglycemia. Low blood sugar levels without symptoms have no diagnostic significance because they occur commonly in normal individuals fed large amounts of sugar. The way to reliably diagnose hypoglycemia is to prove that blood sugar is low whenever symptoms occur during the patient's usual living pattern. The most practical way to do this is probably with a home testing device.

Doctors who overdiagnose hypothyroidism often base their diagnosis on "low" temperature readings determined by placing the thermometer under the armpit. This is not a valid test of thyroid function. Proper diagnosis requires blood tests that measure thyroid hormone levels.

MCS

The expression "multiple chemical sensitivity" (MCS) is used to describe people with multiple symptoms attributed to environmental factors. Proponents claim that when the "total load" of physical and psychological stresses exceeds what a person can tolerate, the immune system goes haywire and hypersensitivity to tiny amounts of common foods and chemicals can trig-

ger a wide range of symptoms. Doctors advocating this notion call themselves "clinical ecologists" or specialists in "environmental medicine." They recommend avoidance of foods and environmental substances to which they consider the patient hypersensitive. Extreme restrictions can involve staying at home for months or living in a trailer designed to prevent exposure to airborne pollutants and synthetic substances. In many cases, the patient's

life becomes centered around the treatment. The American Academy of Allergy, Asthma and Immunology (AAAAI), the nation's largest professional organization of allergists, has warned: "Although the idea that the environment is responsible for a multitude of health problems is very appealing, to present such ideas as facts, conclusions, or even likely mechanisms without adequate support is poor medical practice."

Clinical ecologists base their diagnoses primarily on the results of "provocation" and "neutralization" tests, in which suspected substances are administered under the tongue or injected into the skin. If any symptoms occur, the test is considered positive and lower concentrations are given until a dose is found that "neutralizes" the symptoms. Researchers at the University of California have demonstrated that these procedures are not valid. In a double-blind study, 18 patients each received 3 injections of suspected food extracts and 9 of normal saline over a 3-hour period. The tests were conducted in the offices of clinical ecologists who had been treating them. In nonblinded tests, these patients had consistently reported symptoms when exposed to food extracts and no symptoms when given injections of saline (dilute salt water). But during the experiment, they reported as many symptoms following saline injections as they did after food-extract injections, indicating that their symptoms were nothing more than placebo reactions. "Neutralizing" doses were equally effective whether they were food extracts or saline.

The diagnoses are, in fact, fads—with no scientific backing at all.

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Does Garlic Lower Cholesterol?

New studies tell the tale

by **Beth Fontenot, MS, RD**

Despite the long-held belief that garlic can lower blood cholesterol levels, it turns out that this odoriferous herb may not have cholesterol-busting properties after all. There have been numerous studies published on the health benefits of garlic, and many of those have looked at whether garlic can reduce elevated cholesterol levels. The results have been contradictory, and the findings of two new studies raise even more doubts.

Garlic 101

Garlic is a member of the lily family. Its active compound, allicin, is what gives garlic its distinctive odor and is the component believed to be responsible for its purported health benefits. These supposed benefits include not only lowering cholesterol levels, but also preventing cancer, lowering blood pressure, acting as an antibiotic, and preventing blood clots.

The results of early studies on garlic seemed to show that it lowered cholesterol levels. Undoubtedly, this belief helped to drive consumer interest in it. Americans spent \$71 million on garlic supplements in 1997, making it one of the most popular herbal supplements.

In the early 1990s, two meta-analyses of the research on garlic were published suggesting that garlic lowered cholesterol an average of 9% to 12% in people with high cholesterol levels (*Ann of Intern Med* 1993 Oct 1;119 (7 Pt 1): 599-605; *J R Coll Physicians Lond* 1994 Jan-Feb; 28(1):39-45). However, the reliability of these analyses has been questioned by researchers because of the poor design of some of the underlying studies and the possibility of publication bias. Some of the studies were not placebo-controlled, some did not control for the effects of diet, and some did not use standardized laboratory measurements. A later meta-analysis (*J R Coll Physicians Lond* 1996 Jul-Aug;30 (4):329-34) found that garlic was less effective in reducing total cholesterol than had been suggested by other analyses.

New Evidence

Subsequently a randomized placebo-controlled study of 50 people with high serum cholesterol levels was published (*Arch Intern Med* 158:1189-1194, 1998). The participants took either three tablets of dried, powdered garlic (the equivalent of one clove of fresh garlic) or placebo pills for four months. The study participants also followed a low-fat eating plan for two months before the study as well as during the study. The researchers concluded that garlic powder pills had the same effect on blood cholesterol levels as the placebo pills did—absolutely none.

Another study published about the same time supported the same conclusion (*JAMA* 279:1900-1902, 1998). It was a double-blind, randomized, placebo-controlled, crossover study consisting of 25 participants. The subjects took garlic oil capsules, a form of garlic thought to be more potent than powdered garlic. They took the capsules (equivalent to about two cloves of fresh garlic) for four months and then took a placebo pill for four months. The researchers found that garlic had no effect on blood cholesterol levels or on cholesterol metabolism and concluded that there is no evidence to recommend garlic supplements for lowering cholesterol levels.

Two concerns have been expressed about using garlic to lower cholesterol. One is that garlic has anticoagulant activity that could cause a problem, particularly in people who are also taking anticoagulants like vitamin E, ginkgo biloba, aspirin, and fish oil. The second concern is that people might depend on garlic supplements to lower one's cholesterol instead of following proven methods, such as dietary and lifestyle changes or the use of cholesterol-lowering medications, which could have serious health consequences. **NF**

Beth Fontenot is a nutrition consultant and freelance nutrition writer in Lake Charles, LA.

WEB WATCH

This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web.

BEST

The American Medical Association's Personal Nutritionist page <http://www.ama-assn.org/insight/yourhlth/pernutri/pernutri.htm> offers a quick diet assessment test that can be completed in 3-5 minutes.

In-depth nutritional assessments are available through the "123 Step" feature of CyberDiet's fee-based health club http://www.cyberdiet.com/new_health_club_site/health_club/

The American Heart Association now has full-text versions of its journals at <http://www.ahajournals.org> Access to 1998 issues will be free through December 31.

Medical World Search <http://mwsearch.com> searches its database of thousands of health-related Web sites that have been selected by an expert advisory panel.

WORST

Health Equations <http://www.healtheqs.com/frpage.shtml> is the Web site of Lynn August, MD, who bases supplement recommendations and food plans on interpretations of blood count and blood chemistry screening tests. Her Health Equations Blood Test Evaluation is claimed to be "the only evaluation that specifically addresses the physiology and pathophysiology of cells and tissues." Physicians who use the program can also obtain supplements to sell to their patients.

The Bahamas-based Centre for Nutrition and Natural Treatment <http://www.hansi.com> promotes treatment with a "hormonally-balanced diet" and an "herbal homeopathic preparation of primarily desert and rain forest plants which has been found to enhance the immune system in humans and other living organisms." The product is claimed to be effective against cancer and several other serious diseases.

Candidiasis Hypersensitivity

"Candidiasis hypersensitivity" is another bogus diagnosis whose symptoms are said to be multiple and include fatigue, depression, inability to concentrate, hyperactivity, headaches, skin problems (including hives), abdominal pain and bloating, constipation, diarrhea, respiratory symptoms, and problems of the urinary and reproductive organs. The main promoter of "candidiasis hypersensitivity" has been William G. Crook, MD, of Jackson, Tennessee, who wrote and published *The Yeast Connection*. According to Crook, "If a careful checkup doesn't reveal the cause for your symptoms, and your medical history [as described in his book] is typical, it's possible or even probable that your health problems are yeast-connected." To correct these alleged problems, he recommends allergenic extracts, antifungal drugs, vitamin and mineral supplements, and diets that avoid refined carbohydrates, processed foods, and (initially) fruits and milk.

The AAAAI regards the concept of candidiasis hypersensitivity as "speculative and unproven" and notes that everyone has some of its supposed symptoms from time to time. The Academy has warned that some patients who take the inappropriately prescribed antifungal drugs will suffer side effects and that overuse of these drugs could lead to the development of resistant germs that endanger everyone.

'Hidden Allergies'

Many dubious practitioners claim that food allergies may be responsible for virtually any symptom a person can have. In support of this claim—which is false—they administer tests purported to identify offending foods. The most notorious such test is cytotoxic testing. This test is performed by observing what happens to a patient's white blood cells when they are placed on microscope slides containing dried food extracts. The test results are then used to explain the patient's symptoms and to design a "personalized diet program" that includes vitamins and minerals—sold by those administering the test. Controlled studies have never shown cytotoxic testing

to be reliable, and some studies have found it to be highly unreliable.

Another test claimed to locate "hidden allergies" is the ELISA/ACT, which involves culturing the patient's lymphocytes and seeing how they react to up to 300 foods, minerals, preservatives, and other environmental substances. After the test is completed, the practitioner recommends dietary modification and supplements. Similar claims are made for ALCAT testing, which is done in a different way. Although these tests can assess the levels of certain immune responses, these are not necessarily related to allergy and have nothing whatsoever to do with a person's need for supplements. Moreover, many of the symptoms listed in brochures from the labs performing them are unrelated to allergy and are not appropriately treated with supplement products.

The correct way to assess a suspected food allergy or intolerance is to begin with a careful record of food intake and symptoms over a period of several weeks. If significant symptoms occur, the next step should be to see whether avoiding suspected foods for several weeks prevents possible allergy-related symptoms from recurring. If so, the suspected foods could be reintroduced one at a time to see whether symptoms can be reproduced. However, if the symptoms include hives, vomiting, swollen throat, wheezing, or other difficulty in breathing, continued self-testing could be dangerous, so an allergist should be consulted.

Mismanagement of Lyme Disease

Lyme disease is caused by a spiral-shaped bacterium (spirochete) that enters the skin at the site of a tick bite. The disease typically begins with a rash, often accompanied by fever, malaise, fatigue, and muscle and joint pains. The characteristic skin lesion where the bite occurs is a flat or raised red area that expands, often with clearing at the center, to a diameter of up to 20 inches. However, it does not always occur, which can make the diagnosis more difficult, especially when the patient is not aware of having been bitten by a tick. Other early signs can include small skin lesions, facial nerve paralysis, lymphocytic meningitis, and heart-rhythm disturbances. When diagnosed early, the disease

is easily cured with a few weeks of antibiotic therapy. However, if untreated or inadequately treated, neurologic, cardiac, or joint abnormalities may follow.

The diagnosis of Lyme disease should be based primarily on an evaluation of the patient's symptoms and the probability of exposure to the Lyme spirochete. Laboratory evaluation is appropriate for patients who have the arthritic, neurologic, or cardiac symptoms associated with Lyme disease, but it is not warranted in patients who have nonspecific symptoms, such as those of chronic fatigue syndrome. A true-positive test result consists of a positive enzyme-linked immunosorbent assay (ELISA) or immunofluorescent assay followed by a positive Western blot. However, positive tests, by themselves, do not provide sufficient basis for diagnosing Lyme disease. The diagnosis should be based on the overall picture, including history and physical findings. Negative antibody testing after the first few weeks strongly suggests that the patient does not have the disease.

How to Create and Promote a New Fad Disease

- Pick any symptoms—the more common the better.
- Pick any disease—real or invented. (Real diseases have more potential for confusion because their existence can't be denied.)
- Assign lots of symptoms to the disease.
- Say that millions of undiagnosed people suffer from it.
- Pick a few treatments. Including supplements will enable health-food stores and chiropractors to get in on the action.
- Promote your theories through books and talk shows.
- Don't compete with other fad diseases. Say that yours predisposes people to the rest or vice versa.
- Claim that the medical establishment, the drug companies, and the chemical industry are against you.
- State that the medical profession is afraid of your competition or trying to protect its turf.
- If challenged to prove your claims, say that you lack the money for research, that you are too busy getting sick people well, and that your clinical results speak for themselves.

Some practitioners are inappropriately diagnosing Lyme disease and administering inappropriate treatments such as malaria therapy, hyperbaric oxygen therapy, colloidal silver, dietary supplements, herbs, and long-term antibiotic therapy. Intravenous antibiotic therapy, when given appropriately, should not last more than a month. It should not be given unless oral antibiotic therapy has failed and persistent active infection has been demonstrated by culture, biopsy, or other bacteriologic technique. Physicians who use these treatments or who diagnose large numbers of patients with Lyme disease who live in areas where the disease is not endemic should be considered suspect.

'Wilson's Syndrome'

"Wilson's syndrome" entered the health marketplace in 1990, when E. Denis Wilson, MD, of Longwood, Florida, coined its name. Its supposed manifestations include fatigue, headaches, PMS, hair loss, irritability, fluid retention, depression, decreased memory, low sex drive, unhealthy nails, easy weight gain, and about 60 other symptoms. However, Wilson claims that his "syndrome" can cause "virtually every symptom known to man." He also claims that it is "the most common of all chronic" ailments and probably takes a greater toll on society than any other medical condition. Wilson claims to have discovered a type of abnormally low thyroid function in which routine blood tests of thyroid are often normal. He states that the condition is "especially brought on by stress" and can persist after the stress has passed. He claims that the main diagnostic sign is a body temperature that averages below 98.6° F (oral), and that the diagnosis is confirmed if the patient responds to treatment with a "special thyroid hormone treatment." (Note: Although "Wilson's syndrome" is a bogus diagnosis, there is a Wilson's disease, a rare condition caused by a defect in the body's ability to metabolize copper.)

In 1991, a 50-year-old woman died after excessive amounts of thyroid hormone prescribed by Wilson had caused rapid heartbeat that led to a heart attack. In 1992, the Florida Board of Medicine fined Wilson \$10,000, suspended his license for six months, and ordered him to undergo

psychological testing. If his license is reinstated, he would also be required to take courses in endocrinology, the scientific method, and medical ethics. As far as I know, Wilson has not resumed practice. However, he still operates a toll-free telephone hotline (800-621-7006) that dispenses information about his theories and publications. In September 1997, Richard A. Marschall, ND, a naturopath licensed in the state of Washington, was charged with unprofessional conduct for allegedly diagnosing and treating between 75 and 100 patients for Wilson's syndrome solely via telephone, mail, or through the Internet.

Parasites and 'Leaky Gut'

Another diagnosis popular among supplement promoters is "parasites," which may be "treated" with laxatives and other "intestinal cleansers," colonic irrigation, plant enzymes, dietary measures, and homeopathic remedies. Yet another, "leaky gut syndrome," is described by proponents as a condition in which the intestinal lining becomes irritated and porous so that unwanted food particles, "toxins," bacteria, parasites, and "Candida" enter the bloodstream and result in "a weakened immune system, digestive disorders, and eventually chronic and autoimmune disease." Treatment of this alleged condition can include dietary changes (such as not eating protein and starch at the same meal); "cleansing" with herbal products; "reestablishing good balance" of intestinal bacteria; and supplement concoctions claimed to strengthen and repair the intestinal lining.

Inappropriate Dental Care

A small but vocal group of dentists, physicians, and various other "holistic" advocates claim that mercury-amalgam ("silver") fillings are toxic and cause a wide range of health problems including multiple sclerosis, arthritis, headaches, Parkinson's disease, and emotional stress. They recommend that mercury fillings be replaced with either gold or plastic ones and that vitamin supplements be taken to prevent trouble during and after the process. Scientific testing has shown that the amount of mercury absorbed from fillings is only a tiny fraction of the average daily

intake from food and is insignificant. The American Dental Association considers the unnecessary removal of silver amalgam fillings "improper and unethical." In 1996, the leading anti-amalgamist, Hal A. Huggins, DDS, of Colorado Springs, Colorado, had his license revoked. During the revocation proceedings, the administrative law judge concluded: (1) Huggins had diagnosed "mercury toxicity" in all patients who consulted him in his office, even some without mercury fillings; (2) he had also recommended extraction of all teeth that had had root canal therapy; and (3) Huggins's treatments were "a sham, illusory and without scientific basis."

Some dentists maintain that facial pain, heart disease, arthritis, and various other health problems are caused by infected "cavitations" (within the jaw bones) that are not detectable on X-ray examination or treatable with antibiotics. Calling this condition "cavitation osteopathosis," advocates claim they can cure the patient by locating and scraping out the affected tissues. They may also remove all root-canal-treated teeth and most of the vital teeth close to the area where they say an infection exists. There is no scientific evidence to support this assertion or the diagnostic and treatment methods based on it.

The Bottom Line

I believe that the licenses of practitioners engaged in the above activities should be revoked and that the inappropriate products involved should be removed from the marketplace. **NF**

Dr. Barrett, a retired psychiatrist who resides in Allentown, Pennsylvania, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud. His Web site at <http://www.quackwatch.com> has additional information about fad diseases.

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ease; and (8) calcium consumption by adults and adolescents increases bone density and may decrease the risk of fractures. Although some of these nutrients may help prevent disease, the proposed claims were either false, simplistic, or too broad. The FDA Modernization Act requires that health claims be based on authoritative government agency statements and enable the public to understand the nutrient's significance in the context of a total daily diet. The FDA apparently concluded that the claims lacked sufficient authoritative support because they were based on research that was preliminary rather than conclusive.

DHEA MAY INCREASE CANCER RISK

Marshall Goldberg, MD, an endocrinologist and medical researcher at Jefferson Medical College in Philadelphia, says that the popular hormone supplement DHEA may increase the risk of prostate cancer. Researchers at McGill University in Montreal reported earlier this year that men with elevated levels of IGF-1 were 4½ times more likely to develop prostate cancer than men with lower levels. (IGF is a growth factor that helps to regulate cell turnover.) Dr. Goldberg has studied the effect of DHEA on his patients for nearly 10 years and says that doses as small as 25 mg. per day can raise IGF-1 levels significantly.

GINKGO REPORT

The *Medical Letter* has concluded: Extracts of Ginkgo biloba might improve mental function with some patients with dementia, but available data suggest that the benefits, if any, are modest. In a German postmarketing surveillance study, the drug appeared to be safe, but serious bleeding has been reported. . . . The purity and potency of ginkgo extracts sold in the USA are unknown (*Medical Letter* 40:63-64, 1998).

NHLBI ISSUES STATEMENT ON SODIUM AND HYPERTENSION

The controversy surrounding sodium's effect on blood pressure has raised questions among scientists and in the

media. In response, the National Heart, Lung, and Blood Institute (NHLBI) issued a statement announcing an upcoming workshop to review the latest findings on sodium and hypertension and to determine future research needs. The NHLBI continues to support the recommendation of various health organizations that sodium intake should be limited to 2,400 mg. a day. More information about high blood pressure can be found at <http://www.nhlbi.nih.gov/nhlbi/>

FDA INFO ON DIETARY SUPPLEMENTS

The September-October issue of *FDA Consumer Magazine* contained an article entitled "An FDA Guide to Dietary Supplements" as well as a list of dietary supplements, which have been associated with illnesses and injuries. The magazine is available on the Internet, and the article can be read at http://www.fda.gov/fdac/features/1998/598_guid/html

FOOD CONTAMINANTS IN JUICES AND ALFALFA SPROUTS

The FDA has issued warnings about potentially dangerous food contaminants in fruit and vegetable juices and in raw alfalfa sprouts. Designed to alert the public about the risk of microbial contamination in untreated juices, warning statements are now required at places where unprocessed fruit and vegetable juices are sold. It is estimated that untreated juices cause 16,000 to 48,000 cases of foodborne illness each year. In addition, the FDA has issued an interim advisory that people who are at high risk for foodborne illness should avoid eating raw alfalfa sprouts. Three salmonella and E. coli outbreaks occurred in California recently and 60 people were affected. The International Sprout Growers Association is taking steps to address the problem by pursuing ways to treat seeds before germination and growth. Those at high risk for foodborne illnesses include children, the elderly, and people with compromised immune systems.

NEJM CALLS FOR TESTING OF HERBS

In an editorial in the September 17, 1998, issue of the *New England Journal of Medicine* (NEJM 339:839-841,

1998), Drs. Marcia Angell and Jerome Kassirer call for rigorous scientific testing of alternative treatments, particularly herbal therapies. They state, "There cannot be two kinds of medicine—conventional and alternative. There is only medicine that has been adequately tested and medicine that has not, medicine that works and medicine that may or may not work." The issue carried several reports on the risks involved with using herbal remedies. The editorial can be found on the *NEJM* Web site at <http://www.nejm.org>

FEDERAL OBESITY GUIDELINES

The National Heart, Lung, and Blood Institute (NHLBI) has published guidelines for assessing overweight and obesity and principles for safe and effective weight loss. The guidelines recommend basing assessments on body mass index (BMI), waist circumference, and risk factors for obesity-related diseases. About 97 million Americans (55% of the adult population) fit the report's criteria for overweight or obesity. The 228-page report, titled "Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults" can be obtained by contacting NHLBIIC@dgsys.com or visiting its Web site <http://www.nhlbi.nih.gov/nhlbi/nhlbi.htm>

FOOD SAFETY COUNCIL CREATED

On August 25, President Clinton issued an executive order establishing an eight-member President's Council on Food Safety (Federal Register 63:45661-45662, 1998). The Council's mission is to develop a comprehensive plan "to improve the safety of the food supply through science-based regulation and well-coordinated inspection, enforcement, research, and education programs." The members include the Secretaries of Agriculture, Commerce, and Health and Human Services; the Director of the Office of Management and Budget; the Administrator of the Environmental Protection Agency; the Assistant to the President for Domestic Policy; the Director of the National Partnership for Reinventing Government; and the Assistant to the President for Science and Technology/Director of the Office of Science and Technology Policy.

NEW WARNING LABELS

New FDA regulations require unpasteurized apple cider products to carry a warning stating "This product may contain harmful bacteria that can cause serious illness in children, the elderly, and persons with weakened immune systems." All other unprocessed packaged fruit and vegetable juices must carry a warning label or sign, but by the fall of 1999, labels will be required.

LOS ANGELES FLUORIDATES

Los Angeles, which for decades has been the only large American city without fluoridation, has begun to fluoridate its water. Fluoridation for approximately 80% of the city's 3.6 million residents was initiated on September 23. The rest will receive it next year when additional facilities are built.

REGULATORY ACTION AGAINST TAHITIAN NONI

On August 26, 1998, the Attorneys General of Arizona, California, New Jersey, and Texas announced a multistate settlement with Morinda, Inc., a multilevel company headquartered in Linden, Utah. The AGs had charged that Morinda had made unsubstantiated claims in con-

sumer testimonials and other promotional material that its "Tahitian Noni" juice could treat, cure, or prevent diabetes, depression, hemorrhoids, arthritis, and many other diseases and conditions. In a consent agreement, Morinda agreed to pay \$100,000 in investigative costs, to issue refunds on request, and to refrain from making claims that Noni can cure, treat, or prevent any disease unless the claims are substantiated and the product is approved and cleared for those uses by the FDA.

FAT ADDED TO COOKIES

Faced with sagging sales, Nabisco has reformulated its nonfat SnackWell line by adding fat. One advertising strategy, based on survey and focus group data, will be to link the new taste with self-fulfillment, self-worth, and feeling good. According to *Promo* magazine, one ad will state that "snacking shouldn't be just about feeding yourself, but, in some small way, about feeding your self-esteem."

ONE-A-DAY HERBAL PRODUCTS

Bayer Corporation's Consumer Care Division has become the first major over-the-counter drug manufacturer to introduce a line of herbal formulas in the

United States. Its new One-A-Day Specialized Supplements are "Cold Season," "Energy," "Bone Strength," "Tension & Mood," "Memory and Concentration," "Cholesterol Health," "Menopause Health," and "Prostate Health." The products include herbs, vitamins, and minerals allegedly blended to address common health problems. However, many of the ingredients have no proven value for the usage implied by their product name. American Home Products has announced that it will add six herbal products to its popular Centrum line.

NEW EFFORTS AGAINST TELE-MARKETING FRAUD

More than 80 members of the American Association of Retired Persons (AARP) joined telephone company and law-enforcement officials in educating 3,100 consumers about fraudulent telemarketing tactics. The phone numbers of the people called were obtained from lists used by fraudulent telemarketers. AARP is also promoting model legislation to require telemarketers to be registered and bonded and to prohibit pickups of money by couriers, a procedure intended to bypass postal laws. Several states have passed laws of this type. **NF**

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Book Reviews

Analysis and Ratings

How accurate and useful is the nutrition information in that book? Would a reputable reviewer recommend the book to professionals and consumers? These are the two questions that Nutrition Forum book reviews are intended to answer. So the reviews not only offer analyses but also rate each book as either RECOMMENDED, NOT RECOMMENDED, or RECOMMENDED WITH RESERVATIONS, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

'Myth-Information' Detector

Beth Fontenot, MS, RD

Fad-Free Nutrition by Fredrick J. Stare, MD, and Elizabeth Whelan, ScD, MPH (Alameda, CA: Hunter House Publishers, 1998), 302 pp., \$24.95 hard cover, \$14.95 paperback. ISBN 0-89793-237-4.

Whether you are a health professional trying to keep up with the latest developments in nutrition or you are a consumer needing to sort out nutrition facts from myths, *Fad-Free Nutrition* deserves a place on your bookshelf. The authors address a variety of nutrition topics including dietary supplements, food myths, weight loss quackery, fat substitutes, nutrition and disease states, and irradiation of food. Each topic is put in proper per-

spective with a discussion of the relevant scientific facts. The last chapter of the book explains how to assess nutrition information and describes the elements of a legitimate scientific study.

Included in this volume are reviews of several popular nutrition and weight-loss books. These reviews provide the reader with an excellent overview of the nutrition "myth-information" (authors' term) that consumers confront every day.

Written from a scientific perspective yet in simple and clear language with an occasional touch of humor, the book is good reading for both lay and professional readers. It would make a good adjunct to a nutrition text for a university-level nutrition course.

RECOMMENDED

Anticancer Eating

Laurel Klayman, RD, LD

A Perfect 10: Phyto "New-trients" Against Cancers by Laura Pawlak (Biomed General Corp., 1998), 241 pp., \$25 softcover (available only from Biomed, [510] 450-1650).

This book is about preventing cancer through a diet rich in plant chemicals (what the author calls "phyto-newtrients"). There has been an explosion of recent scientific evidence uncovering the presence of hundreds of such potentially healthful substances. The author, who is a registered dietitian with a doctorate in biochemistry, calls this burgeoning field "New-trition." She explains that the development of cancer is a multistep process and that there are phyto-newtrients that can act as "missiles, speed-bumps, and imposters" to interfere with the steps that lead to cancer.

The main message then is anything

but new or radical: eat more fruits, vegetables, grains, and legumes to decrease the risk of cancer and other chronic diseases. But the author is a cheerleader for the message, and her motivational style is likely to encourage many to, at the very least, eat more vegetables. The author's enthusiasm, however, can also be a drawback when it gives the impression that following the recommendations in the book can guarantee a cancer-free life. People need to keep in mind that there is still much for scientists to learn about nutrition and cancer prevention.

The recommendations in the book are not advocated as a treatment for already existing cancer. Also, supposing that some readers might be inclined to circumvent healthy eating by taking pills, the author repeatedly points out the reasons why foods are better sources for most nutrients than supplements are.

Ten foods are highlighted in a "starter plan." Each of the ten has a "runner-up" in case the reader dislikes one of the ten. The idea is to make it easy for anyone to incorporate more plant foods into his or her diet.

Unfortunately, flax oil and green tea are included in the starter plan. It is premature to recommend consumption of these for cancer prevention. Though neither are likely to be harmful in the amounts recommended (except to the pocketbook—a bottle of flax oil in some health-food stores is \$12), a more prudent course of action would be to await further study to confirm their efficacy.

A Perfect 10 includes an extensive bibliography of well-respected journals and newsletters. The book might be of particular interest to someone who wants to take a proactive role in prevention. **NF**

RECOMMENDED WITH RESERVATIONS

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NIH-ODS AWARDS GRANTS TO STUDY SUPPLEMENTS

The National Institutes of Health's Office of Dietary Supplements (NIH-ODS) has announced that it will fund four new research projects that will examine dietary supplements and their potential role in health promotion and disease prevention. The four studies are: (1) A project at Brown University to evaluate the possible relationship between low dietary intake of the amino acid tryptophan, a precursor of serotonin, and the susceptibility to problems associated with alcohol abuse in a tribe of rural Native Americans, (2) a study conducted at the Harvard University School of Dental Medicine on the relationship between poor dental health and heart disease, the hypothesis being that poor dentition may lead to a decreased intake of fiber and phytochemicals which may be important in heart health, (3) a study at Florida State University to examine the actions of zinc and copper and their relationship to neuropathologic diseases of aging such as Alzheimer's disease and stroke, and (4) a project at the Baylor College of Medicine in Houston, TX, to study the role of metallothionein, an enzyme that regulates zinc levels in body tissues.

ST. JOHN'S WORT QUESTIONED

A study commissioned by the *Los Angeles Times* found that out of ten brands of St. John's Wort examined, three products had about half the potency shown on the label, and four products had less than 90 percent of the potency shown on the label. The study examined 10 pills from each of three containers of one lot of each of 10 products. Identified by only a code, the brand names were unknown to the laboratory. Five independent experts reviewed the research procedures and found the study to be sound.

CONFERENCE ON ZINC

The Office of Dietary Supplements (ODS) at the National Institutes of Health (NIH) recently held a conference entitled

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Debunking the Detoxification Theory

Truth over toxicity

by Therese Walsh

Detoxification is an amazingly popular health fad. There are books written about it, seminars given on it, centers dedicated to it, and an overwhelming amount of information about it on the Internet. It's based on the notion that we take in so many toxic substances through food, drink, and air that our bodies become toxic, and the only road to true health is through banishing these poisons. Curiously, the poisons have yet to be identified. But this has not stopped people from creating and promoting programs to get rid of the invisible toxins. Here's how proponents say that the unidentified and invisible can be eliminated.

Fasting

The idea that fasting can cleanse your body of toxins is thousands of years old. Current-day detoxifiers rarely advocate a true fast (no food or liquid) for any length of time because it can quickly become life-threatening. Most recommend a water or juice fast, or a modified food fast including only some fruits, vegetables, juices, and teas. Some, like the detoxification guru Elson M. Haas, MD, author of the book *Detox Diet: A How-To Guide for Cleansing the Body of Toxic Substances*, recommend drinking 8-12 glasses a day of a concoction of maple syrup, lemon juice, and water for the duration of the fast.

Fasts can last anywhere from a few

days to weeks. Detox proponents, including Haas, often advocate one or more weeks, though medical professionals say that long-term fasting (more than a few days) can be dangerous because that's when the body begins, essentially, to "eat itself." Zealots have even suggested that short-term fasting is safe for those with kidney failure, liver disease, pregnant/nursing women, and even infants.

Proponents claim that fasting allows the body, especially the liver, to "rest," shifting its emphasis from dealing with daily toxic intake to cleaning up past toxic "stores" that will eventually cause illness. Unfortunately, the body doesn't

know the difference between "fasting" and "starving." The body is never at rest during a fast, but works feverishly to prevent starvation and death.

The liver is especially taxed during a fast, converting fat into energy for the body to use.

And during a lengthy fast, the liver is working overtime dealing with dangerous by-products from muscle and tissue breakdown as the body searches for protein stores.

According to Haas, fasting also "increases the process of elimination and the release of toxins from the colon, kidneys and bladder, lungs and sinuses, and skin." This toxic download is supposed to be so powerful that it can cure and prevent illness as well as forestall the aging process. Some medical conditions that might sig-

Curiously, the poisons [of detox theory] have yet to be identified.

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nal the need for a detoxifying fast, according to Haas and others, are frequent headaches, coronary artery disease, diabetes, and mental illness. Ironically, fasting actually can exacerbate or cause these health problems. Fasting often results in headaches or depression; cardiac problems can arise; and glucose regulation for the diabetic will be difficult or impossible and perhaps even life-threatening.

Haas and others argue that one of the greatest contributions of the fast is that it can prevent serious illness such as cancer by cleansing the body of poisons before they have the opportunity to do damage. This is, of course, wishful thinking and completely without scientific basis.

People who fast commonly experience irritability, nausea, weakness, headaches, and lightheadedness. (One fasting enthusiast claimed that you should not feel hungry, "but may feel a desire to have food in your mouth.") Some experience nightmares, low blood pressure, fainting, and vomiting. Detoxification advocates claim that these negative symptoms are a sign that poisons are being released into the bloodstream. The real causes of these symptoms, however, are well understood. Lightheadedness, for example, is caused by decreased blood flow to the brain, and nausea can be caused by hunger or fasting-induced hormonal changes.

Haas and others speak of fasting as an opportunity for enlightenment, claiming that it brings about more emotional and mental clarity. But studies have shown that cognitive abilities decrease during a period of fast.

'Internal Cleansing'

The notion that putrefaction of the stool causes disease dates back to ancient Egypt. The belief was that fecal matter would be absorbed into the body, thereby poisoning it and causing illness. (As with fasting, the invasive poisons are never identified or measured.) This idea has

long since been disproved. But some fanatics persist, claiming that a "slow" or "unclean" colon will cause everything from a cold to coronary artery disease. In fact, many claim that 90-99% of all illness begins in the colon.

Colon zealots insist that we need to excrete as often as we intake—at least three times a day for most people. They claim that defecating less often than that will result in "ancient meals encrusted on your colon walls," poisoning the body and preventing nutrients from being absorbed. The longer these meals are allowed to accumulate, the more likely they are to cause illness, so they must be cleaned away regularly.

These claims are bogus, with no scientific basis whatever. With today's technology, we can see inside the colon, and no such toxic buildup has ever been documented.

People who buy into these claims soon find themselves in a world of enemas, colonic irrigation, and "high colonics," on a quest to remove the "ancient meals" or forestall any new toxic buildup. Some proponents even claim that the intestines are filled with parasites that should be flushed from the body. While an enema irrigates only the rectum with a small amount of water, a colonic flushes the colon with many pints via a tube inserted into the rectum. A "high colonic" is even more extreme, flooding the colon with 20 or more gallons of water and usually via machine.

Throughout detoxification Elson Haas recommends enemas every other day and a colonic as often as three times. This sort of behavior is completely unnecessary and is possibly dangerous. Colonic irrigation is not well regulated—anyone can market the procedure. Pain, severe cramping, infection, perforated bowels, heart failure, and even death have been reported due to colonics. Neither enemas nor colonics "detoxify" the body, and they are not needed to maintain health.

With today's technology, we can see inside the colon, and no such toxic buildup has ever been documented.

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Nutrition and Fibrocystic Breast Disease

Is there a connection?

by Beth Fontenot, MS, RD

Women diagnosed with fibrocystic breast disease (FBD) and experiencing its uncomfortable symptoms may find themselves bombarded with all manner of nutritional advice: No coffee. No cola. No chocolate. Take evening primrose oil. Take flaxseed oil. Take vitamin E. Take vitamin A. Don't take vitamin A. Drink an herbal tea. Avoid herbal teas. Take natural hormones. Limit fat and sodium. Take iodine. Take vitamin B₆. Eat raw foods. Try some coenzyme Q10. Rub evening primrose oil on your breasts! What's a woman to believe?

FBD is essentially the presence of benign breast lumps (cysts). They can often be felt in the breast and can fluctuate with the menstrual cycle. The condition may become progressively worse until menopause. Pain and swelling are the most common complaints, and the discomfort increases as menstruation approaches. The symptoms usually subside once menstruation begins. It is estimated that 30% of American women have FBD. Relatively few women with FBD develop breast cancer.

The cause of FBD is unknown but is believed to be related to hormonal stimulation. In particular, excessive amounts of estrogen, the main female hormone, and prolactin, the milk-release hormone, have been implicated. Dietary factors have also been traditionally thought to be a factor. The most common advice given to women is to avoid caffeine and to take supplemental vitamin E.

Is E the Key?

Early research on the effectiveness of vitamin E against FBD seemed promising, but clinical trials in the past few years have not backed up the original optimism. In the 1960s a study published in the *New England Journal of Medicine* (272:1080-

1081) suggested that vitamin E was beneficial in the treatment of FBD, and studies that followed appeared to confirm that belief. However, since then several better-designed studies have cast doubt on vitamin E's ability to provide relief for women with FBD.

In a double-blind, randomized, placebo-controlled trial of 128 women, published in 1985, researchers concluded that vitamin E had no effect on FBD (*Obstet Gynecol* 1985 Jan; 65[1]:104-106). Later that year, another study of 73 women confirmed those findings (*Surgery* 1985 Apr; 97[4]:490-494). More recently, a double-blind, placebo-controlled crossover study of 105 randomly selected patients with FBD also indicated that vitamin E was not beneficial in the treatment of FBD (*Surgery* 1990 May; 107[5]:549-551).

Despite these findings, vitamin E is still commonly recommended for treating FBD. Some health professionals recommend doses as high as 1,500 IU a day. But at high doses, vitamin E can interfere with blood clotting. This could increase the risk of excessive bleeding and could be especially dangerous in people who are taking anticoagulant drugs or herbs that act as a blood thinner (like Ginkgo biloba).

Some women with FBD do report favorable results when taking vitamin E. But in the studies cited above, many who took a placebo also reported favorable results. The bottom line? It is unlikely that vitamin E is an effective treatment for FBD.

Caffeine and More

Avoiding caffeine or, more specifically, foods containing methylxanthines also seems to be standard advice for a woman with FBD. (Methylxanthine-containing

[continued on page 4]

WEB WATCH

This month's ratings are by Stephen Barrett, M.D., board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web. He also operates Chirobase (<http://www.chirobase.org>), a new site devoted to chiropractic history, theories, and current practices.

BEST

The USDA Food and Nutrition Information Center offers comprehensive information about the Food Guide Pyramid at <http://www.nal.usda.gov/fnic/fpyr/pyramid.html>

For information on health claims allowed on food labels, check out <http://vm.cfsan.fda.gov/~dms/fdhlcm.html>

WORST

Wilson Syndrome Foundation (<http://www.wilsonssyndrome.com>) elaborates the notions of E. Denis Wilson, M.D., originator of "Wilson's Syndrome" (see NF 15:45, 1998).

Dynamite Marketing (<http://www.dynamitemarketing.com>) develops and formulates vitamin and mineral products for horses, dogs, cats, and humans. The claims made for animal products are similar to those that the health-food industry makes for humans.

Rita Newman, RNC (<http://alt.medmarket.com/members/analyze/analyze.html>), offers "a comprehensive symptomatology questionnaire that detects your body's actual symptoms—subtle warning signs of nutritional deficiencies and other health imbalances which may have evolved over many weeks or years."

World Association of Universities and Colleges (<http://www.web-hed.com/wauc/>) is an "accreditation" agency that is not recognized by the U.S. Secretary of Education. Two of its clients offer various nutrition-related "credentials" through home study: Clayton College of Natural Health (Birmingham, Alabama, <http://www.ccnh.edu/>) and Columbus University (Metairie, Indiana, <http://www.columbusu.com/>).

The New Hope Clinic, in Tijuana, Mexico (<http://newhopeclinic.com/>) offers BioResonance Tumor Therapy for cancer and training to become a "certified" therapist." Its treatment is claimed to cure cancer by "reactivating" a suppressed gene.

World Health Products (<http://www.worldhealthproductsinc.com>) distributes various "alternatif" products, including a disc claimed to reshape the body when passed over it.

[continued from page 2]

Herbal Remedies and More

Multilevel marketers have found their detoxification niche with herbal remedies, claiming their own special brand of magic for clearing out the poisons coursing through our bodies. Some claim that their herbal formulas can fight mold and expel worms from the intestines. Fasting folks can pop a few pills with their juice to add a new dimension of clean ("Milk Thistle Complex" and "Liver Complex," for example). To prevent a colon layered with decade-old waste, people can try other pills, like "Colon Helper," "UnDo," and "Ultra Flush Internal Cleanser." Companies that are touting these kinds of herbal potions include AIM, Beneficial International, Inc., and Ancient Power Inc.

In reality, many of the herbal supplements contain cascara sagrada, a powerful herbal laxative that should not be used regularly. Its laxative effect is so intense that nerve cells in the colon can be damaged, resulting in a dulled urge to defecate and leading to constipation and dependence.

Elson Haas has claimed that: elderberry detoxifies the blood, sarsaparilla root detoxifies the lymph system, Oregon grape root detoxifies the skin, goldenseal root detoxifies the kidney, and black walnut hulls remove parasites from the intestinal tract. These vague claims are undefined, untested, unsubstantiated, and unbelievable.

Other Odd Claims

According to detoxification advocates, there are a few other ways to rid yourself of "toxins." You can sweat them out through exercise, scrape them off your skin with a brush, wash them off your skin in the bath (pure water only), and even bounce them out on a mini-trampoline!

Haas believes that "niacin-sauna" therapy shows promise. It entails taking mega-doses of niacin up to 2-3 grams a day while sweating out "toxins" in a sauna. This level of niacin could be valuable for cholesterol control. However, it can cause nausea, flushing and burning of the skin, and liver dysfunction and should

not be taken without the guidance of a physician.

It's unfortunate that some detoxification zealots promote its use for cancer patients. There is even a report of a center in Tijuana, Mexico, supported by U.S. promoters, that treats cancer patients with detoxification therapy in lieu of real medical treatment. Some in the United States, like Rich Anderson, author of the book *Cleanse and Purify Thyself: The Clean-Me-Out Program—A Method of Self-Healing*, tiptoe around the cancer claim while making their intent perfectly clear: "The medical world claims no cure for cancer and, what's more, no one else (does) either. It's against the law—even for those who know the cure. Therefore, I hereby announce that I do not claim the 'clean-me-out-program' will cure cancer. Should you find your cancer disappearing when you use this system, I will not accept responsibility." And neither will he accept responsibility when it doesn't work. **NF**

Therese Walsh is a freelance health journalist in Binghamton, NY.

[continued from page 3]

foods include coffee, tea, caffeinated soft drinks, and chocolate.) This advice was apparently based on one uncontrolled clinical study. According to several more recent studies, however, caffeine may not be the culprit after all.

A case-control dietary study published in the late 1970s included 854 women diagnosed with FBD. The researchers found no association between coffee or methylxanthine consumption and FBD (*JAMA* 1985 Apr 26; 253[16]: 2388-2392). At least two subsequent studies agreed with these findings (*Surgery* 1986 May;99[5]:576-581; *Surgery* 1987 Jun;101[6]:720-730). So the best available evidence suggests that cutting out caffeine won't help with FBD.

Vitamin A has also been suggested as a treatment for FBD. In a single study, 12 women who were treated with 150,000 IU of vitamin A daily for three months showed improvement in symptoms, leading the researchers to conclude that vita-

min A may be effective for FBD (*Prev Med* 1984 Sept;13[5]:549-554). But the study was too small to support any such conclusion. In addition, that amount of vitamin A is 30 times the Daily Value, and women of childbearing age should limit their intake of vitamin A to 100% of the Daily Value or about 5,000 IU due to the potential for birth defects.

Evening primrose oil has received some attention as an FBD treatment. A British study of 200 women was conducted to evaluate its effectiveness. This randomized, double-blind trial showed a slightly lower—but not significant—incidence of cyst formation in the group given evening primrose oil (*Ann NY Acad Sci* 1990;586:288-294). Other studies are needed before we can conclude that evening primrose is any help.

Some believe that a low-fat diet may help to prevent or treat FBD. Studies indicate that the risk of developing FBD rises with an increased intake of fats, particularly saturated fats. When dietary fat is reduced to 20% of calories, blood levels of

the female hormones estrogen and prolactin also decrease. A reduction in these hormones is linked to a decreased risk of developing cancer, but the relationship to FBD is not certain.

While there is much published research and an abundance of anecdotal evidence, there seems to be little solid information about the relationship between diet and FBD.

There is no scientific evidence that any dietary manipulation or supplementation is effective as a preventive or treatment for FBD. Until more is known, it seems prudent for women with FBD to follow a low-fat, nutrient-dense diet. **NF**

Beth Fontenot is a freelance nutrition writer and the Nutrition Coordinator on the faculty of the Louisiana State University Medical Center-Shreveport Family Practice Residency Program at Lake Charles Memorial Hospital in Lake Charles, LA.

The Herbal Minefield

What we don't know is scary

by Stephen Barrett, MD

In 1997, health-food-store patrons spent over a billion dollars for capsules, tablets, bulk herbs, and herbal teas. Although many of these items are consumed for their flavor, most are probably used for supposed medicinal qualities. Sales by multilevel distributors and pharmacies amount to hundreds of millions more for products that are obviously intended for self-medication. Herbs are also marketed by naturopaths, acupuncturists, iridologists, chiropractors, and unlicensed herbalists, many of whom prescribe them for the entire gamut of health problems. Many such practitioners are not qualified to make appropriate medical diagnoses or to determine how the products they prescribe compare to proven drugs.

Herbal advocates like to point out that about half of today's medicines were derived from plants. (Digitalis, for example, was originally derived from leaves of the foxglove plant.) This statement is true but misleading. Drug products contain specified amounts of active ingredients. Herbs in their natural state can vary greatly from batch to batch and often contain chemicals that cause side effects but provide no benefit.

When potent natural substances are discovered, drug companies try to isolate and synthesize the active chemical in order to provide a reliable supply. They also attempt to make derivatives that are more potent, more predictable, and have fewer side effects. In the case of digitalis, derivatives provide a spectrum of speed and duration of action. Digitalis leaf is almost never used today because its effects are less predictable. Many herbs contain hundreds or even thousands of chemicals that have not been completely catalogued. Some of these chemicals may turn out to


be useful as therapeutic agents, but others could well prove toxic.

In the United States, herbs intended for preventive or therapeutic use would be regulated as drugs under federal laws. To evade the law, these products are marketed as "foods" or "dietary supplements" without health claims on their labels. Since herbs are not regulated as drugs, no legal standards exist for their processing, harvesting, or packaging. In many cases, particularly for products with expensive raw ingredients, contents and potency are not accurately disclosed on the label.

Many products marked as herbs contain no useful ingredients, and some even lack the principal ingredient for which people buy them. Some manufacturers are trying to develop industry-wide quality-assurance standards, but possible solutions are a long way off.

The Dietary Supplement Health and Education Act of 1994 included herbal products in its definition of "dietary supplements," even though herbs have little or no nutritional value. (The bill was spearheaded by the health-food industry in order to weaken FDA regulation of its products.) Herbal or other botanical ingredients include processed or unprocessed plant parts (bark, leaves, flowers, fruits, and stems) as well as extracts and essential oils. They are available as teas, powders, tablets, capsules, and elixirs, and may be marketed as single substances or combined with other herbs, vitamins, minerals, amino acids, or nonnutrient ingredients. The fact that an herb is known to be toxic does not ensure its removal from the marketplace. When the FDA concludes that an herb is dangerous, it usually issues a warning rather than a ban.

To make a rational decision about an


The fact that an herb is known to be toxic does not ensure its removal from the marketplace.

herbal product, it would be necessary to know what it contains, whether it is safe, and whether it has been demonstrated to be as good or better than pharmaceutical products available for the same purpose. For most herbal products this information is incomplete or unavailable. Even worse, most published information about herbs is unreliable. Varro E. Tyler, Ph.D., former dean of the Purdue University School of Pharmacy and a leading authority on pharmacognosy (the science of medicines from natural sources), has observed:

More misinformation about the safety and efficacy of herbs is reaching the public currently than at any previous time, including the turn-of-the-century heyday of patent medicines. The literature promoting herbs includes pamphlets, magazine articles, and books ranging in quality from cheaply printed flyers to elaborately produced studies in fine bindings with attractive illustrations. Practically all of these writings recommend large numbers of herbs for treatment based on hearsay, folklore, and tradition. The only criterion that seems to be avoided in these publications is scientific evidence. Some writings are so comprehensive and indiscriminate that they seem to recommend everything for anything. Even deadly poisonous herbs are sometimes touted as remedies, based on some outdated report or a misunderstanding of the facts. Particularly insidious is the myth that there is something almost magical about herbal drugs that prevents them, in their natural state, from harming people.

Two of Tyler's books (*The Honest Herbal* and *Herbs of Choice*) summarize what is known about many commonly used herbs. However, with safe and effective medicines available, treatment with herbs rarely makes sense, and many of the conditions for which herbs are recommended are not suitable for self-treatment. The recent entry of drug companies into the herbal marketplace may lead to standardization, but the best strategy for the consumer is still caveat emptor. **NF**

Dr. Barrett, a retired psychiatrist, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud.

[continued from page 1]

"Zinc: What Role Might Supplements Play." Leading experts in zinc research spoke at the conference on the current state of knowledge regarding zinc nutrition and on potential roles for zinc supplements. Based on data from the National Health and Nutrition Examination Study (NHANES III), only about half of Americans receive an "adequate" amount of zinc, reported Ronette Briefel of the National Center for Health Statistics. While many nutrition experts believe that Americans may not be getting enough zinc in their diets, estimates of daily zinc requirements cannot be made until further studies are conducted.

LACK OF NUTRACEUTICAL REGULATION

Speakers at the 10th Nutraceutical Conference in New York concluded that more regulation of the nutraceutical industry is needed due to an increased demand by consumers for nutritional and botanical products. Stephen L. DeFelice, chairman of the Foundation for Innovation in Medicine (FIM), sponsor of the event, told the conference attendees, "The consumer demand for nutraceuticals is way ahead of regulations and way ahead of doctors' awareness of these products." Dr. Felice noted that about one-third of Americans currently take vitamin E, about 100 million take dietary supplements, and 60 million take herbal remedies and botanicals. He expressed concern that these supplements may increase the toxicity of prescription drugs or interfere with the efficacy of prescription drugs taken by consumers. Dr. Felice encouraged Congress to enact the Nutraceutical Research & Education Act (NREA) to expedite the establishment of a research-oriented nutraceutical industry.

FTC CREATES GUIDE FOR SUPPLEMENT ADVERTISERS

The Federal Trade Commission (FTC) has created a guide to help dietary supplement manufacturers ensure that their ads are truthful. The guide describes the basic principles of the law and addresses such

products as vitamins, minerals, herbs, hormones, and amino acids. "A Guide for the Dietary Supplement Industry" is available online at <http://www.ftc.gov/opa/1998/9811/dietary.htm>.

SOY PROTEIN RULE PROPOSED

The FDA is proposing to permit soy products to be marketed with claims that soy protein included in a diet low in fat may reduce the risk of coronary heart disease (Federal Register 63:62977-63015, 1998). Based on a review of approximately 40 studies, the agency tentatively concluded that a minimum level of approximately 25g of soy protein per day can have a clinically significant effect on total and LDL-cholesterol levels without lowering HDL-cholesterol levels. The *New England Journal of Medicine* published a meta-analysis with similar conclusions in 1995 (333:276-282). The full text of the proposed FDA rule is available online at <http://www.fda.gov/ohrms/dockets/98fr/111098a.txt>.

FRAUDULENT LABELING UNCOVERED

Weider Nutrition Group, which markets many products for athletes, has settled a class-action lawsuit alleging that the company misrepresented the fat, sodium, vitamin, and mineral content of several "Steel Bar" nutrition products that it distributed. The suit charged, for example, that in 1995, coconut bar labels stated that the product contained 4 grams of fat, even though the company knew that independent laboratory tests had found four times that amount. The settlement called for buyers to receive \$1 for every bar purchased between December 20, 1994 and April 24, 1998, with an individual maximum of \$5 and a collective maximum of \$750,000.

ANTIOXIDANT DRI PROPOSAL ANNOUNCED

The Institution of Medicine has proposed a definition and will consider establishing antioxidant-related Dietary Reference Intakes for beta-carotene, other carotenoids, vitamin C, vitamin E,

and selenium. The proposal can be accessed at <http://www.nap.edu> by searching the National Academy Press's "Reading Room" for "antioxidants."

GARCINIA CAMBOGIA INEFFECTIVE

A study has found that taking 1,500 mg/day of hydroxycitric acid (the active ingredient in the herbal compound *Garcinia cambogia*) did not produce significant weight or fat loss beyond that observed with placebo. The study followed 135 obese participants, 84 of whom completed 12 weeks of treatment. All followed a low-calorie, high-fiber diet and lost a significant amount of weight. However, the hydroxycitric acid group did no better than the placebo group (*JAMA* 1998;280:1596-1600).

SAW PALMETTO DESERVES FURTHER STUDY

A meta-analysis has examined whether saw palmetto extract may be helpful for men with symptomatic benign prostatic hyperplasia (BPH). The authors evaluated 18 randomized controlled trials involving 2,939 patients. The studies were mostly short-term and varied considerably in design, products used, and reports of outcomes. The authors concluded that further research should be done with standardized preparations to determine long-term effectiveness and ability to prevent BPH complications (*JAMA* 1998;280:1604-1609).

CHILD NUTRITION GUIDE

The American Council on Science and Health has published a 46-page booklet, *Growing Healthy Kids: A Parents' Guide to Infant and Child Nutrition*. The booklet can be read online (<http://www.csh.org>) or ordered for \$5 from the council at 1995 Broadway, 2nd Floor, New York, NY 10023.

FDA POLICY UPHELD

The U.S. Supreme Court has rejected an attack against the FDA's policy of requiring "significant scientific agreement" to substantiate health claims on supple-

ment labels. A suit challenging the FDA had been filed by the Nutritional Health Alliance, a group of manufacturers, retailers, and consumers. The lawsuit contended that the labeling restriction amounts to an unlawful prior restraint of truthful commercial speech. However, a federal judge in New York and the 2nd U.S. Circuit Court of Appeals had upheld the regulations.

BOGUS DEVICE OPERATOR ORDERED TO STOP

The attorney general of Minnesota has obtained a judgment against Shelvie Rettmann of Prior Lake, Minnesota, an unlicensed individual who falsely represented that she could cure cancer. Her ap-

proach included treatments with a Rife Frequency Generator, a special diet, dietary supplements, foot reflexology, and a regimen of baths. The Rife device is claimed to generate radio waves that shatter "cancer-causing bacteria." The judge prohibited Rettmann from providing health-care services or products, ordered refunds upon request to injured consumers, and imposed civil penalties of \$50,000 plus the state's attorney fees and costs. However, refunds are uncertain because Rettmann filed for bankruptcy.

COURT HALTS BREATHASURE CLAIMS

The Warner-Lambert Company, which manufactures Certs breath mints, Clorets

mints and gum, Dentyne gum, and Listerine antiseptic mouthwash, has obtained a federal court order to stop BreathASURE Inc., of Calabasas, California, from continuing to claim or imply that its internal breath freshener products, BreathASURE and BreathASURE-D, get rid of bad breath for hours and give users clean, fresh breath, even after they consume onions, garlic, or other foods containing aromatic substances. Warner-Lambert had charged that taking BreathASURE capsules with water is no more effective in fighting bad breath than drinking water alone. Following the court ruling, BreathASURE removed information about its products from its Web site (<http://www.breathasure.com>). **NF**

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Book Reviews

Analysis and Ratings

The following reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Reviews by Manfred Kroger, PHD

Alternative Nutrition?

The Complete Illustrated Guide to Nutritional Healing . . . The Use of Diet, Vitamins, Minerals, and Herbs for Optimum Health by Denise Mortimore (Boston, MA: Element Books Inc., 1998), 256 pp., \$24.95 paperback, ISBN 1-86204-176-8.

The author is a "nutritional therapist" who lectures, teaches adult education courses, and runs a "thriving business" in England. Organized "nutritional therapy" stands outside the traditional dietetic/nutritional/medical establishment. It is truly an alternative healing discipline, and the 90 sources listed under "Bibliography" and "Further Reading" point to that fact. The book is a mélange of discussions of human physiology (quite accurately depicted), human illnesses (relatively well described, but often with alleged causes not backed by science thrown in), food composition (according to standard compendia), herbalism (as dealt with by current and old herbals and herbalists), nutritional recommendations (heavily laced with claims based on unproven assumptions), and practical dietary advice with many recipes and food combinations (presumably developed by the author and gleaned from the literature such as the Feingold diet, detoxification diet, and hypoallergenic diet).

The book is extremely handsome: colorful, excitingly illustrated, well orga-

nized, and laid out for efficient perusal. But it is heavily tainted by the author's unwarranted fears of, among other things, processed foods, additives, nonorganically grown produce and animal products, environmental contaminants, and technology in general.

Furthermore, the author does not endorse the currently accepted Food Guide Pyramid promoted by nutrition professionals. Instead, she proposes her own "new pyramid" based on the three macronutrients. The authoritative tone in making recommendations is reminiscent of earlier discredited diet gurus.

This volume may be welcome by the nutritionally illiterate who want to be told exactly what to eat. But a critical reader will find it objectionable, mostly because of all the contradictions and the confusing, detailed dogma instead of clear and rational science. What looked so nice turned out to be so unpalatable in many parts.

NOT RECOMMENDED

Allergic Fantasies

Allergies: Your Guide to Complementary Therapies, Alternative Techniques, Conventional Treatments by Moira Crawford (Boston, MA: Element Books, Inc., 1997), 134 pp., \$5.95 paperback, ISBN 1-86204-114-8.

As with the other booklets in this series entitled "The Natural Way," the intent is obviously to promote and popularize "natural therapies." These alternative, and often old, therapies most certainly stand outside current medical practice. And scientific support. For allergies and intolerances, the following are recommended and described as major therapies: acupuncture, acupressure, shiatsu, Chinese herbal remedies, herbal medicines, homeopathy, hydrotherapy, osteopathy, cranial osteopathy/craniosacral therapy, massage, reflexology, aromatherapy, and buteyko (a method of breathing alleged to have been kept secret within the Soviet "evil empire" and only revealed after its demise).

Most of these therapies are aimed at stress relief since stress is one of the symptoms (as well as a causative agent) in this multifactorial and often complex condition called allergy. There is no ratio-

nal relationship or physicochemical mode of action to link specific allergies with the therapies and techniques touted in this booklet. The first 55 pages describe allergies adequately, how they affect people, and what the conventional treatments are. It's the second half of the book that has no scientific/rational basis and slips into fantasy, faith, and wishful thinking.

NOT RECOMMENDED

A Dangerous Way

Cancer: Your Guide to Complementary Therapies, Alternative Techniques, Conventional Treatments by Philip Baron (Rockport, MA: Element Books, Inc., 1998), 136 pp., \$5.95 paperback, ISBN 1-85230-799-4.

Another in the "Natural Way" series, this slender booklet steers the reader away from conventional mainstream medical practice. It is "approved by the British and American Holistic Medical Associations." It actually does a fairly good job in the first half explaining to the lay reader what cancer is and what the many causes may be. But even here, among the good, some outlandish statements appear. For example, to "eat against cancer" you must reduce sugar intake and eat organic foods as much as possible. Also, modern food-packaging materials are suspect and must be avoided.

The second half of the paperback is a subtle condemnation of modern medical practices in cancer treatment and a persistent argument for "natural approaches," namely, the "gentle alternatives" in cancer therapy. Many approaches are discussed, accompanied by the (false) claim that they are effective cancer fighters: acupuncture/acupressure, aromatherapy, Ayurvedic medicine, homeopathy, herbalism, massage, naturopathy/hydrotherapy, nutritional therapy, reflexology, yoga, tai chi, hypnotherapy, faith healing, meditation/relaxation, psychotherapy, visualization or imagery, counseling, and art, music, and drama therapies.

The information provided is largely promotional for the emerging profession of natural therapists and a broadside against science-based medical approaches in cancer research and treatment. **NF**

NOT RECOMMENDED

FTC ATTACKS**CHELATION THERAPY**

Chelation therapy is a series of intravenous administrations of an EDTA plus various other substances. Proponents claim that chelation can reverse atherosclerosis, is an effective alternative to bypass surgery, and works against many other diseases. EDTA chelation (using a different protocol) is useful in some cases of lead poisoning. However, there is no scientific evidence that chelation therapy modifies any disease process. The primary organization to which chelationists belong is the American College for Advancement in Medicine (ACAM), which was founded in 1973 as the Association for Chelation Therapists. In 1998, the FTC charged that ACAM's Web site and a brochure had made false or unsubstantiated claims that chelation therapy: (a) is a safe, effective, and relatively inexpensive treatment to restore blood flow in victims of atherosclerosis without surgery; (b) can reverse symptoms of hardening of the arteries; (c) promotes health by correcting the major underlying cause of arterial blockage; (d) improves blood flow throughout the entire vascular system; and (e) claims that "every single study of the use of chelation therapy for atherosclerosis which has ever been published, without exception, has described an improvement in blood flow and symptoms." In December 1998, the FTC announced that it had secured a consent agreement barring ACAM from making unsubstantiated advertising claims that chelation therapy was effective against atherosclerosis or any other disease of the circulatory system.

**IOC CONSIDERS
CREATINE A FOOD**

The International Olympic Committee (IOC) has decided that creatine will not be added to its banned-substance list. The head of the IOC medical commission, Prince Alexandre de Merode, said that creatine is considered a food, and it could not be compared to testosterone or anabolic steroids, so it should not be prohibited. Many National Olympic

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The Roaring Mouse

A tribute to the FTC

by Stephen Barrett, MD

The Federal Trade Commission, among its many functions, has primary jurisdiction over the advertising of foods, nonprescription drugs, cosmetics, devices, and services that are marketed in interstate commerce. It administers a powerful law and has been enforcing it vigorously during the past few years. In fact, it has addressed more health-related frauds during the past two years than in all previous years combined.

The FTC has broad powers to investigate complaints. If it concludes that the law has been violated, it may attempt to obtain voluntary compliance by entering into a consent order with the violator. Signers of a consent order need not admit that they have violated the law, but they must agree to stop the practices described in an accompanying complaint. If a consent agreement cannot be reached, the FTC may issue an administrative complaint that leads to an adjudication by an FTC Administrative Law Judge. If a problem is considered serious enough, the FTC can seek a federal court order (injunction) to stop the improper practices. In egregious fraud cases, it can ask the Justice Department to file criminal actions.

Cease-and-desist orders obtained by the FTC usually remain in effect for 20 years. The penalties for violating them can include prison sentences, corrective advertising, and fines of up to \$11,000 per day. FTC actions can also result in restitution to consumers and/or a disgorgement of profits. In cases where the offending party is willing to settle without a fight, the settlement is negotiated and the con-

sent agreement and complaint may be announced simultaneously. In fiscal year 1997, the FTC Consumer Protection Bureau announced 46 consent agreements, of which 31 were related to health claims (Table 1 gives several examples).

New Strategies

Although the FTC has a very effective law, it can take legal action against only a small percentage of the violations it detects. During the 1980s, it averaged about five health-related cases per year. After Bill Clinton took office, the number increased sharply. In June 1997, at a health-fraud conference cosponsored by the FTC, a staff attorney indicated that the agency's consumer-protection bureau had adopted new strategies for targeted enforcement actions, public education, and warnings to entrepreneurs.

Much of this activity involves the Internet. The FTC operates Consumer Sentinel, a computerized consumer-fraud database that provides secure online access to consumer complaints for over 150 law-enforcement organizations across the United States and Canada. The complaints concern telemarketing and direct-mail problems, as well as Internet fraud. The database contains over 200,000 complaints and is growing rapidly. In June 1998, the FTC announced that it had brought 35 Internet-related enforcement actions. The agency's online complaint form is at <http://www.ftc.gov/bcp/conline/fraud.htm>.

The FTC has actively sought Internet

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companies and trade groups to join as partners in disseminating consumer-protection information to consumers online. As a result, the Interactive Services Association, a leading online trade association, and companies such as AT&T, NetCom, America Online, Circuit City, Compaq, Micron, Borders, and American Express have helped circulate public-service announcements over the Internet, cautioning consumers to avoid particular scams and "hot linking" consumers to the commission's Web site where they can find "Cybershopping" guides, "safe surfing" tips, and other helpful information.

Another creative activity is the posting of "teaser sites" that mimic pyramid schemes, scholarship scams, deceptive travel programs, false weight-loss claims, and fraudulent vending opportunities—typical frauds that have been practiced on consumers through direct mail, telemarketing, and other means. The teaser sites are registered with major search engines so that they may be encountered by consumers about to become ensnared by plausible but untrue come-ons. Instead of being swindled, of course, visitors are warned about the deceptive nature of the scams.

Internet 'Surf Days'

Since December 1996, the FTC has conducted nine "Surf Days" aimed at providing information to entrepreneurs who may be violating the law. For the first, staff attorneys and investigators were joined by scores of others from federal, state, and local agencies. Over a three-hour period, this ad hoc task force located over 500 Web sites or newsgroup messages promoting apparent pyramid schemes. The FTC staff e-mailed a warning message to the individuals or companies that had posted these solicitations, explaining that pyramid schemes violate federal and state laws and providing a link back to the FTC Web site for more information. A month later, the investigative staff checked and found that a substantial number had disappeared or been improved.

In November 1997, the FTC conducted North American Health Claim Surf Day with help from other federal agencies, 18 state attorney general's offices, many nonprofit health organizations, and

consumer-protection and information agencies from the United States, Canada, and Mexico. The participants surfed the Internet for potentially false or deceptive advertising claims related to preventing or treating heart disease, cancer, AIDS, diabetes, arthritis, and multiple sclerosis, and sent hundreds of e-mail messages to Web site advertisers pointing out that they must have evidence to back up their claims. In November 1998, the process was repeated by an international coalition of 80 government and private agencies and organizations from 25 countries whose participants issued more than 1,200 warnings.

New Advertising Guidelines

The 1994 Dietary Supplement Health and Education Act (DSHEA) permits manufacturers to make "structure/function" claims as long as their products are not falsely promoted for cure, mitigation, treatment, or prevention of disease. Manufacturers have responded by making hundreds of questionable claims that they previously were afraid to make. In December 1998, the FTC issued *Dietary Supplements: An Advertising Guide for Industry*, a detailed document to clarify the need for substantiation. The guide describes the steps the FTC uses to make its analyses and provides a roadmap for others who wish to do the same.

To determine whether an ad complies with FTC law, the first step is to identify all express and implied claims that the ad conveys to consumers. Once the claims are identified, the scientific evidence can be assessed to determine whether they are adequately supported. Advertisers must make sure that whatever they say expressly is accurate. Often, however, an ad conveys other claims beyond those expressly stated. Advertisers cannot suggest claims that they could not make directly. When identifying claims, advertisers should consider the ad as a whole, assessing the "net impression" conveyed by all elements of the ad, including the text, product name, and depictions.

For example, if an ad claims that "university studies prove" that a mineral supplement can improve athletic performance, the advertiser should have

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Why Health Professionals Become Quacks

Looking beneath the layers

by William T. Jarvis, PHD

It is especially disappointing when an individual trained in the health sciences turns to promoting quackery. Friends and colleagues often wonder how this can happen. Some reasons appear to be:

Boredom. Daily practice can become humdrum. Pseudoscientific ideas can be exciting. The late Carl Sagan believed that the qualities that make pseudoscience appealing are the same that make scientific enterprises so fascinating. He said, "I make a distinction between those who perpetuate and promote borderline belief systems and those who accept them. The latter are often taken by the novelty of the systems and the feeling of insight and grandeur they provide." Sagan lamented the fact that so many are willing to settle for pseudoscience when true science offers so much to those willing to work at it.

Low professional esteem. Non-physicians who don't believe their professions are sufficiently appreciated sometimes compensate by making extravagant claims. Dental renegades have said, "All diseases can be seen in a patient's mouth." Fringe podiatrists may claim to be able to judge health entirely by examining the feet. Iridologists point to the eye, chiropractors the spine, auriculotherapists the ear, some registered nurses an alleged "human energy field," and so on.

Even physicians are not immune from raising their personal status by pretension. By claiming to cure cancer or to reverse heart disease without bypass surgery, general physicians can elevate themselves above the highly trained specialists in oncology or cardiology. By claiming to heal diseases that doctors cannot, faith healers advance above physicians on the social-status chart (physicians are normally at the top of the chart while preachers have been slipping in modern times). Psychologists, physicians, actors, or others who become

health gurus often become darlings of the popular press.

Paranormal tendencies. Many health systems are actually hygienic religions with deeply held, emotionally significant beliefs about the nature of reality, salvation, and proper lifestyles.

Vegetarianism, chiropractic, naturopathy, homeopathy, energy medicine, therapeutic touch, crystal healing, and many more are rooted in vitalism, which has been defined as "a doctrine that the functions of a living organism are due to a vital principle ('life force') distinct from physicochemical forces" and "the theory that biological activities are directed by a supernatural force." Vitalists are not just nonscientific; they are antiscientific because they abhor the reductionism, materialism, and mechanistic causal processes of science. They prefer subjective experience to objective testing and place intuitiveness above reason and logic. Vitalism is linked to the concept of an immortal human soul, which also connects it to religious ideologies.

Paranoid mental state. Some people are prone to seeing conspiracies everywhere. Such people may readily believe that fluoridation is a conspiracy to poison America, that AIDS was invented and spread to destroy Africans or homosexuals, and that organized medicine is withholding the cure for cancer.

Though individuals who complain about conspiracies directed toward themselves are likely to be regarded as mentally ill, those who perceive conspiracies as directed against a nation, culture, or way of life may seem more rational. Perceiving that their political passions are unselfish and patriotic intensifies their feelings of righteousness and moral indignation. Many such people belong to the

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WEB WATCH

This month's evaluations are by Stephen Barrett, MD, board chairman of Quackwatch, Inc. (<http://www.quackwatch.com>), which is working hard to improve the quality of health information on the Web. He also operates Chirobase (<http://www.chirobase.org>), a site devoted to chiropractic history, theories, and current practices.

BEST

The FDA Special Nutritionals Adverse Event Monitoring System lists reports to the FDA of adverse events associated with the use of dietary supplements and herbs. It has been maintained by the FDA Center for Food Safety and Applied Nutrition since 1993. Its database can be searched online at <http://vm.cfsan.fda.gov/~dms/aems.html>. The data must be interpreted cautiously because listing in the database does not establish a cause-and-effect relationship.

HealthCalc Network (<http://www.healthcalc.net/hcn>) offers a simple but sensible health assessment that covers the major risk and lifestyle factors. The test is free and can be completed online.

WORST

The Nutritional Consultants Organization of Canada (<http://www.canlink.com/ncoc/>) offers a Registered Nutritional Consultant (RNC) credential to people with a "bachelor's degree in holistic nutrition from an approved school or by training which is deemed equivalent" by NCOC's Board of Examiners. The site links to several holders of the credential, including Freda Newman, RNC, whose Web site (<http://www.fredacare.com>) offers a computerized nutritional analysis to "pinpoint nutritional deficiencies." The analysis supposedly tests for 54 types of "nutritional imbalances," based on answers to a 392-item "nutrition symptom questionnaire." The cost is \$50 for a "complete" analysis or \$30 for one of 21 "specialty analyses." The end result is an online report that includes findings, recommendations, and charts.

For \$25, the Running Doctor Sportsmedicine Clinic (<http://www.runningdr.com/runningdr/nutritional.html>) will provide information on the individual's "acid/alkaline balance" and various body systems. The site claims that "if you suffer with symptoms suggestive of weakness or fatigue in any of these areas, there are tremendously beneficial nutritional products which will provide the necessary support and balancing properties to promote improved wellness in your life." Its 82-item questionnaire asks mainly about symptoms, many of which are not nutrition-related.

"university studies" that document the benefit as well as evidence that the studies are methodologically sound. And if advertisement for a vitamin supplement claims that 90% of cardiologists regularly take the product, the advertiser should have adequate support for both the percentage and the implied representation that taking the product is beneficial for the heart.

A statement about a product's effect on a normal "structure or function" of the body may also imply that the product is beneficial for treatment. If elements of the ad imply that the product provides a dis-

ease benefit, the advertiser must be able to substantiate the implied claim even if the ad contains no express reference to disease. Thus if an ad for "Arthricure" shows an arthritic woman using a walker before taking the products and dancing afterward, the manufacturers should be able to substantiate the implied claims that the product can cure or mitigate arthritis.

The FTC typically requires claims about the efficacy or safety of dietary supplements to be supported with "competent and reliable scientific evidence." Anecdotal evidence about the individual experience of consumers is not sufficient to substantiate claims. Even if those experiences

are genuine, they may be attributable to a placebo effect or factors unrelated to the supplement. Individual experiences are not a substitute for scientific research. Ads that include testimonials should be backed by adequate substantiation that the testimonial experience represents what consumers will generally achieve when using the product. Vague disclaimers like "results may vary" are likely to be insufficient. Whenever an expert or consumer endorser is used, the advertiser should disclose any material connection between the endorser and the advertiser of the product that consumers would not reasonably expect.

Nutrition-Related FTC Consent Agreements Settled During Fiscal Year 1997

- Abbott Laboratories, Inc., settled allegations related to its promotion of Ensure for healthy, active adults. The FTC alleged that Abbott represented without adequate substantiation that many doctors recommend Ensure as a meal supplement and meal replacement for healthy adults, including those in their thirties and forties. The consent order prohibits unsubstantiated claims about the extent to which doctors or other professionals recommend any food or dietary or nutritional supplement, or about any other recommendation, approval, or endorsement of such products.
- Abflex, U.S.A., Inc.; Kent & Spiegel Direct, Inc.; Marsha Kent; Peter Spiegel; and Martin Van Der Hoeven settled allegations that advertising for the Abflex abdominal exerciser contained unsubstantiated claims for weight loss and spot reduction.
- Amerifit, Inc., settled allegations in connection with the marketing of diet supplements sold under the trade names "Fat Burners" and "Fast Burners." The order required the company to pay \$100,000 and to have scientific substantiation for any future claim that a food, drug, or dietary supplement will cause weight loss or reduce body fat.
- A consent order with BodyWell resolved charges related to the marketing of shoe insoles that purportedly cause weight loss by stimulating certain areas of the feet. The order required payment of \$100,000 in redress and prohibits use of the name "Slimming Soles" without scientific substantiation that the product actually causes weight loss.
- Dean Distributors, Inc. (d/b/a Advanced Health Care System, Cambridge Direct Sales, and Medibase), settled charges related to the marketing of low-calorie and very-low-calorie diet programs, including the Food for Life Weight Management System and the Cambridge Diet, through a multilevel distribution system. The order requires substantiation for weight-loss and weight-maintenance claims. It also requires that advertisements disclose that weight loss may be temporary and clearly disclose the need for physician-monitoring to minimize potential health risks.
- Gerber Products Company settled allegations that the company made false and unsubstantiated "doctor recommended" claims for Gerber baby food. The order bars the company from misinterpreting the results or existence of any survey, test, or research.
- Grey Advertising, Inc., settled charges that a commercial falsely implied that some of the flavors in the Dannon Company's Pure Indulgence frozen yogurt line were low in fat and calories.
- Icon Health and Fitness, which bills itself as the world's largest manufacturer of home-fitness equipment, and two related companies settled charges that they had made unsubstantiated claims about the weight-loss benefits of the Proform Cross Walk Treadmill. The order requires substantiation for future claims and requires that testimonial ads either represent the typical experience of users or disclose that the results are not typical.
- Interactive Medical Technologies, Ltd., and several other parties settled allegations related to Lipitol and SeQuester, two cellulose-bile products that were claimed to aid in weight loss and fat and cholesterol reduction. Three separate orders prohibit unsubstantiated claims and call for total payment of \$185,000 for consumer redress.
- Life Fitness, which markets a variety of exercise equipment, settled allegations that it had made unsubstantiated claims about the weight-loss benefits of its Lifecycle stationary exercise cycle. The order requires substantiation for future claims about the weight-loss, calorie-burning, or fat-burning benefits of any exercise equipment.
- Nutrition 21, Selene Systems, and Herbert Boynton settled charges that advertising claims for their weight-loss and health-care products containing chromium picolinate were unsubstantiated. Nutrition 21 is the sole U.S. supplier for chromium picolinate and sells it to the public through distributors. Similar orders were obtained against Universal Merchants, its president, Steven Oscherowitz, and Victoria Bie, d/b/a Body Gold.
- A company doing business as United Research Center, Inc., and its president, Patrice Runner, settled allegations related to their marketing of Svelt-PATCH, a skin patch that purportedly melts away body fat. The order requires scientific substantiation for future claims that any product or program controls appetite, increases metabolism, reduces body fat, causes weight loss, reduces cholesterol, or provides any weight-related benefit. It also required payment of \$375,000 in consumer redress.
- Uno Restaurant Corporation and two subsidiaries, Pizzeria Uno Corporation and Uno Restaurants, Inc., settled allegations that they had falsely advertised their Thinzettas line of thin-crust pizzas as low fat.

Claims based solely on traditional use should avoid implying that the product has been scientifically evaluated for efficacy. Claims that, if unfounded, could present a substantial risk of injury to consumer health or safety will be held to a higher level of scientific proof. For example, a claim that a mineral supplement has been a popular American folk remedy for shrinking tumors should not be made without scientific evidence that the product is effective.

An advertisement can also be deceptive because of what it fails to say. For example, if an herbal weight-loss product contains an ingredient that, when regularly consumed, can result in a significant increase in blood pressure, the advertiser should disclose this potentially serious risk.

When the disclosure of qualifying information is necessary, that information should be presented so that it is actually noticed and understood by consumers. A fine-print disclosure at the bottom of a print ad, a disclaimer buried in a body of text, a brief video superscript in a television ad, or a disclaimer that is easily missed on an Internet Web site, are not likely to be adequate.

How to Keep Track

The FTC's activities are reported in the weekly *FTC News Notes* and an annual report, both of which are available free of charge to interested parties. Annual (fiscal year) reports, news releases, consent agreements, policy statements, consumer advisories, and many other important documents are posted to the agency's Web site (<http://www.ftc.gov>), which receives about 100,000 hits per day on its home page. The 1997 annual report, covering October 1, 1996 through September 30, 1997, can be viewed at <http://www.ftc.gov/os/ar97/index.html>. The 1998 report should be posted early in 1999. The most efficient way to search for a specific topic is to go directly to the search page at <http://www.ftc.gov/search.NF>

Dr. Barrett, a retired psychiatrist who resides in Allentown, Pennsylvania, is board chairman of Quackwatch, Inc. and a board member of the National Council Against Health Fraud.

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world of American fascism, Holocaust deniers, tax rebels, the radical militia movement, and some "libertarian" causes. Liberty Lobby's newspaper, *The Spotlight*, champions such causes and also promotes unproven cancer cures and attacks fluoridation.

Reality shock. Everyone is vulnerable to death anxiety. Health personnel who regularly deal with terminally ill patients must make psychological adjustments. Some are simply not up to it. Investigation of quack cancer clinics have found physicians, nurses, and others who became disillusioned with standard care because of the harsh realities of the side effects or limitations of proven therapies.

Beliefs encroachment. Science is limited to dealing with observable, measurable, and repeatable phenomena. Beliefs that transcend science fall into the realms of philosophy and religion. Some people allow such beliefs to encroach upon their professional practices. Though one may exercise religious or philosophical values of compassion, generosity, mercy, and integrity (which is the foundation of the scientific method's search for objective truth), it is not appropriate for a health professional to permit metaphysical (supernatural) notions to displace or distort scientific diagnostic, prescriptive, or therapeutic procedures.

The profit motive. Quackery can be extremely lucrative. Claiming to have a "better mousetrap" can cause the world to beat a path to one's door. Greed can motivate entrepreneurial practitioners to set ethical principles aside.

The prophet motive. Just as Old Testament prophets called for conversion and repentance, doctors have to "convert" patients away from smoking, obesity, stress, alcohol, and other indulgences. As prognosticators, doctors foretell what is going to happen if patients don't change their way of life. The Prophet role provides power over people. Some doctors consciously avoid it. They encourage patients to be self-reliant rather than dependent, but in doing so they may fail to meet important emotional needs. Quacks, on the other hand, revel in, encourage, and exploit this power. Egomaniacs are commonly found among quacks. They enjoy

the adulation and discipleship that their pretense of superiority evokes.

Psychopathic tendencies. Studies of the psychopathic personality provide insight into the psychodynamics of quackery. Dr. Robert Hare, who investigated psychopathology for more than 20 years, states, "You find psychopaths in all professions . . . the shyster lawyer, the physician always on the verge of losing his license, the businessman with a string of deals where his partners always lost out."

Hare describes psychopaths as lacking a capacity to feel compassion or pangs of conscience, and as exhibiting glibness, superficial charm, grandiosity, pathological lying, conning/manipulative behavior, lack of guilt, proneness to boredom, lack of empathy, and other traits often seen in quacks. According to Hare, such people suffer from a cognitive defect that prevents them from experiencing sympathy or remorse.

The conversion phenomenon. The "brainwashing" that North Koreans used on American prisoners of war involved stress to the point that it produced protective inhibition and dysfunction. In some cases, positive conditioning causes the victim to love what he had previously hated, and vice versa; and in other cases, the brain stops computing critically the impressions received. Many individuals who become quacks undergo a midlife crisis, painful divorce, life-threatening disease, or another severely stressful experience—and radical personal changes ensue.

The conversion theory is supported by a study of why physicians had taken up "holistic" practices. By far the greatest reason given (51.7%) was "spiritual or religious experiences."

Many people—including far too many health professionals, law-enforcement officials, and judges—exhibit a cavalier attitude toward quackery. Although most reject the idea that quackery is "worth a try" for a sick person, they may not fully understand quackery's harmful potential. And they may be completely unaware of the true, disconcerting reasons why some turn away from science and evidence to the unproven and fraudulent. **NF**

Dr. Jarvis is Executive Director of the National Council Against Health Fraud (NCAHF).

[continued from page 9]

Committees had been trying to get creatine added to the IOC's banned substance list because of short-term problems such as muscle cramping and dehydration associated with its use.

FDA IMPOSES LARGE FINE ON JUICE COMPANY

Odwalla, Inc., a California juice company, has been fined \$1.5 million by the FDA in the aftermath of the 1996 *E. coli* outbreak linked to the company's tainted apple cider juice. The fine is one of the largest ever to be imposed by the federal agency. Money received from Odwalla will be used in part to increase public awareness of the dangers associated with unpasteurized juice. Fifteen children were affected by the 1996 outbreak—14 of them becoming seriously ill and one dying. The surviving children may live with serious effects of the outbreak, which can cause kidney failure, for years to come. Odwalla is currently serving five years of probation for ignoring safety standards leading to the outbreak. Recently tested samples of Odwalla apple juice have tested negative for *E. coli*.

JAIL TERM FOR HEALTH HOAXING

An FDA investigation into a man posing as a physician, but without a medical license, has ended with the man being sent to prison. Edwin E. Kokes was charged and convicted after FDA officials uncovered his fraudulent business, Independent Testing Labs of Grand Island, Nebraska. According to the *FDA Consumer*, Kokes had been "diagnosing and treating nonexistent conditions and purchasing and selling unapproved drugs since 1989." Among the treatments he offered his patients was the application of "M-Bone" (actually diluted sulfuric acid) to the skin to treat various fabricated ailments. He sold the acid for \$300/four ounces. Kokes boasted that he could diagnose medical conditions by analyzing hair and fingernail samples with a high-tech NASA laser. FDA agents had disproved that claim by submitting hair and nail samples to Kokes, includ-

ing those of a guinea pig. From these samples, Kokes had diagnosed human diseases including allergies, glandular problems, toxicity, and organ malfunctions. Kokes is now serving a two-and-a-half-year prison term.

JUICE MAKERS GIVEN TIME TO MEET REQUIREMENTS

In October 1998, the FDA granted citrus juice manufacturers eight additional months to meet their new safety guidelines meant to ensure the lowest possible risk of food-borne illness due to contaminated fruit. Manufacturers will now be required to either develop a system to reduce the number of pathogens in their fruit juices to a specified level or place a warning label on their juices stating the risk of food-borne illness to those with weakened immune systems, the elderly, and children. The new stringent guidelines had been met with frustration by the manufacturers, who felt that they had not been given enough time to develop a new approach. The new deadline for implementing either approach is July 8, 1999. In the meantime, manufacturers must show that they are following strict safety rules to minimize potential pathogen risk in their products.

'GOD'S RECIPE' RUNS AFOUL OF THE FTC

In the first-ever case involving claims over attention deficit and attention deficit hyperactivity disorders (ADD and ADHD, respectively), the manufacturer of a dietary supplement regimen called "God's Recipe" has agreed to settle with the Federal Trade Commission.

The manufacturers, New Vision International, based in Scottsdale, Arizona, and its affiliate, NVI Promotions, L.L.C., had been making claims that their supplements—a trinity of minerals, antioxidants, and enzymes—could cure ADD and ADHD. New Vision also claimed that "God's Recipe" would be a safer, natural alternative to the traditional treatment for the disorder, the prescription drug Ritalin. The FTC released a statement on December 8, 1998, stating that "New Vision lacked the substantiation the Commission requires for that claim." Under the proposed settlement (under public comment for 60 days be-

fore becoming final), New Vision will be prohibited from making claims that its product can "cure, prevent, treat or mitigate" either ADD or ADHD or its symptoms. It will also be forbidden from suggesting its drug as an alternative to Ritalin unless it is able to support its claims through scientific documentation. In addition, the proposed settlement prohibits the use of atypical testimonials to deceptively represent their product line.

NEW DRINKING WATER STANDARDS ANNOUNCED

President Clinton has issued the first new health standards under the Safe Drinking Water Act Amendments of 1996. The new standards will help to protect against potentially harmful by-products caused by disinfecting the public water supply. They will also help to protect against pathogens that are difficult to disinfect, such as the potentially life-threatening *Cryptosporidium protozoa*, among others. A fact sheet can be found at <http://www.epa.gov/OGWDW/mdbp/mdbp.html>.

FOLIC ACID AND COLON CANCER

New findings published in the October 1998 issue of the *Annals of Internal Medicine* show that colon cancer risk was reduced by as much as 75% in women taking multivitamins containing folic acid. The study, a part of the larger Nurses' Health Study conducted by researchers at Brigham and Women's Hospital in Boston, looked at women who had taken multivitamins for a specific number of years. Though women who took multivitamins for less than 5 years showed no benefits with regard to colon cancer reduction, those who took them for more than 15 years had significant reductions—68 new cases of colon cancer per 10,000 women compared to 15 new cases, respectively. There were also moderate decreases in colon cancer risk when folic acid was consumed through diet alone. For a variety of reasons, researchers believe that folic acid played a central role in these reductions. This type of study, however, cannot rule out the possibility that other lifestyle factors were the true causes of decreased risk. **NF**

Book Reviews

Analysis and Ratings

The following reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to *Nutrition Forum Book Reviews*, P.O. Box 664, Amherst, NY 14226-0664.

Insult to Injury

Manfred Kroger, PhD

Controlling Herpes Naturally . . . A Holistic Approach to Prevention and Treatment by Michele Picozzi (Colorado Springs, CO: Southpaw Press, 1998), 114 pp., \$12.95 paperback. ISBN 0-9658600-0-0.

The meaning of this thin volume is clear: "take control and rely on natural products and procedures," it says; "distrust doctors and what they prescribe and mosey on down to the health food store where health is gained and regained."

As a student's term paper, this book would get a failing grade; maybe a charitable D. (It's not really a book. Why is the first page numbered 15? There are no more than 85 pages of text.) The facts about herpes in these pages are indeed sparse. The author should have focused on the fact that herpes is a contagious disease and is spread by direct contact. A few pages are devoted to describing this viral illness, its many symptoms, and its connections to other conditions. Two pages deal with current therapy. Since 1982 the prescription drug acyclovir has been used. It's ironic, but typical for this type of book, that the success of acyclovir is downplayed and all negatives thereof accentuated. Eight other drugs are in various stages of development and approval.

Most of this booklet is an endorsement of dozens of "natural" health-food-store products. Also, nutritional advice, stress management, yoga postures, home-

opathy, and aromatherapy are described as related to herpes, but it is not clear whether as preventive, curative, or suppressive factors.

The author is a journalist who has written on yoga and "natural" medicine during the past few years. This "book," unfortunately, is a mere review paper based on writings about herpes drawn from "alternative" medicine sources and promotional materials. There is hardly any serious science in these pages and no rational science-based information. And the little there is is frequently faulty, confusing, and contradictory.

Dietary do's and don'ts abound and make no sense. Organic foods are in; sugar and sweets are out. Garlic and quinoa are good, but tomatoes and peanuts are bad. Avoid acid-producing foods and go for, you guessed it, alkaline-producing edibles. And foods high in arginine are definitely pro-herpes (there go chocolate, nuts, grains, and much more). And why making your own yogurt is given a whole page is a puzzlement.

This report is incoherent, irrational in places, too lop-sided toward alternative self-help medicine, antagonistic to what Americans find in supermarkets, and insulting to readers previously exposed to biology or medicine (or even a course in critical thinking).

NOT RECOMMENDED

Beyond Cholesterol

Cinda Williams Chima, MS, RD

The Homocysteine Revolution by Kilmer S. McCully, MD (New Canaan, CT: Keats Publishing, 1997), 242 pp., \$14.95 paperback, ISBN 0-87983-767-5.

In 1933, an eight-year-old boy was admitted to the Massachusetts General Hospital with mental retardation and symptoms of an apparent stroke. The boy's condition continued to deteriorate, and he died three days later. The autopsy determined that the boy died of severe arteriosclerosis of the carotid artery with brain infarct (stroke). The unusual case was published in the *New England Journal of Medicine* that same year.

This case was the first clue in a medical mystery that enthralled a young Massachusetts General pathologist named Kilmer S. McCully more than thirty years later. By that time, the boy had been retrospectively diagnosed with homocystinuria, a genetic metabolic disease first identified in Ireland in the early 1960s. In homocystinuria the liver is unable to dispose of homocysteine, an amino acid, because of a number of enzyme defects. Researchers had found that many children with homocystinuria die of complications relating to blood clots and arterial changes despite normal cholesterol levels.

In 1969, McCully published a paper in the *American Journal of Pathology* outlining the framework for what he called the "Homocysteine Theory of Heart Disease." He suggested for the first time that homocysteine could play a role in arteriosclerosis in those without the frank genetic defect. According to this theory, which McCully continued to develop over the ensuing decade, heart disease is a problem of what he calls "protein intoxication" rather than "fat intoxication" as has been generally believed. Homocysteine is derived in the body from the amino acid methionine, found primarily in meat protein and in smaller amounts in plant proteins. Because vitamins B₆, B₁₂, and folic acid contribute to enzyme activity and can lower serum homocysteine in people without the defect, he suggested that a diet high in methionine and low in B₆ and folic acid could cause heart disease.

McCully's theory initially drew little attention from adherents to what he calls the "cholesterol-fat approach." Indeed, he attributes his failure to attain tenure and subsequent departure from the Harvard Medical School at the end of 1978 to criticism of his "homocysteine theory." After leaving Harvard, he was appointed pathologist at the Veterans Administration Hospital in Providence, Rhode Island, where he has continued to pursue the relationship between homocysteine and heart disease. *The Homocysteine Revolution* is his first book on the topic targeted at the lay public.

McCully suggests that the homocysteine theory explains many observations

about heart disease that are inconsistent with the cholesterol/fat hypothesis. For example, he relates the dramatic rise in U.S. heart disease through the early 1960s to the switch to a diet high in meat and processed and refined foods and low in the B vitamins. He says that the subsequent decline in heart disease since that time reflects the addition of vitamin B₆ to the food supply in 1961. In McCully's view, hyperhomocysteinemia is the primary risk factor for heart disease. Other risk factors are secondary at best.

The complexity of the homocysteine theory as well as the fact that a number of other studies failed to replicate McCully's early results may in part explain the initial resistance of other researchers to his hypothesis. McCully is critical of what he calls the "cholesterol/fat" camp and attributes their failure to accept his theory to "the inadequate, flawed, or misinterpreted experiments of a few investigators." He even suggests that the lack of interest in a vitamin deficiency as a cause of heart disease relates to a lack of potential profit. At times he appears to fit the evidence to his theory rather than the other way around, emphasizing those studies that support it and downplaying those that don't.

But it is not necessary to discard the cholesterol/fat theory to embrace homocysteine as a risk factor. The development of cardiovascular disease is clearly multifactorial.

While McCully is a Harvard-educated physician and scientist who is an expert in the esoteric field of amino acid metabolism, it is clearly difficult for him to translate that expertise into simple language. Despite a general grasp of the principles involved, I found myself reading and rereading pages and paragraphs to make sense of them. This is not a book to take to the beach!

It is, however, a story of perseverance and redemption. The '90s have spawned several studies that appear to support McCully's findings. For example, a survey of subjects in the Framingham heart study showed a relationship between high blood homocysteine and low intakes of folic acid, B₁₂, and B₆. In another study of 1,000 Framingham subjects, high serum homocysteine was

found to be a stronger risk factor for heart disease than many traditional risk factors including elevated cholesterol, high blood pressure, and cigarette smoking. According to a 1995 article in the *New England Journal of Medicine*, more than 20 case-control and cross-sectional studies involving more than 2,000 subjects have suggested that persons with cardiovascular disease have higher blood homocysteine than those without the disease. Based on these findings, it has been estimated that the recent FDA decision to require folate fortification of bread and grain products may save 50,000 lives a year.

Many in the medical community, however, are awaiting the results of the first randomized clinical trial of folic acid supplementation before they fully accept the homocysteine theory. Ironically, this study is to be carried out at Harvard.

For those who can get through it, the book is a well-referenced, fascinating medical detective story that demonstrates that scientific research does not always progress seamlessly but by fits and starts. McCully also presents rather convincing evidence that current RDAs for folate and B₆ are too low. Fortunately, the plant-based low-fat minimally processed diet he recommends is consistent with current recommendations for a heart-healthy diet.

RECOMMENDED WITH RESERVATIONS

False Formula

Manfred Kroger, PhD

Psoriasis: Your Guide to Complementary Therapies, Alternative Techniques, Conventional Treatments by Hilary Bower (Rockport, MA: Element Books, Inc., 1998), 134 pp., \$5.95 paperback. ISBN 1-85230-832-X.

There are at least 17 of these booklets dealing with as many diseases or conditions. This is the third I have read and my displeasure has been growing. They seem to have been commissioned to fit a prescribed format. Accordingly, the first half describes the disease and its conventional medical treatment. This part in the psoriasis booklet is quite factual, but current standard treatments are belittled. The entire tone throughout is derisive of main-

stream medicine. It is assumed that an alternative to an exploitative and rigidly scientific health establishment must be the answer, and this alternative is natural therapists.

The second half of the booklet, as with the others, is a shallow promotional treatise of many natural therapies. The specific ones claimed to be useful with regard to psoriasis are homeopathy, acupuncture/acupressure, reflexology, and Chinese and Western medicines. Most of these whole-system therapeutic approaches make little rational sense in the alleviation of this baffling, multifactorial, and multifaceted skin ailment which is said to bother two to three out of every 100 human beings. Of course, some convenient case histories attest to effectiveness of the natural approaches.

There are numerous errors and contradictions throughout the book, many the result of the writer's incomplete grasp of physiology and other biological principles, such as liver, stomach, and intestinal functions. She blindly parrots the silly accusations of antitechnologists, naive environmentalists, and seekers of alternative truths that modern living, supermarket foods, and synthetic chemicals are the causes of most of human ill health, psoriasis included. I have looked at the Web site of the National Psoriasis Foundation. Now there is an authoritative and all-encompassing source for all aspects of this condition. In it I found no references to homeopathy or any of the many treatments touted in this guide for the misguided. **NF**

NOT RECOMMENDED

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BETA-CAROTENE AND LUNG CANCER

A six-month study of ferrets—which metabolize beta-carotene much like humans—found that excess amounts stored in the lungs became oxidized into substances that decreased a tumor suppressor and increased a tumor promoter in the animals' lungs. The finding may explain why very high doses appeared to increase lung cancer rates among smokers in two large clinical trials in 1994 and 1996. The ferrets were divided into four groups. One received beta-carotene and was exposed to cigarette smoke equivalent to a human smoking 1.5 packs per day. Two other groups got either the supplement or smoke exposure, and a control group got neither. The first group had the strongest precancerous changes. The study was conducted by researchers at the Jean Mayer USDA Human Nutrition Research Center at Tufts University.

BREATHASURE FALSE CLAIMS PROHIBITED

Warner Lambert, Inc., has secured a federal court order permanently barring BreathASURE, Inc., from making 21 unsubstantiated claims for BreathASURE, BreathASURE D, or any other similar product. The prohibited claims include: "works from the inside out," "cleans bad breath for hours," "provides users with clean breath," "lasts for hours," "will stop bad breath caused by the foods you eat," and "will help stop morning breath."

ALLIANCE OF GNC AND RITE AID

General Nutrition Centers, Inc., and Rite Aid Corp. have formed a "strategic alliance" in which GNC will manufacture and the two companies will jointly market PharmAssure products through 3,900 Rite Aid pharmacies and 3,650 GNC domestic stores. The plan includes placing GNC kiosks staffed by Rite Aid employees "specially trained in nutrition" into 1,500 Rite Aid stores. The companies will also develop a nutritional information and supplement sales Web site at <http://www.gnc.riteaid.com>.

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Chiropractic Nutrition

The good, the bad, and the patently false

by Samuel Homola, DC

Chiropractic is based on the notion that most ailments are the result of spinal problems. Its "discovery" was announced in 1895 by Daniel David Palmer, a grocer and "magnetic healer" who allegedly restored the hearing of a partially deaf janitor by "adjusting" a bump on his spine. Soon afterward he declared that the basic cause of disease is "nerve interference" caused by misaligned spinal bones ("subluxations"). Most of today's 60,000+ chiropractors still regard subluxations as a direct or underlying cause of ill health and maintain that spinal "adjustment" can restore and promote good health.

Chiropractic surveys suggest that at least 80 percent of chiropractors are giving nutrition advice to their patients. Some chiropractors are able to counsel their patients about sensible eating, weight control, and other nutrition-related health matters. Many, however, are engaged in questionable nutrition practices.

All chiropractic colleges teach courses in basic and clinical nutrition. Although most courses rely on standard nutrition textbooks, it is not clear whether students put what they learn to good use. Practicing chiropractors have little exposure to science-based nutrition. Chiropractic journals, magazines, and textbooks provide very little nutrition information, and most of what they provide is not valid. Postgraduate seminars are available, but the vast majority are sponsored by supplement distributors for the purpose of boosting sales. During my 43-year career, I have seen hundreds of advertisements for such seminars. I cannot recall a

single one that appeared to provide valid teachings. Many state chiropractic associations promote similarly questionable seminars that yield credits toward license renewal. Many exhibitors at chiropractic conventions hawk supplements that are sold in chiropractic offices. Some exhibitors promote inappropriate diagnostic tests, and some even distribute literature stating which products supposedly are effective against various diseases.

Chiropractors interested in science-based nutrition can pick up the basics from other sources or by studying on their own. It is not difficult to learn enough to answer the questions patients typically ask about food composition, dietary balance, osteoporosis prevention, exercise principles, low-fat eating, and other dietary strategies. However, many chiropractors mix nutrition and subluxation theory, use dubious tests, or engage in bizarre treatment systems that result in inappropriate use of supplement products.

Supplement Promotion

Chiropractors can greatly augment their income by selling nutritional products to their patients. More than 50 companies market them primarily or exclusively through chiropractors. Some handle just a few products, while others sell hundreds. These products are typically sold for two to three times what the chiropractor pays for them.

Many chiropractors become distributors for multilevel companies that sell supplements, herbs, and/or homeopathic

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products. Multilevel marketing (MLM) is a form of direct sales in which "independent distributors" can buy products "wholesale," sell them "retail," and recruit other distributors who can do the same. When enough distributors have been enrolled, the recruiter is eligible to collect a percentage of their sales. During the past 20 years, Dr. Stephen Barrett has investigated over a hundred health-related MLM companies and found that every one of them has marketed products that were overpriced, misrepresented, or both.

To persuade patients to buy nutritional products, chiropractors may use several dubious tests:

- **Functional Intracellular Analysis (FIA)**, formerly called **Essential Metabolics Analysis (EMA)**, is a test in which a sample of the patient's blood is sent to a laboratory that isolates the patient's lymphocytes (a type of white blood cell) and places them into petri dishes containing various concentrations of certain nutrients. Company literature states that the procedure can find hidden "functional" nutrient deficiencies in nearly everyone. Although properly performed lymphocyte cultures have a legitimate role in testing for certain deficiencies, they are not appropriate for screening as advocated by the laboratory.

- **Hair analysis** is done by clipping a sample of the patient's hair—usually from the nape of the neck—and sending it to a laboratory for analysis. The lab then issues a report (often with a copy for the patient) stating the concentrations of various minerals and how these amounts compare to the lab's reference values. Some reports also contain specific recommendations for supplements. The scientific viewpoint is that hair tests of this sort do not provide a valid basis for determining the body's nutritional state or for making supplement recommendations.

- **Live blood analysis**—also called **live cell analysis**, **nutritional blood analysis**, and **Hemaview**—is done by placing a drop of the patient's blood on a microscope slide and using a glass cover slip to keep it from drying out. The slide is then viewed with a special microscope that forwards the image to a television monitor that the practitioner and patient can view. Although certain blood characteris-

tics (such as the relative size of the red cells) are visible with this setup, live-cell analysts invariably misinterpret other things, such as the extent of red blood cell clumping and changes in the shape of the cells that occur as the blood sample dries. The results are then used as a basis for prescribing supplements. Chiropractors using this approach typically advise patients to take vitamins and/or enzyme pills and to return periodically for check-ups. The Web site of one imaginative chiropractor advises that, "By checking the blood, we check the oil of the body. It can tell us a great deal about the body, and whether or not it is able to keep up with the stress of everyday life, or if it is on its way to problems down the road."

- "Nutrient deficiency" questionnaires typically contain a long list of symptoms and conditions that the patient checks off. The information is then fed into a computer that reports what products the patient should take. Some symptoms might occur in a vitamin deficiency disease or glandular disorder, but many have nothing to do with nutritional status. The questionnaire might also ask about diet, health habits, or other lifestyle factors. The computers are programmed to recommend products for everyone.

Dubious Treatment Systems

Many chiropractors use elaborate systems that include a nutrition component. The numbers using such systems range from a few hundred to many thousands.

- **Applied kinesiology (AK)** is based on the idea that every organ dysfunction is accompanied by a specific muscle weakness, which enables health problems to be diagnosed through muscle-testing procedures. Testing is typically carried out by pulling on the patient's outstretched arm. Proponents claim that nutritional deficiencies, allergies, and other adverse reactions to foods or nutrients can be detected by having the patient chew or suck on them or by placing them on the tongue so that the patient salivates. Some practitioners have the test material held in the patient's hand or placed on another part of the body. A few even perform "surrogate testing" in which the arm strength of a parent is tested

[continued on page 20]

Kava

Controversial claims, questionable evidence

by Beth Fontenot, MS, RD

Who could resist a product that lures you with promises of relief from stress, feelings of relaxation and euphoria, enhanced mental alertness, and more harmonious feelings toward others—all legal, nonaddictive, and without the side effects of prescription antianxiety drugs. These are but some of the claims made by marketers of kava, an herbal product promoted as an alternative to prescription tranquilizers such as Valium and Xanax. It is also touted as a pain reliever and treatment for insomnia and seizures.

Kava is the name for both the shrubby pepper plant that is native to the South Pacific Islands, and for the mildly narcotic beverage made from the crushed rhizome and roots of the plant. For centuries Islanders have ground the root into a powder, mixed it with water, and consumed it as a beverage. Kava drinks are used in the South Pacific much as alcoholic beverages are used elsewhere. In small doses, kava is supposed to reduce anxiety and relax muscles. Taken in large doses, it is intoxicating, causing drowsiness, nausea, muscle weakness, and blurred vision.

In the 1970s, kava was sold as a "street drug" through counterculture publications. Today, extracts from the root are placed in capsules, often combined with other herbal ingredients, and sold as a dietary supplement in supermarkets, "health-food" stores, and on the Internet. The ground root can also be purchased to create kava beverages. Last year Americans spent over \$50 million on kava.

The primary active components in kava are called kavalactones, although there appear to be other active constituents as well. It is generally thought that the "beneficial" effects of kava are obtained through the use of root extracts because they contain the full range of the many components found in the root. How kava produces its effects in the brain is

largely unknown, but it is thought to be through mechanisms other than those used by traditional sedative drugs. Some studies suggest that it may directly influence the limbic system, the part of the brain associated with emotions and other brain activities.

Questionable Studies

Five studies totaling several hundred people have been published in Europe comparing kava with a placebo for mild to moderate anxiety. Most of the study participants had been diagnosed with at least one anxiety disorder. The Hamilton Anxiety Rating Scale (HAMA), a standardized tool used in testing antianxiety drugs, was used to evaluate anxiety levels. In each study, those taking kava showed significant relief of their anxiety symptoms compared with those taking the placebo. The longest study, conducted at Jena University in Germany, showed after 24 weeks decreases in HAMA scores for both those taking kava and placebo. However, the kava-takers' scores were lower, indicating less anxiety (*Pharmacopsychiatry*. 1997 Jan.;30[1]: 1-5).

The reliability of these studies is questionable because people with mental or emotional disorders often feel better after taking anything at all, including inactive substances. In fact, in the Jena University study, three-fourths of the study participants reported significant improvement when taking kava, and half of those who took the placebo also reported feeling better. By the end of the study, nearly everyone reported feeling better than at the beginning of the study. Another problem with the reliability of the European studies is that it's unclear what the initial diagnoses of the subjects were.

[continued on page 22]

This month's ratings are by Stephen Barrett, M.D., board chairman of Quackwatch, Inc., who is working hard to improve the quality of health information on the Web. He now operates three Web sites: Quackwatch (<http://www.quackwatch.com>), Chirobase (<http://www.chirobase.org>), and MLM Watch, a site focusing on multilevel marketing tactics (<http://www.mlmwatch.org>).

BEST

Dairy Council Digest, which published its final print version in December 1998, is now available online at <http://www.nationaldairycouncil.org/medcent/mcbddcd.html>. Each bi-monthly issue covers a topic related to food and nutrition.

The National Guideline Clearinghouse (<http://www.guideline.gov>) contains information about 500 healthcare guidelines. The site is cosponsored by the Agency for Health Care Policy and Research, the American Medical Association, and the American Association of Health Plans.

Hoovers Online (<http://www.hoovers.com>) is a gateway to news and to Security and Exchange Commission filings on publicly held corporations, including many that market supplement products.

WORST

The Doctors' Medical Library at <http://www.medical-library.net> is described on its Web site as "a network of over 225 integrated Web sites containing enough information to constitute a complete course of study in natural medicine." Questionable information on many topics is conveniently available through the site's main window. Its features include professional directories, an e-mail newsletter, bulletin board discussions, and the ability to search for articles related to symptoms.

The International Clinic of Biological Regeneration at <http://www.icbr.com> provides information on "cell therapy," an unsubstantiated treatment based on the idea that injecting animal cells into a human can rejuvenate the corresponding organs in the patient. The clinic claims that the therapy "acts like an organ transplant and actually makes the old cells 'act younger.'"

to diagnose problems in a child held by the parent. Many muscle-testing proponents assert that nutrients tested in these various ways will have an immediate effect, that "good" substances will strengthen specific muscles, whereas "bad" substances will cause weaknesses that indicate trouble with the associated organ or tissue. The recommended "treatment" can include special diets, food supplements, acupuncture, and spinal manipulation.

The International College of Applied Kinesiology (ICAK) maintains that practitioners who do not follow its standards are not doing AK, and that muscle-testing results should be combined with other clinical findings and not be used by themselves. However, critics respond that the nutrition-related claims and practices of those affiliated with ICAK are no less bizarre than those of other muscle-testers who do not.

• Biological Terrain Assessment (BTA) uses a computerized analysis of blood, urine, and saliva specimens to recommend nutritional programs, vitamin and mineral supplements, homeopathic products, and/or herbs. Proponents claim that BTA gives evidence of disease at the cellular level which enables "imbalances" to be detected and corrected in their early stages. Neither the rationale nor the recommended strategies make sense.

• Biomagnetic Therapy is based on the idea that disease cannot exist when the body is "biomagnetically balanced" and "all nutrition" is available. It has been promoted through seminars at which chiropractors are taught how to use magnetic and nutritional procedures for "normalizing organs and systems."

• Contact Reflex Analysis (CRA), an AK offshoot, involves pushing down on the patient's outstretched arm while touching "reflex points" located in various parts of the body. Proponents claim that "the testing arm," which is like a circuit breaker, "will remain strong if there

is no interruption of nerve energy" but will "draw excessive electrical energy" and become weak if it becomes unhealthy. Proponents further claim that "weakness" of the arm points to problems in corresponding areas and that nutritional supplementation can solve these problems.

• The Enzyme Replacement System is based on identifying and treating "enzyme deficiency states." Its developer, Howard F. Loomis, DC, offers seminars sponsored by the National College of Chiropractic and markets products "targeted to organs stressed by subluxation." The alleged deficiency states are identified by taking a history, examining the patients, obtaining a "24-hour urinalysis," and correlating this information with "recurring spinal subluxation patterns." The products listed in Loomis's 1995 catalog include ChiroZyme, a line of "carefully formulated combinations of herbs, vitamins and minerals with plant enzymes," each of which is named with an abbreviation for certain spinal segments and an organ or body function.

• Iridology, also called iris diagnosis, maintains that each area of the body is represented by a corresponding area in the iris of the eye (the colored area around the pupil) and that the body's state of health and disease can be diagnosed from the color, texture, and location of pigment flecks in the eye. The leading proponent, Bernard Jensen, DC, has written that "Nature has provided us with a miniature television screen showing the most remote portions of the body by way of nerve reflex responses." Iridology practitioners claim to diagnose "imbalances" that can be treated with vitamins, minerals, herbs, and similar products. Some also claim that the eye markings can reveal a complete history of past illnesses as well as previous treatment. Several well-designed studies have found that iridology practitioners who examined the same patients (or photographs of their eyes) disagreed among them-

selves and were unable to state what was medically wrong with the patients.

• The Morter HealthSystem, described in its literature as "a complete alternative healthcare system," combines Bio Energetic Synchronization Technique (B.E.S.T.) and nutritional supplementation. B.E.S.T. is based on the notion that development and repair of the body is controlled by its electromagnetic field. Advocates claim that electromagnetic imbalance causes unequal leg length, which the chiropractor can instantly correct by infusing his own electromagnetic energy at "contact points" on the patient's body until "pulsation" is felt and the patient's legs test equally long. The nutritional component includes supplements that supposedly "alkalize" the body. Proponents recommend lifelong testing and treatment beginning early in infancy.

• NutraBalance is one of several systems in which the results of legitimate blood and urine tests are fed into a computer which determines alleged "metabolic types," lists supposed problem areas, and recommends dietary changes and food supplements from a manufacturer chosen by the chiropractor. Neither the existence of the types nor the recommended nutritional strategies have been substantiated.

• Neuro Emotional Technique (NET) focuses on "releasing patients' emotional blocks stored in the body's memory." Its proponents claim that everyone has such blocks and that the body "replays" these old memories, which can adversely affect health. The practitioner then uses muscle-testing (applied kinesiology) to "isolate a troublesome event" and asks the patient to hold in mind a "snapshot" of the emotional state while the chiropractor adjusts the patient's spine and acupuncture points and prescribes supplement products and homeopathic remedies.

• NUTRI-SPEC testing is performed by measuring the patient's breathing rate, blood pressure, body temperature, pulse, breath-holding ability, blood pressure, pupil size, tongue thickness or coating, several characteristics of the patient's saliva and urine, abdominal reflexes, and certain other reflexes. NUTRI-SPEC's scoring system is then used to determine whether the patient is in or out of "water/electrolyte balance," "anaerobic/

Many chiropractors use elaborate systems that include a nutrition component. The numbers using such systems range from a few hundred to many thousands.

dysaerobic balance,” “acid/alkaline balance,” and “sympathetic/parasympathetic balance” and whether the patient has “sex hormone insufficiency,” “myocardial insufficiency,” “pineal stress,” “thymus stress,” or another fanciful condition. The findings are then used to recommend dietary changes and supplements that are purchasable from the company marketing the system.

‘Cookbook’ Approaches

Many supplement manufacturers offer nutritional products intended for the treatment of disease. The majority of these products do not work and are not legal to market for this purpose. In addition, many are marketed for conditions that chiropractors are not trained to diagnose or treat. Instead of making therapeutic claims openly, the manufacturers market through distributors who make the claims for them by sponsoring seminars at which speakers describe how to use the products. Some distributors give out manuals listing which products to use for which diseases.

Some manufacturers sell “glandular” products containing small amounts of freeze-dried animal tissue claimed to strengthen or rejuvenate the corresponding parts of the user’s body. Such claims make about as much sense as the primitive notion that eating the heart of a lion will make you courageous.

“Glandular” products are not legally permitted to contain hormones. Like plant-based oral enzyme products, their main ingredients are proteins that are broken down during digestion and exert no significant effect on body function.

Questionable Food Allergies

Some chiropractors use various test procedures that supposedly determine “hidden allergies” responsible for a broad range of diseases or symptoms. The most notorious of these was cytotoxic testing, which was performed by observing what happens to the patient’s white blood cells after they are placed onto slides containing dried foods.

Cytotoxic testing was banned by the FDA, but other tests are used for the same purpose. The most notable of these are ELISA/ACT and ALCAT testing. Some

chiropractors diagnose “food allergies” with a computerized galvanometer that merely reflects skin moistness and how hard the operator presses a probe against the patient’s skin.

Actual and Potential Harm

Most of the practices described above are used to varying degrees by offbeat medical doctors, dentists, naturopaths, acupuncturists, and various other practitioners who consider themselves qualified to do “nutrition counseling.” However, the number of chiropractors using them appears to be much higher than that of any other practitioner type.

Although no statistics indicate how much harm is associated with these practices, there is good reason to believe it is considerable. Most of the harm is economic. Supplements sold through chiropractic offices tend to be expensive, and some are recommended for lifelong use. Psychological harm occurs when healthy people are persuaded that they are ill. To this must be added the cost of unnecessary medical diagnostic procedures required to reassure patients that they do not have the diseases suggested by dubious tests. It also seems probable that chiropractors who think nonsensically about nutrition may be prone to other errors of professional judgment.

Physical harm, although uncommon, can occur when excessive dosages are prescribed. In 1992, a 50-year-old Pennsylvania woman, in apparently good health, was treated by a chiropractor for hip and leg pain resulting from an automobile accident. When the pain resolved, she told the chiropractor that she felt no further need for treatment. The chiropractor, who practiced Contact Reflex Analysis, then checked her “thyroid reflex,” said the woman had a “thyroid problem,” and recommended dietary supplements that contained significant amounts of io-

dine. The standard way to diagnose a thyroid problem is to take a medical history, perform an examination of the neck while the patient swallows, and order laboratory tests, but the chiropractor did none of these. The pills he prescribed contained more than ten times the Recommended Dietary Allowance of iodine. Within three months, they stimulated the woman’s thyroid gland to produce excessive amounts of thyroid hormone, which triggered weight loss, severe diarrhea, and other symptoms of thyroid toxicity. The iodine also triggered Graves disease, a thyroid condition in which the eyeballs bulge. Despite medical treatment, her eyeballs swelled enough to crush the optic nerves, which caused her to become legally blind.

Although some chiropractors give rational nutrition advice to their patients, it is clear that a substantial percentage of them do not. Despite their senselessness, nearly all of the approaches described here have been promoted by articles or advertisements in chiropractic publications, and a few have been promoted through chiropractic schools and organizations. They are very much a part of the chiropractic marketplace and have been subjected to little or no criticism by their colleagues or by professional organizations. In fact, some chiropractic organizations and publications encourage their use, suggesting that chiropractors are qualified to diagnose and treat a broad spectrum of disease. **NF**

Well-designed studies have found that iridologists who examined the same patients or photos of their eyes disagreed among themselves and were unable to state what was medically wrong.

This article was adapted from Inside Chiropractic: A Patient’s Guide (1999), a 280-page book written by Dr. Homola and edited by Stephen Barrett, M.D. Copies are available for \$23.95 plus postage from Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197; telephone (800) 421-0351. Further information about the book can be viewed at <http://www.chirobase.org/03Edu/C/homola.html>.

BRIEFS

[continued from page 17]

'INTERACTIVE FOODS'

Advertising Age has noted that several food companies have begun marketing foods that offer a playful element for children. The products include Kellogg Co.'s Wild Magicburst Pop-Tarts, which feature sprinkles that change colors when toasted; Quaker Oats's Dino Eggs, which hatch in hot water to reveal edible dinosaurs; General Mills Squeeze-It drink, which has marketed a crystal that changes the color of the drink when dropped into it; and Unilevel Good Humor's Tongue Splashes, a Popsicle product that "paints" the tongue and lips.

ANTIOXIDANT UPDATE

The American Heart Association's nutrition committee has issued a science advisory discussing relationships between antioxidants and heart disease (*Circula-*

tion, 1999;99:591-595). The statement concludes:

Considerable evidence now suggests that oxidants are involved in the development and clinical expression of coronary heart disease and that antioxidants may contribute to disease resistance. Consistent with this view is epidemiological evidence indicating that greater antioxidant intake is associated with lower disease risk. Although this increased antioxidant intake generally has involved increased consumption of antioxidant-rich foods, some recent observational studies have suggested the importance of levels of vitamin E intake achievable only by supplementation. There is currently no such evidence from primary prevention trials, but results from secondary prevention trials have shown beneficial effects of vitamin E supplements on some disease end points. In contrast, trials directly addressing the effects of beta-carotene supplements have not shown beneficial effects, and some have suggested deleterious effects, particularly in high-risk population subgroups.

In view of these findings, the most prudent and scientifically supportable recommendation for the general population is to consume a balanced diet with emphasis on antioxidant-rich fruits and vegetables and whole grains.

The full report is available online at <http://www.americanheart.org/Scientific/statements/1999/029901.html>.

BAD INFO ON DRUG/JUICE INTERACTIONS

A brochure recently distributed by the FDA and the National Consumers League contains false information regarding drug/juice interactions. The brochure, which has been released only to the press in advance, states that grapefruit juice can interact with the prescription drugs fexofenadine (Allegra) or loratadine (Claritin), resulting in a risk of serious heart problems. This information is without evidentiary value and will be removed from all future brochure printings. **NF**

[continued from page 19]

An article in the *Archives of General Psychiatry* (1998 Nov.;55[11]:1033-1044) described the evidence for kava as a treatment for insomnia and anxiety as "opinions...based on clinical experience, descriptive studies, or reports of expert committees." The evidence for kava's usefulness in seizure disorders was described as "insufficient...to warrant conclusions about efficacy or safety."

Safety Issues

A serious concern with kava is that like most dietary supplements, the long-term effects are unknown. Therefore, it clearly should not be taken by children or teens or by pregnant or lactating women.

In addition, kava should not be combined with alcohol or other central nervous system depressants since it may increase their effects. In 1996, a Georgia man began taking kava as he weaned himself off Xanax. He became ill and slipped in and out of consciousness. His physicians identified the interaction between kava and Xanax as the culprit. Otherwise, little is known about how kava may interact with prescription medicines or other

herbs like St. John's wort or valerian that also affect the central nervous system.

Another reported adverse reaction to kava is that it may interfere with dopamine and thus worsen Parkinson's disease, a condition of decreased dopamine activity in the brain. So patients with Parkinson's *should not take kava*. Also, at very high doses for long periods of time, biochemical abnormalities may occur (low levels of serum albumin, protein urea, and bilirubin), hypertension may develop, blood may appear in the urine, red blood cell volume may increase, platelet and lymphocyte counts may decrease, and shortness of breath may occur. Problems with equilibrium have also been reported.

Long-term use of kava beverages has been shown to cause "kava dermatopathy"—a condition of the skin characterized by a generalized scaly rash. It was thought at one time that this may be due to interference with niacin, but that does not appear to be the case. The only effective treatment for kava dermatopathy is a reduction or cessation of kava consumption.

A Dose of Caution

Large, well-designed, placebo-controlled studies are needed before it will be known

whether kava has a rational place in treating anxiety disorders and, if so, what dose may be appropriate and safe. Also, studies need to determine what other drugs or herbs kava may adversely interact with, and whether there are any other side effects with kava usage.

Ads for kava state that it will not decrease reaction time or the ability to concentrate, but given its reputation as a sedative, studies are needed to confirm this. Kava is sold without restrictions on its use. With little publicity about negative effects of kava, its easy accessibility may lead to tragic consequences.

Anyone suffering from anxiety serious enough to warrant treatment should be under professional care and not self-medicating with a questionable over-the-counter product. **NF**

Beth Fontenot is a freelance nutrition writer and the Nutrition Coordinator on the faculty of the Louisiana State University Medical Center-Shreveport Family Practice Residency Program at Lake Charles Memorial Hospital in Lake Charles, LA.

Book Reviews

Analysis and Ratings

The following reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Label Weirdness

Varro E. Tyler

What the Labels Won't Tell You by Logan V. Chamberlain (Loveland, CO: Interweave Press, 1998), 120 pp., \$9.95 paperback. ISBN 1-883010-49-7.

Titles and promotional statements on book covers greatly influence my expectation of their contents. On the cover of this volume on herbs are three bullet points listing the principal subjects covered. The first of these is "Choose the best manufactured products." I therefore expected a number of tables listing data from published scientific analyses of the active constituents of various herbal products. Such studies on feverfew, St. John's wort, garlic, ginseng, saffras, and yohimbe products have been carried out by various consumer organizations, as well as by the FDA and university laboratories. I thought perhaps the book might even contain some new ones not previously published, so I turned its pages in great anticipation.

Sadly, such information was entirely lacking. What I did find was the author's somewhat equivocal personal comments on a few herbal medicines.

For example, in discussing echinacea products, the author prefers a whole-plant product over a standardized extract because of the *potential* synergy among its constituents. He prefers a root product because he believes roots are less likely to be adulterated than dried plants. (Apparently he is unaware of the scandal in the

1980s involving adulteration of echinacea root with that of *Parthenium integrifolium*.) He prefers *E. purpurea* to *E. angustifolia* because more research has been done on the former, but then adds, "That doesn't mean it's better, though." He would choose a tincture over a capsule form because he *feels* that it would be faster acting (no comment on reduced stability of many compounds in solution).

The second bullet point on the cover reads, "Understand herb supplement labels." The author does a credible job in dissecting the label of encapsulated echinacea powdered herb. Omitted, however, is any comparison with the label of a standardized echinacea product. Many persons fail to understand exactly what standardization means and what to look for on the label of such products. Additional diagrams covering this would have been most helpful. In judging the continuing dispute between scientists who prefer standardized herbal extracts and traditionalists who prefer crude herbs, the author simply says, "Both are right."

The third bullet point promises information on how to "Design your own herbal program." After discussing his own wellness routine utilizing ginkgo biloba, saw palmetto, Siberian ginseng (eleuthero), bilberry, milk thistle, kelp, multivitamins, coenzyme Q10, and selenium, the author has this advice for readers: "It's up to you how far you want to go with treating your problems with herbal medicine. . . ."

A table recommending herbs for minor conditions includes such unproven remedies as goldenseal for colds and flu (it has no systemic activity on oral administration) and hops and passion flower for anxiety and stress (both unproven). Similar assertions are found throughout the book.

In my opinion, this volume fails to provide adequate information on two of the three specific subjects listed on the cover, and the third area is only partially explored. If you are looking for definitive advice on how to select the best quality herbal products, this volume will be of little assistance. The thorny problem caused by differences between labeled content and actual content of herbal preparations—perhaps the most significant issue facing herbal medicine today—is not even addressed.

NOT RECOMMENDED

Horse-and-Buggy Herbalism

Varro E. Tyler

Handmade Medicines: Simple Recipes for Herbal Health by Christopher Hobbs (Loveland, CO: Interweave Press, 1998), 120 pp., \$12.95, paperback. ISBN 1-883010-50-0.

Except for their use in the preparation of non-caffeine-containing beverage teas, the age of unstandardized ground-up herbs and products prepared from them is rapidly passing. Scientific herbal medicine based upon extracts standardized by sophisticated techniques such as high-performance liquid chromatography for a variety of constituents and subjected to controlled clinical testing in humans is rapidly replacing such outmoded usage.

This causes one to view a 1998 book devoted to *Handmade Medicines* in the same light as a post-Henry Ford volume on the manufacture of buggy whips. With so many high-quality, standardized, clinically tested herbal products available in pharmacies, health-food stores, and supermarkets of all kinds across the nation, this volume, dealing largely with what once was, is principally of historical interest to persons other than herbal Luddites.

I shall skip over the introductory chapters, except to mention that the section "The Top Medicinal Garden Herbs" must be read with caution: burdock is not an antibiotic, that designation being reserved for products of microorganisms; California poppy has never been proven safe for children; unless analyzed to assure minimal pyrrolizidine alkaloid content, comfrey should not be taken internally; so many chemical races of feverfew exist that one

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simply cannot tell without testing if a plant is active or not; the heating and cooling effects of Asian and American ginseng are Asian philosophical concepts, not supported by science; simple filtering does not produce the necessary sterility required to assure safety of goldenseal eyewash; hops have never been proven to facilitate sleep; and so on and so on.

The chapter "Preparing Herbs for Use" is generally quite good but somewhat limited in scope. It would have been helpful to explain the differences between tinctures, which are discussed, and flu-

idextracts and extracts, which are not. The latter term, in particular, is much misused in herbal medicine. No discussion of encapsulation of powdered herbs, also easily carried out at home, is included.

Some formulas for tinctures, oils, salves, and the like are provided in the chapter "The Recipes: Combining Herbs for Healing," but the majority are for herbal teas. Many of these contain six or seven ingredients and are thus more reminiscent of Chinese or European traditional medicine than of simple herbal recipes. Needless to say, the effectiveness

of such complex mixtures has never been scientifically validated.

If you are curious about how some types of herbal dosage forms are prepared, this book will provide easily understood explanations. If you want to use an herbal remedy for maximum and uniform effects, purchase a standardized, clinically tested product marketed by a reliable manufacturer. **NF**

NOT RECOMMENDED

SCIENCE MEETS ALTERNATIVE MEDICINE

Conference tapes now available

Audio tapes of the landmark CSICOP/*Scientific Review of Alternative Medicine* conference "Science Meets Alternative Medicine" are now available. Hear the entire conference, including all concurrent sessions, on 17 90-minute audio cassettes, or order the sessions you wish to hear. A 10% discount on the full-conference set of tapes.

PLENARY SESSIONS

- SESSION I—Opening Addresses**
Paul Kurtz,
Wallace Sampson
(1) tape: \$7.25
- SESSION II—Science and Alternative Medicine: Exploring Points of Conflict**
Robert Park: "Physics and Homeopathy"
Saul Green: "Biochemistry and Cancer"
William Jarvis: "Biology and 'Life Forces'"
Timothy Gorski: "How Prevalent Is Alternative Medicine?: Examining the Eisenberg Study"
(2) tapes: \$14.50
- SESSION III—Keynote Address by George D. Lundberg, M.D., former editor of the *Journal of the American Medical Association***
(1) tape: \$7.25
- SESSION IV—Alternative Medicine and the Psychology of Belief and Perception**
James Alcock: "The Psychology of Belief"
Barry Beyerstein: "Why Worthless Therapies Seem to Work"
John Renner: "Personal 'Conversions' to Alternative Medicine Therapies"
Steve Novella: "The Theory of 'Hidden Cures'"
(2) tapes: \$14.50
- SESSION V—Banquet Entertainment**
Presentation of Historic Quack Medical Devices by Robert McCoy, director of the Museum of Questionable Medical Devices
(1) tape: \$7.25
- SESSION VI—Scientific Critiques of AM Therapies and Theories**
Willem Betz: "The Crisis of Herbal Cures in Europe"
William Jarvis: "Acupuncture"
Stephen Barrett: "Chiropractic"
Barry Beyerstein: "Naturopathy"
Wallace Sampson: "Mind/Body Therapies"
Rebecca Long: "A Study of Therapeutic Touch"
Rosemary Jacobs: "A Tragedy of Colloidal Silver"
(3) tapes: \$21.75
- SESSION VII—Keynote Address by Marcia Angell, M.D., editor of the *New England Journal of Medicine***
(1) tape: \$7.25

CONCURRENT SESSIONS

- SESSION VIII—Alternative Medicine and Medical Ethics**
Dónal P. O'Mathúna: "Therapeutic Touch: What Is the Harm?"
Lawrence J. Schneiderman: "The Ethics of Alternative Medicine"
Lewis Vaughn: "Believing Without Evidence: The Ethics of Promoting Unproven Treatments"
(2) tapes: \$14.50
- SESSION IX—Alternative Medicine, Government, and the Law**
Stephen Barrett: "The FDA and Unproven Health Claims"
Willem Betz: "Alternative Medicine and European Governments"
(2) tapes: \$14.50
- SESSION X—Educating Physicians and Consumers**
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John Renner: "Critical Thinking for Physicians"
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FTC ATTACKS 'VITAMIN O' PROMOTION

A federal court judge has ordered Rose Creek Health Products and The Staff of Life—both owned by Donald L. Smyth—to stop making unsubstantiated claims about their "Vitamin O." The defendants had advertised that (a) many people suffer disease and diminished health as a result of oxygen deprivation caused by pollution, deforestation, stress, or other causes; (b) "Vitamin O" contains "nearly 30,000 parts per million of dissolved "stabilized oxygen"; (c) oral administration would cause oxygen to be absorbed into the body through the gastrointestinal system and enrich the oxygen content of the bloodstream; (d) this would provide the amount of oxygen needed for optimum health; and (e) the product was effective against cancer, cardiovascular disease, lung disease, and many other health problems. About a dozen other companies are making various false claims for "stabilized oxygen" products.

ANTIOXIDANTS AND MACULAR DEGENERATION

A team of Australian researchers has found no association between age-related maculopathy (ARM) and antioxidants among 3,654 subjects age 49 or older, of whom 2,900 (74.9%) kept detailed food records (*Ophthalmology* 1999;106:761-767). The study found no statistically significant association between ARM and dietary intake of either beta carotene, zinc, or vitamins A or C, either from diet, supplements, or both. Other published studies have had conflicting results, with some finding correlations and others finding none.

TASTY NEW VEGETABLE

Broccolini, also called baby broccoli, is a cross between broccoli and Chinese kale that resembles asparagus, tastes milder and sweeter than broccoli, but is less fibrous. Developed by the Sakata Seed America of Morgan Hill, California, it is grown in California and Arizona. An eight-stalk portion provides 35 calories, 1g dietary fiber, 3g protein, 2g sugars,

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Sizing Up Naturopathy *Sense and nonsense in nutrition and health*

by Stephen Barrett, MD

Naturopathy, sometimes referred to as "natural medicine," is a vitalistic and largely pseudoscientific approach said to "assist nature." Naturopaths assert that diseases are the body's effort to purify itself, and that cures result from increasing the patient's "vital force." They claim to stimulate the body's natural healing processes by ridding it of waste products and "toxins." The American Association of Naturopathic Physicians (AANP) states that "naturopathic medicine has its own unique body of knowledge, evolved and refined for centuries" and is "effective in treating all health problems, whether acute or chronic." According to a 1989 AANP brochure:

The main difference [between naturopathic and conventional medicine] is in philosophic approach. Naturopathic physicians treat patients by restoring overall health rather than suppressing a few key symptoms. Naturopathic physicians are more concerned with finding the underlying cause of a condition and applying treatments that work in alliance with the natural healing mechanisms of the body rather than against them. Naturopathic treatments result less frequently in adverse side effects, or in the chronic conditions that inevitably arise when the cause of disease is left untreated.

A Brief History

Modern-day naturopathy can be traced to the concepts of Sebastian Kneipp (1821-1897), Benedict Lust (1872-1945), Henry Lindlahr (1853-1925), Bernarr

Macfadden (1868-1955), and John H. Tilden, MD (1851-1940). Father Kneipp, a German priest, opened a "water cure" center after becoming convinced that he and a fellow student had cured themselves of tuberculosis by bathing in the Danube River. Kneipp also developed herbal methods using whole plants. Lust, also German, was treated by Kneipp and in 1892 was commissioned to establish Kneipp's practices in the United States. In 1895, he opened the Kneipp Water-Cure Institute in New York City and began forming Kneipp Societies whose members had been using Kneipp's methods or other "drugless therapies." Subsequently, he acquired degrees in osteopathy, chiropractic, homeopathic medicine, and eclectic medicine.

In 1901, Lust organized a national convention and chaired a committee that endorsed the use of massage, herbs, homeopathy, spinal manipulation, and various types of occult healing. In 1902, he purchased the rights to the term "naturopathy" from John H. Scheel, another Kneipp disciple, who had coined it in 1895. That same year, he began referring to himself as a naturopath, opened the American Institute of Naturopathy, and replaced the Kneipp Societies with a national naturopathic organization. Lindlahr further systematized naturopathy and opened a sanitarium and a school in a Chicago suburb. Macfadden popularized exercise and fasting. Tilden contributed notions about "auto-intoxication" (said to be caused by fecal matter remaining too long in the intestines) and "toxemia" (al-

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leged to be “the basic cause of all diseases”).

Naturopathy’s grandiose claims attracted the sharp pen of Morris Fishbein, MD, who edited the *Journal of the American Medical Association* and spearheaded the AMA’s antiquackery campaign for several decades. During the 1920s he noted:

Whereas most cults embrace a single conception as to the cause and healing of disease, naturopathy embraces everything in nature. . . . The real naturopaths were, of course, such healers as Father Kneipp . . . and others whom advocated natural living and healed by use of sunlight, baths, fresh air, and cold water, but there is little money to be made by these methods. Hence the modern naturopath embraces every form of healing that offers opportunity for exploitation.

The practices Fishbein debunked included: aeropathy (baking the patient in a hot oven); Alereos system (spinal manipulation plus heat and mechanical vibration); astral healing (diagnosis and advice based on reading the patient’s horoscope); autohemic therapy (giving a solution made by modifying and “potentizing” a few drops of the patient’s blood); autotherapy (treating infections with potions made from the patient’s infected tissues or excretions); biodynamochromic diagnosis and therapy (administering colored lights while thumping on the patient’s abdomen); bloodwashing (with herbs); chromopathy (healing with colored lights); electrotherapy (with various devices); geotherapy (treating disease with little pads of earth); irido-diagnosis (diagnosis based on eye markings—now called iridology); pathiatry (self-administration of spinal adjustment, massage, and traction); porotherapy (treatment applied through the pores of the skin to the nerves said to control internal organs); practotherapy (a fancy term for intestinal irrigation); sanatology (based on the notion that acidosis and toxicosis are the two basic causes of all disease); somapathy (spinal adjustment followed by applications of cold or extreme heat); tropo-therapy (special nutritional foods); Vit-O-Pathy (a combination of 36 other systems); zodiac therapy (combining astrology and herbs);

and zonotherapy (pressing on various parts of the body to heal disease in designated body “zones”—now called reflexology). Most of these methods disappeared along with their creators, but some (or their offshoots) are still used today.

Education

A 1927 AMA study listed 12 naturopathic schools with fewer than 200 students among them. During the 1920s and 1930s, about half the states passed laws under which naturopaths and/or “drugless healers” could practice. However, as modern medicine developed, many of these laws were repealed and all but a few mail-order schools ceased operations. The doctor of naturopathy (ND) degree was still available at several chiropractic colleges, but by 1961, the last of these colleges stopped issuing it. The National College of Naturopathic Medicine (NCNM) was founded in 1956 in Portland, Oregon, but, until the mid-1970s, had very few students. From 1960 through 1968, the average enrollment was eight, and the total number of graduates was 16.

Today the ND credential is available from four full-time schools of naturopathy and at least seven nonaccredited correspondence schools. Training at the full-time schools follows a pattern similar to that of chiropractic schools: two years of basic science courses and two years of clinical work. Three years of preprofessional college work are required for admission. The leading naturopathy school, Bastyr University, in Seattle, Washington, was founded in 1978. Besides its ND program, Bastyr offers a BS degree program in Natural Health Sciences with majors in nutrition and oriental medicine; a BS program in psychology; BS and MA programs in applied behavioral sciences; MS programs in nutrition and acupuncture/oriental medicine; and a certificate in midwifery. Bastyr has also provided health-food retailers and their employees with home-study programs that promote “natural” approaches for the gamut of diseases. Students in the naturopathic degree program are required to take three courses in homeopathy and can elect to take three more.

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Can Vitamin E Prevent Heart Disease?

To E or not to E?

by Beth Fontenot, MS, RD

Some of the most interesting nutrition research in recent years has produced preliminary evidence that large doses of vitamin E may reduce the occurrence of heart attacks. As a result, vitamin E has received a great deal of media attention, prompting consumers to spend \$300 million a year on vitamin E supplements. A few health and nutrition experts are ready to jump on the bandwagon and recommend supplementation, but others are asking whether the evidence really warrants such a move.

Judging by sales, vitamin E is one of the most sought-after dietary supplement among Americans. The nutrient is popular, it seems, even among professionals.

And no wonder. The claims for the nutrient's benefits are prevalent and appealing. "Health-food" literature and the media would have us believe that taking vitamin E will prevent arthritis, cataracts, stroke, diabetes, cancer, and heart disease. In addition, it's supposed to boost the immune system, ease symptoms of premenstrual syndrome, delay symptoms of Alzheimer's disease, and protect the body from aging.

Vitamin E Basics

Vitamin E was discovered in the 1920s when rats fed a basic diet became unable to reproduce viable offspring but were cured when given tocopherol, a substance that had been isolated from vegetable oils. In fact, the term "tocopherol" comes from Greek words meaning "to bear offspring." Vitamin E became the name given to a group of eight fat-soluble compounds—four tocopherols (designated alpha, beta, gamma, and delta) and four tocotrienols (designated with the same Greek letters). It was not until 1966 that vitamin E was considered essential for humans.

All of these compounds have different degrees of biological activity. The

most active form of the vitamin is the "d" isomer of alpha-tocopherol, which is found in many supplements. Recent research has indicated that other forms, such as gamma-tocopherol, may also be important to the body. Though gamma-tocopherol has only one-tenth the biological activity of alpha-tocopherol, it is more widely distributed in foods. It's found in foods such as sunflower seeds, almonds, and wheat germ.

Vitamin E requires the presence of fats and bile in the gut to be absorbed. The degree to which vitamin E is absorbed by the body is dependent on the total absorption of dietary fat. Absorption can be as high as 70%. However, when taken in doses well above the Recommended Dietary Allowance (RDA), the absorption rate of vitamin E drops to less than 10%. Vitamin E travels through the body by way of chylomicrons and other lipoproteins, and it is distributed to almost all tissues in the body. It is most concentrated in tissues containing an abundance of fatty acids, such as cell membranes.

The primary function of vitamin E appears to be to act as an antioxidant. When incorporated into the lipid portion of cell membranes and carrier molecules, it protects these structures from toxic compounds, heavy metals, drugs, radiation, and free radicals. It also appears to protect cholesterol from oxidative damage.

The recommended intake for vitamin E is expressed in alpha-tocopherol equivalents (α -TE). One α -TE is equal to 1 mg of alpha-tocopherol. Vitamin supplement labels usually express vitamin E content in IUs (international units). One IU is equal to 1 mg of synthetic vitamin E or about 0.74 mg of natural α -tocopherol. The current RDA for vitamin E is 10 mg for men (15 IU) and 8 mg (12 IU) for

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WEB WATCH

This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc., which is working hard to improve the quality of health information on the Web. He now operates three Web sites: Quackwatch (<http://www.quackwatch.com>), Chirobase (<http://www.chirobase.org>), and MLM Watch (<http://www.mlmlwatch.org>).

BEST

Health Scout (<http://www.healthscout.com>) publishes weekly Web site ratings by NF editorial board member John Renner, MD. To access the reviews, use the search box with the word "Renner."

Children and Adults with Attention Deficit/Hyperactivity Disorder (CHADD) (<http://www.chadd.org>) provides comprehensive information about AD/HD, including an excellent fact sheet on "controversial treatments."

WORST

The International Center for Nutritional Research (<http://www.icnr.com>) is the business name under which Gerald H. Smith, DDS, of Langhorne, Pennsylvania, dispenses misinformation and markets questionable supplements, devices, books, and other educational materials. The "ICNR Store" link leads to most of the site's dubious promotions.

The Synergy Group of Canada (<http://216.71.26.86/truehope>) provides an online newsletter and invites people with six types of mental or neurologic disorders to submit their symptoms, get nutritional recommendations, and report their experience as part of a "research" process. The site also contains reports of people who say they or their children have benefited from supplementation.

The Soil and Health Library (<http://soilandhealth.org/>) contains sections on Natural Hygiene (a naturopathic offshoot) and "longevity and nutritional anthropology." The "Health Library" section contains full-text versions of several out-of-print books about "toxemia," fasting, alleged vaccination dangers, and other naturopathic concepts.

vitaminbuzz.com promotes dietary supplements, herbs, and homeopathic products, which can be purchased online. The site is sponsored by Vitamin Shoppe, Inc., which also operates a discount mail-order service and many retail stores on the East Coast. A recent press release stated that the site is "the most comprehensive informational health resource on the Internet" and is "geared toward savvy consumers who want usable answers to tough health questions."

The Southwest College of Naturopathic Medicine and Health Sciences in Scottsdale, Arizona, was founded in 1992. The University of Bridgeport College of Natural Medicine in Bridgeport, Connecticut, began classes in 1997. Naturopathy schools receive much of their financial support from companies that market dietary supplements, homeopathic products, and/or herbal remedies.


In 1987, the U.S. Secretary of Education approved the Council on Naturopathic Medical Education (CNME) as an accrediting agency for the full-time schools. As with acupuncture and chiropractic schools, this recognition is not based upon the scientific validity of what is taught but on such factors as record-keeping, physical assets, financial status, makeup of the governing body, catalog characteristics, nondiscrimination policy, and self-evaluation system. NCMN, Bastyr, and Southwest are accredited.

The total number of practitioners is unknown but includes chiropractors and acupuncturists who practice naturopathy. The AANP was founded in 1986 and is closely allied with the four-year naturopathic colleges. Its membership is said to be limited to individuals who are eligible for licensing in states that issue licenses. Its online directory contains about 500 names. The American Naturopathic Medical Association (ANMA), founded in 1981, claims to represent about 2,000 members worldwide. Although some have recognized credentials in other health disciplines, others merely have an "ND" degree obtained through a nonaccredited correspondence school. The Homeopathic Academy of Naturopathic Physicians (HANP), which requires a recognized professional degree and additional homeopathic training, lists about 50 members.

The AANP publishes the *Journal of Naturopathic Medicine*, which has been

issued six times between 1990 and 1996. The issues have run from about 80 to 100 pages. The third issue is devoted to "Non-Standard HIV/ARC/AIDS Management." The fifth, which attacks immunization, contains papers suggesting that vaccines may be a factor in causing cancer and that homeopathic prophylaxis using nosodes would be effective and safer than standard vaccines. (Nosodes are dilute products made from pathological organs or tissues:

causative agents such as bacteria, fungi, ova, parasites, virus particles and yeast; disease products; or excretions.) The sixth issue promotes the use of "natural" products for cancer and contains an absurd article claiming that measuring the electrical resistance of the skin may be a useful way to diagnose the early stages of cancer and AIDS.


**Naturopathic
licensing boards
have done little or
nothing to protect
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quackery.**

Legal Status

Naturopaths are licensed as independent practitioners in eleven states and the District of Columbia and can legally practice in a few others. The AANP and the four-year schools have joined forces to press for licensure in the remaining states. They assert that licensing is needed to protect the public from unqualified practitioners. However, the existing naturopathic licensing boards have done little or nothing to protect the public from naturopathy's widespread quackery.

Since the proposed laws would set educational requirements that many of ANMA's members could not meet, ANMA has vigorously opposed the licensing efforts. The National Council Against Health Fraud has pointed out:

The difference between more and less educated naturopaths is . . . like comparing more and less educated witch doctors. It could actually be argued that less schooled naturopaths are safer because they may have a smaller bag of tricks and, because they don't consider themselves "primary health physicians" are more apt to refer patients to MDs for additional care.

Naturopathic services are not covered by Medicare or most insurance policies. Expansion of naturopathic licensing will make naturopaths appear more legitimate and could help them gain passage of laws forcing insurance companies to cover their services.

Scope of Practice

Most naturopaths allege that virtually all diseases are within the scope of their practice. They offer treatment at their offices and at spas where patients may reside for several weeks. Their current methods include fasting; "natural food" diets; vitamins; herbs; tissue minerals; homeopathic remedies; cell salts; manipulation; massage; exercise; colonic enemas; acupuncture; Chinese medicine; natural childbirth; minor surgery; and applications of water, heat, cold, air, sunlight, and electricity. Radiation may be used for diagnosis, but not for treatment. Many of these methods are said to "detoxify" the body.

Naturopaths assert that their "natural" methods, when properly used, rarely have adverse effects because they do not interfere with the individual's inherent healing abilities. This claim is nonsense. Any medication (drug or herb) potent enough to produce a therapeutic effect is potent enough to cause adverse effects. Drugs should not be used (and would not merit FDA approval) unless the probable benefit is significantly greater than the probable risk. Moreover, medically used drugs rarely "interfere with the healing processes." The claim that scientific medical care "merely eliminates or suppresses symptoms" is both absurd and pernicious.

The most comprehensive naturopathic publications are *A Textbook of Natural Medicine* (for students and professionals) and two editions of the *Encyclopedia of Natural Medicine* (for laypersons). The text, which has more than 40 contributors and more than a thousand pages, was issued in 1986 and updated with loose-leaf inserts until 1996. A bound second edition is scheduled for publication this year. The encyclopedia had 630 pages in its first (1990) edition and has 958 in the second (1998) edition. Joseph E. Pizzorno, ND, presi-

dent of Bastyr University, and Michael T. Murray, ND, a faculty member, edited the textbook and coauthored the encyclopedia. Both books recommend questionable dietary measures, vitamins, minerals, and/or herbs for more than 70 health problems ranging from acne to AIDS. For many of these conditions, daily administration of ten or more products is recommended—some in dosages high enough to cause toxicity. Some treatments are recommended even though the authors indicate that the evidence supporting them is preliminary, speculative, or even conflicting. Both books discuss dubious diagnostic tests as though they have validity.

Pizzorno and Murray have claimed that “in most instances, the naturopathic alternative offers significant benefits over standard medical practices.” For the few illnesses where their encyclopedia acknowledges that medical treatment is essential (because otherwise the patient may die), they propose naturopathic treatment in addition. In many passages, they describe prevailing medical practices inaccurately.

The encyclopedia claims, for example, that medical treatment of hypothyroidism involves the use of desiccated thyroid or synthetic thyroid hormone, but that naturopaths prefer desiccated thyroid. Pizzorno and Murray also claim that “health-food-store thyroid preparations . . . may provide enough support” to help a mild thyroid problem, even though the FDA requires such products to be hormone-free. Scientific physicians consider desiccated thyroid (made from dried animal glands) inferior because its potency can vary from batch to batch. Synthetic thyroid hormone does the job efficiently. Using a product that might contain no hormone is even more ridiculous. The book also claims (incorrectly) that taking one’s armpit temperature upon awakening is a reliable test for thyroid function.

The chapter on angina gives a glowing recommendation for chelation therapy, which the scientific community regards as worthless. The chapter on “detoxification” claims that 25% of Americans suffer from heavy-metal poisoning and advocates periodic fasting plus various supplements and herbs. The

chapter on “cellulite” claims that a gotu kola extract has “demonstrated impressive results.” The “Candidiasis” chapter espouses Dr. William Crook’s fad diagnosis of “candidiasis hypersensitivity” and includes Crook’s three-page questionnaire for determining the probability that “yeast-connected problems are present.” The questionnaire does not have the slightest validity.

The AANP claims that “naturopathic physicians are not opposed to invasive and suppressive measures when these methods are necessary [and] make referrals for such treatment when appropriate.” I doubt that the majority of naturopaths fit this description. Many naturopaths espouse nutrition and lifestyle measures that coincide with current medical recommendations. However, this advice is often accompanied by nonstandard advice that is irrational. Although naturopaths claim to emphasize prevention, most oppose or are overly critical of immunization.

Recently, as part of a child-custody evaluation, I examined records from nine naturopaths who had treated a child whose mother was antagonistic to medical care and was briefly enrolled as a naturopathy student. The child was not properly immunized and did not see a medical doctor until she developed insulin-dependent diabetes mellitus (IDDM) shortly before her eighth birthday. Although episodes of “chest congestion,” “chronic cough,” “vaginitis,” “urinary burning,” and “asthma” were noted in the records, there were no indications that these problems had been adequately diagnosed or appropriately treated. (One episode of “chest congestion,” for example, was treated with homeopathic remedies.) Three of the practitioners used a Vegatest device to diagnose “allergies” to sugar and many other foods and had recommended severe dietary restrictions, even though the child had not reacted adversely to any of the foods. (The Vegatest is a quack device that merely measures the amount of moisture on the skin

and how hard the practitioner presses a probe against the patient’s fingers or toes.) Another practitioner recommended chelation therapy after diagnosing “heavy-metal poisoning” with a hair analysis. The recommended treatments for both actual and nonexistent conditions included regimens of up to 35 pills a day, including some supplements in potentially toxic doses. The only medical referral took place after the child developed severe signs of diabetes. Although the nine naturopaths do not constitute a random sample, their unscientific practices were consistent with typical naturopathic writings.

The Bottom Line

In 1968, the U.S. Department of Health, Education, and Welfare (HEW) recommended against Medicare coverage of naturopathy. HEW’s report concluded:

Naturopathic theory and practice are not based upon the body of basic knowledge related to health, disease, and health care which has been widely accepted by the scientific community. Moreover, irrespective of its theory, the scope and quality of naturopathic education do not prepare the practitioner to make an adequate diagnosis and provide appropriate treatment.

Although some aspects of naturopathic education have improved in recent years, I believe this conclusion is still valid. I believe that the average naturopath is a muddlehead who combines commonsense health and nutrition measures and rational use of a few herbs with a huge variety of unscientific practices and antimicrobial double-talk. **NF**

Dr. Barrett, a retired psychiatrist who resides in Allentown, Pennsylvania, is board chairman of Quackwatch, Inc. and a board member of the National Council Against Health Fraud. The Quackwatch Web site (<http://www.quackwatch.com>) contains additional information on naturopathy and links to most of the organizations mentioned in this article.

Although naturopaths claim to emphasize prevention, most oppose or are overly critical of immunization.

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2g other carbohydrates, 30% of the Daily Value for vitamin A (as beta-carotene), 130% of vitamin C, 6% of calcium, and 4% of iron. The cost is similar to that of asparagus. Retailer locations are available by e-mail from info@broccoli.com or by calling (800) 884-6266.

VITAMIN A AND HIP FRACTURES

A Swedish study has found a positive association between high retinol (vitamin A) intake and the incidence of osteoporosis and hip fractures in women (*Annals of Internal Medicine* 1998;129:770-778).

DIETARY FAT AND BREAST CANCER

An analysis of data from the Nurses' Health Study, which followed 88,985 women from 1980 through 1994, has found no evidence that a low intake of fat reduced the incidence of breast cancer. The researchers noted, however, that a low intake of saturated fat was still desirable for preventing heart disease (*JAMA* 1999;281:914-920).

EGGS AND BLOOD CHOLESTEROL LEVELS

An eight-year study has concluded that consuming up to one egg per day is unlikely to have substantial overall impact on the risk of coronary heart disease or stroke among healthy men and women, but may be unhealthy for diabetics (*JAMA* 1999;281:1387-1394). For a reprint, contact Frank B. Hu, MD, Dept. of Nutrition, Harvard School of Public Health, 665 Huntington Ave., Boston, MA 02115.

MILK TASTE TESTS

Blinded tests conducted this year by the Bethlehem (PA) Health Bureau have found that most people have difficulty distinguishing between whole milk, 2% milk, 1% milk, and skim milk. Of 1,512 participants, only 98 (6%) correctly identified all four kinds. The study also found that 93% said they liked the flavor of 1% or skim milk. A similar study conducted in 1998 in nearby Allentown found that only 5% of the participants

correctly identified the four types and that 85% said they liked 1% or skim milk. The study was performed as part of a program to persuade residents to lower the fat content of their diet. Following the test (plus other educational activities), 68% of whole and 2% milk drinkers said they would switch to 1% or skim milk, and sales at five participating supermarkets reflected a 5% switch that Health Bureau officials regarded as significant (*The Morning Call*, Allentown, PA, April 2, 1999).

OTC GROUP EXPANDING FOCUS

The Nonprescription Drug Manufacturers' Association has voted to change its name to Consumer Healthcare Products Association and to refer to its members as "producers of quality nonprescription medicines and dietary supplements for self-care." The change was made because several members are marketing supplements and others are expected to follow. According to a report in *Natural Foods Merchandiser*, the change signals that OTC manufacturers will increase their involvement in regulatory, legislative, and educational matters related to supplements.

QUESTIONABLE GROUP

EarthSave International, with about 40 chapters worldwide, promotes vegan eating and claims to be "the only international organization dedicated to educating people about the powerful connections between our food, our health and the environment, with the mission of helping to create a better world by promoting the benefits of healthy and life-sustaining food choices." John Robbins founded it in 1988 after many readers responded to his 1987 book *Diet for a New America*. His 1996 book, *Reclaiming Our Health*, promotes "alternative" methods and falsely portrays antiquackery efforts as totalitarian. Experts who analyzed EarthSave brochures distributed in 1995-96 in the Louisville, Kentucky, School District concluded that they contained many false or misleading statements (*Scientific Review of Alternative Medicine* 1998;2[1]:36-42).

MELATONIN PROBLEM

Tests at the University of Maryland School of Pharmacy revealed problems with the

quality of 5 out of 11 melatonin products (*Journal of the American Pharmaceutical Association* 1999;39:237-231). Some immediate-release products did not dissolve properly. One time-release product reached 90% release in 4 hours, while the other took 12 hours. Variations in bio-availability can make it difficult to predict the effect of such products.

NOTABLE QUOTE

"The new National Institutes of Health (NIH) directives label [55%] of Americans overweight and instruct their doctors to try to motivate them to lose weight, even though they can offer no safe and effective ways to do this. Unfortunately, these recommendations can do a great deal of harm, and there is no evidence they can benefit people or help them lose weight in a lasting way. Claiming to be evidence-based, the guidelines bring together much valuable background information, but offer no help for today. Rather, they are dangerous in that they focus on weight loss, not health. Instead of improving health, they will likely increase weight cycling and the obsession with thinness, and put even more dieting pressure on children and young girls."—Frances M. Berg, Editor, *Healthy Weight Journal*.

ALGAE WARNING

The Canadian Health Protection Branch has warned that blue-green alga products have been found to contain microcystin levels that exceed those considered safe for daily consumption. Microcystins, which some alga species naturally produce, accumulate in the liver and can cause liver damage. The contamination potential appears greatest for products made from the algae in natural lakes. Adverse symptoms from long-term use of these products (weeks to months) may not be obvious, but could range from a feeling of general malaise or gastrointestinal discomfort to jaundice. Children appear more sensitive to these effects, which are more likely to manifest as nausea, vomiting, or diarrhea. The agency also noted that it has not received any evidence that blue-green algae is effective against attention deficit disorder in children and has not authorized the marketing of any blue-green algae product for any therapeutic purpose. **NF**

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women. The RDA can be met with a tablespoon of corn oil.

Since many people medicate themselves with large amounts of vitamin E, it is fortunate that its toxicity is relatively low. However, the known toxicity of the other fat-soluble vitamins suggests that caution should be taken with long-term megadoses of vitamin E. High intakes of vitamin E can interfere with intestinal absorption of vitamins A and K. And at dosages exceeding 1,000 mg per day, vitamin E has been shown to enhance the effects of Coumadin therapy and to be antagonistic to the blood-clotting action of vitamin K.

Vitamin E and Heart Disease

The oxidation of lipoproteins appears to play an important role in the development of atherosclerosis, the disease process that leads to heart attacks as well as strokes. Considerable evidence exists that antioxidant vitamins from both the diet and from supplements may prevent lipoprotein oxidation and its biological effects in the body. The strongest evidence seems to be for vitamin E.

Support for the role of antioxidant vitamins in heart disease prevention has come from observational studies, particularly two cohort studies that were published in 1993. In the first study, the Nurses' Health Study, the researchers concluded that among over 85,000 middle-aged women in the study, there was a 40% reduced risk of coronary artery disease for those who took vitamin E supplements compared to those who did not (*N Engl J Med* 1993;328: 1444-9). The second study, the Health Professionals Follow-up Study, involved over 39,000 males and provided evidence of a significant association between a high intake of vitamin E from supplements and a lower risk of heart disease (*N Engl J Med* 1993; 328:1450-1456).

Though these observational studies have pointed to the possibility of beneficial effects of vitamin E, they cannot establish cause and effect. And there has been very little direct evidence of benefit from randomized trials, which can establish a causal connection. Recently pub-

lished results from the Alpha-Tocopherol, Beta-Carotene Cancer Prevention (ATBC) Study did not support the results of the observational studies. This randomized trial tested the effects of daily doses of 50 IU of vitamin E, 20 mg of beta carotene, both, or placebo on over 29,000 male smokers for five to eight years. The researchers found that with vitamin E supplementation, there was an increase in the risk of hemorrhagic stroke. And with beta-carotene supplementation, there was an increase in mortality from lung cancer and ischemic heart disease. This trial raised the possibility that antioxidant supplements may have harmful as well as beneficial effects (*N Engl J Med* 1994; 330:1029-1035).

Two more recently published observational studies produced conflicting results. In a seven-year study of over 34,000 postmenopausal women, researchers found that the intake of vitamin E from food was inversely associated with the risk of death from heart disease and concluded that postmenopausal women could lower their risk of heart disease without using supplements (*N Engl J Med* 1996; 334:1156-1162). However, in the Rotterdam Study, researchers did not find an association between dietary vitamin E and heart disease in an elderly population (*Am J Clin Nutr* 1999;69:261-266).

Last March at the Conference on Cardiovascular Disease Epidemiology and Prevention, Dr. Lori Mosca of the University of Michigan presented a study suggesting that vitamin E supplements provide little benefit to health and may cause harm in women after menopause. The study found that women who obtained vitamin E from their diet experienced significant reductions in LDL oxidation while the women who obtained vitamin E from supplements experienced increased LDL oxidation. Dr. Mosca believes that it may be the gamma-tocopherol in food that is protective instead of alpha-tocopherol found in supplements.

The results of secondary prevention trials (and those with known heart disease) have been more supportive of potential benefits of antioxidant vitamins. The Cambridge Heart Antioxidant Study (CHAOS) examined the effects of 400 to 800 IU of alpha-tocopherol on subsequent cardiovascular events. The risk of heart

attack and other cardiovascular events was reduced in the group receiving vitamin E supplements (*Lancet* 1996;346: 781-786). A secondary analysis of the ATBC study also found that the risk of a second heart attack was reduced in those taking vitamin E supplements (*Lancet* 1997;349:1714-1720).

AHA Position

According to a recent Science Advisory from the American Heart Association (AHA), there are not enough data on the long-term safety and efficacy of vitamin E supplementation to justify any population-wide recommendations for supplementation for the primary prevention of heart disease. The advisory also states that the role of vitamin E in secondary prevention is encouraging and leaves open the possibility of future recommendations regarding vitamin E supplementation in those with heart disease if further studies confirm the findings (*Circulation* 1999; 99:591-595).

It is still unknown whether there are serious negative effects associated with taking vitamin E supplements. It is also unknown whether some other unidentified component in foods may actually be responsible for a reduced risk of heart disease. The Food and Drug Administration (FDA) is examining the scientific data to determine whether there is adequate evidence to support a health claim for antioxidants and disease prevention. A decision is expected next year.

Over time, a clearer picture should emerge, but for now, the AHA advises that based on current knowledge about vitamin E (and other antioxidant vitamins), "the most prudent and scientifically supportable recommendation for the general population is to consume a balanced diet with emphasis on antioxidant-rich fruits and vegetables and whole grains." **NF**

Beth Fontenot is a freelance nutrition writer and the Nutrition Coordinator on the faculty of the Louisiana State University Medical Center-Shreveport Family Practice Residency Program at Lake Charles Memorial Hospital in Lake Charles, LA.

Book Reviews

Analysis and Ratings

The following reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to *Nutrition Forum Book Reviews*, P.O. Box 664, Amherst, NY 14226-0664.

Touting False Hope

Jane Reinhardt-Martin, RD, LD

The Breast Cancer Prevention Diet: The Powerful Foods, Supplements, and Drugs That Can Save Your Life by Bob Arnot, MD (New York: Little, Brown & Company, 1998), 258 pp., \$24 hardback, ISBN 0-316-05114-4.

Bob Arnot is well known as NBC's chief health correspondent. His breast cancer prevention diet book caught the attention of American women last fall when it was introduced on the TV shows *Oprah* and *Today*. A hefty debate ensued. Critics of the book emerged, and national organizations, such as the American Council on Science and Health, labeled the book "unscientific and deceptive—a disservice to American women."

Part one of the book discusses what makes breast cancer grow and suggests foods that could prevent the disease. Part two explains Arnot's 12-step program for preventing breast cancer, offering advice on everything from exercise to how to drop a glucose overload. Part three details "road maps" to assist women in their own breast cancer prevention plan. A small section at the end of the book is devoted to healthy cuisine and meal plans.

The problem is, he has intertwined facts and fiction so well that the unwary may believe that Arnot has the cure for breast cancer—when in fact he has no such thing. The book opens with a section citing numerous recognized medical ex-

perts, scientists, and research institutions. Yet when the American Council on Science and Health contacted many of the scientists cited, most were unaware of the book, and not one endorsed it. Arnot implies that the studies he cites were human studies, when most of them were done on animals. For example, he refers to the work of Dr. Lilian Thompson on flaxseed, and he says, "... what she has found is that breast cancer size actually decreased with a daily course of flaxseed." True, at least two of Dr. Thompson's studies have found that flaxseed supplementation reduces the size of mammary tumors—in rats, but not in women.

Throughout the book, Arnot often gives specific statistics without providing a supporting reference. Such omissions encourage readers to blindly accept some incredible claims.

Finally, Arnot's diet plan requires drastic lifestyle changes. Even if the book were more scientifically sound, it does not explain how women are supposed to achieve such dramatic alterations in lifestyle.

The sad fact is, there is no scientific evidence that a "breast cancer prevention diet" exists.

NOT RECOMMENDED

Fanciful Combinations

Susan Parry Mandel, MS, RD

The Complete Book of Food Combining: A New Approach to the Hay Diet and Healthy Eating by Jan Dries and Inge Dries (Rockport, MA: Element Books, 1998), 240 pp., \$15.95 paperback, ISBN 1-86204-239-X.

This volume describes in detail the authors' eccentric program of "food combining"—a supposed way to achieve better health by eating only certain foods specified by a rigid formula. It tells you which food combinations are good, which are poor, and which are "problematical." It provides examples of recipes and menus that are considered appropriate. And, though it promotes the increased consumption of fruits and vegetables, it is mostly just inaccurate, confusing, and downright difficult to follow.

The principles of food combining out-

lined here are based on the authors' own interpretation of digestive physiology. Supposedly, as each food is eaten, it forms a layer in the stomach, and each layer is then sequentially digested. The dominant nutrient in a food determines the type of digestive enzymes that will be secreted. To ensure adequate digestion, one must therefore consume foods of only one type of dominant nutrient. The authors contend that there are—contrary to basic nutrition textbooks—five different macronutrients in food: protein, fat, starch, sugar, and acid. To determine the dominant nutrient, one calculates the nutrient's weight as a percentage of a food's total weight rather than its caloric content. A food combining pentagon with the good and bad food combinations depicts which dominant nutrients are digested well together.

But the pentagon is based on a shaky foundation. In the opening chapter, the authors reject scientific evidence and offer anecdotal evidence—mostly their own—as the only information "that counts." For example, the authors note (incorrectly) that a fruit-only diet is well tolerated and nutritionally sound for cancer patients. The authors suggest that consumption of only one food in a diet would be the most appropriate for digestive problems, ignoring the fact that a variety of foods are required to ensure adequate micronutrient intake.

Although the book emphatically states that it is "up-to-date" in terms of modern physiology and nutrition, the majority of mechanisms described are inaccurate. Despite the authors' insistence, the pancreas does not secrete only one of three enzymes according to the dominant nutrient in a meal. Even the numbers used to illustrate how to calculate the dominant nutrient in a meal are incorrect. Behind the food-combining theory one will find elements of a calorie-restricted, low-fat, mostly vegetarian diet that is likely to account for any success it may have in aiding with digestion and weight control. The diet is complicated and unnecessarily restricted in macro- and micronutrients. Not one reference is in English. Not one referenced author can be found with a National Library of Medicine Medline search.

This is not a healthy combination. **NF**

NOT RECOMMENDED

**VITAMIN PRICE-FIXING
CONVICTION**

The Swiss pharmaceutical giant Hoffmann-La Roche Ltd agreed to plead guilty and pay a record \$500 million criminal fine for leading a worldwide conspiracy to raise and fix prices and allocate market shares for vitamins A, B2, B5, C, E, and beta-carotene sold in the United States and elsewhere, the Department of Justice announced. A German firm, BASF Aktiengesellschaft, also will plead guilty and pay a \$225 million fine for its role in the same antitrust conspiracy. The conspiracy, which lasted from January 1990 into February 1999, affected the vitamins most commonly used as nutritional supplements or to enrich human food and animal feed as well as in vitamin premixes used to enrich breakfast cereals and other processed foods.

**FTC INTERNET CAMPAIGN
UPDATE**

The FTC has secured consent agreements with four companies that were making unsubstantiated claims for health products marketed through the Internet. The Arthritis Pain Care Center had claimed that cetylmyristoleate (CMO), purportedly a fatty acid derived from beef tallow, cures most forms of arthritis by modifying the immune system and is effective against many other diseases. Body Systems Technology, Inc. had claimed shark cartilage capsules and a liquid containing Cat's Claw were effective against cancer and HIV/AIDS. Magnetic Therapeutic Technologies had claimed that its magnetic sleep pads or other products: (a) are effective against cancers, diabetic ulcers, arthritis, degenerative joint conditions, or high blood pressure; (b) could stabilize or increase the T-cell count of HIV patients; (c) could reduce muscle spasms in persons with multiple sclerosis; (d) could reduce nerve spasms associated with diabetic neuropathy; (e) could increase bone density, immunity, or circulation; and (f) are comparable or superior to prescription pain medicine. Pain Stops Here! Inc., had claimed that its "magnetized water" and other products are useful

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'Cellulite Removers'

The whole truth about erasing fad fat

by Stephen Barrett, MD

Cellulite is a term coined in European salons and spas to describe deposits of dimpled fat found on the thighs and buttocks of many women. Widespread promotion of the concept in the United States followed the 1973 publication of *Cellulite: Those Lumps, Bumps and Bulges You Couldn't Lose Before*, by Nicole Ronsard, owner of a New York City beauty salon that specialized in skin and body care. Cellulite is alleged to be a special type of "fat gone wrong," a combination of fat, water, and "toxic wastes" that the body has failed to eliminate.

Alleged "anticellulite" products sold through retail outlets, by mail, and through the Internet have included loofah sponges, cactus fibers, special washcloths, horsehair mitts, creams and gels to "dissolve" cellulite, supplements containing vitamins, minerals and/or herbs, bath liquids, massagers, rubberized pants, exercise books, brushes, rollers, body wraps, and toning lotions. Many salons offer treatment with electrical muscle stimulation, vibrating machines, inflatable hip-high pressurized boots, "hormone" or "enzyme" injections, heating pads, and massage. Some operators claim that 5 to 15 inches can be lost in one hour. A series of treatments can cost hundreds of dollars.

Cellulite is not a medical term. Med-

ical authorities agree that cellulite is simply ordinary fatty tissue. Strands of fibrous tissue connect the skin to deeper tissue layers and also separate compartments that contain fat cells. When fat cells increase in size, these compartments bulge and produce a waffled appearance of the skin. Many years ago, Neil Solomon, MD, conducted a double-blind study of 100 people to see whether cellulite differed from ordinary fat. Specimens of regular fat and lumpy fat were obtained by a needle biopsy procedure and given to pathologists for analysis and comparison. No difference between the two was found.

More recently, researchers at the Rockefeller Institute used ultrasonography, microscopic examinations, and fat-metabolism studies to see how affected and unaffected skin areas differed in seven healthy adult subjects (five women, two men; four affected, three unaffected). The researchers concluded: (a) certain characteristics of skin make women more prone than men to develop cellulite, (b) the process is diffuse rather than localized, and (c) there are no significant differences in the appearance or function of the fatty tissue or the regional blood flow between affected and unaffected sites within individuals (*Plast Reconstr Surg* 101:1934-1939, 1998).

**'Cellulite' is not a
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Medical
authorities agree
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simply ordinary
fatty tissue.**

from **Prometheus Books**

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EMS and Iontophoresis Devices

Electrical muscle stimulators (EMS) are legitimate medical devices approved for certain conditions—to relax muscle spasms, increase blood circulation, prevent blood clots, and rehabilitate muscle function after a stroke. But many health spas and figure salons claim that muscle stimulators can remove wrinkles, perform face lifts, reduce breast size, reduce a “beer belly,” and remove cellulite. Iontophoresis devices are prescription devices that use direct electric current to introduce ions of soluble salts (i.e., medications) into body tissues for therapeutic or diagnostic purposes. The only FDA-approved use is for diagnosing cystic fibrosis.

The FDA considers promotion of muscle stimulators or iontophoresis devices for any type of body shaping or contouring to be fraudulent. The most infamous of these devices, the Relax-A-Cizor, was claimed to reduce girth by delivering electric shocks to the muscles. More than 400,000 units were sold for \$200 to \$400 each before the FDA obtained an injunction to stop its sale. At the trial, 40 witnesses testified that they had been injured while using the machine. In 1971, a federal judge concluded that the device could cause miscarriages and aggravate many preexisting medical conditions, including hernias, ulcers, varicose veins, and epilepsy.

Thigh Creams

Various products are being promoted in the skin care market as thigh and stomach slimmers. Many contain aminophylline, an asthma drug that the promoters claim will dissolve the fat and smooth the skin. Since some individuals are allergic to ethylenediamine, a component of aminophylline, the FDA is concerned about the use of this ingredient in cosmetic skin products.

Body Wrapping

Many salons and spas invite clients to trim inches off the waist, hips, thighs, and other areas of the body. These facilities use wraps or garments, with or without special lotions or creams, applied to the skin. The garments may be applied to

parts of the body or to the entire body. Clients are typically assured that fat will “melt away” and they can lose “up to 2 inches from those problem areas in just one hour.” Home-use systems are also being marketed through the Internet and through multilevel marketing. Many of the systems are claimed to “remove toxins,” which is absurd. Some marketers suggest measuring a large number of body areas before and afterward and adding up the differences to get “total inches lost.” Life Force International, for example, suggests adding the results of 17 measurements. This enables minor changes due to temporary effects or to measurement variations to appear to be large numbers.

Products based on similar notions have also been marketed by mail. Rubber sweatsuits have been claimed to cause weight loss by increasing the amount of water lost through perspiration. Heat belts have been marketed with similar claims. Some have chemical heat packs to increase the temperature around the waist and have elasticized waist cinchers to fit close to the body to keep sweat from evaporating.

Although wrapping or special garments may cause temporary water loss as a result of perspiration or compression, any fluid will soon be replaced by drinking or eating.

Cellasene

An herbal product called Cellasene is being vigorously promoted as a cellulite remedy. The product was developed by an Italian chemist named Gianfranco Merizzi. Its ingredients are evening primrose oil, dried fucus vesiculosus extract, gelatine, fish oil, glycerol, soya oil, grape seed, bioflavonoids, soya lecithin, fatty acids, dried sweet clover extract, dried ginkgo biloba extract, and iron oxide. The product, to be taken twice daily (or three times per day for an “intensive” program) for two months and then once daily for maintenance, costs \$1.50 to \$2.00 per capsule. Here’s what one Internet marketer says (followed by my comments in italics):

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Resveratrol Hype

Is this red wine's secret to good health?

by Melissa Q. B. McElderry, MS, RD

Resveratrol (trans-3,5,4'-trihydroxy-stilbene), a compound found largely in the skins of red grapes, is a component of Ko-jo-kon, an oriental medicine used to treat diseases of the blood vessels, heart, and liver. It came to scientific attention only four years ago, however, as a possible explanation for the "French Paradox"—the low incidence of heart disease among the French people, who eat a relatively high-fat diet. Today, it is touted by manufacturers and being examined by scientific researchers as an antioxidant, an anticancer agent, and a phytoestrogen. It is also being advertised on the Internet as "The French Paradox in a bottle."

Sources

While present in other plants, such as eucalyptus, spruce, and lily, and in other foods such as mulberries and peanuts, resveratrol's most abundant natural sources are several species of grapes that are used to make wine. It occurs in the vines, roots, seeds, and stalks, but its highest concentration is in the skin, which contains 50-100 micrograms (μg) per gram. Resveratrol is a phytoalexin, a class of antibiotic compounds produced as a part of a plant's defense system against disease. Since fungal infections are more common in cooler climates, grapes grown in cooler climates have a higher concentration.

The resveratrol content of wine is related to the length of time the grape skins are present during the fermentation process. Thus the concentration is significantly higher in red wine than in white wine because the skins are removed earlier during white-wine production, lessening the amount that is extracted. Grape juice, which is not a fermented beverage, is not a significant source of resveratrol. A fluid ounce of red wine averages 160 μg of resveratrol, compared to peanuts, which average 73 μg per ounce. Since wine is the most notable dietary source, it

is the object of much speculation and research.

Cardiovascular Effects

Many studies suggest that consuming alcohol (especially red wine) may reduce the incidence of coronary heart disease (CHD). Several studies have demonstrated that resveratrol is an effective antioxidant. By inhibiting the oxidation of low-density lipoprotein (LDL), it protects cells against lipid peroxidation. It is thought to provide more effective protection than other well-known antioxidants, such as vitamins C and E. On the other hand, it is less effective than the antioxidants quercetin and epicatechin found in red wine. Reduced platelet aggregation has also been demonstrated, which can also help prevent atherosclerosis.

To date, most of the research on resveratrol's antioxidant and antiplatelet properties has been done in vitro (in an artificial environment using test-tube or tissue-culture preparations). Further studies in animals and humans are necessary to determine whether resveratrol supplementation makes sense.

Cancer-Related Effects

Resveratrol is being studied to see how it affects the initiation, promotion, and progression of cancer. With regard to tumor initiation, it has been shown to act as an antioxidant by inhibiting free radical formation, and as an antimutagen in rat models. Resveratrol appears to decrease tumor promotion activity by inhibiting cyclooxygenase-1 (COX-1), an enzyme that converts arachidonic acid to proinflammatory substances that stimulate tumor-cell growth. Studies related to progression have found that resveratrol induced human promyelocytic leukemia cell dif-

[continued on page 38]

This month's ratings are by Stephen Barrett, M.D., board chairman of Quackwatch, Inc., which is working hard to improve the quality of health information on the Web. He now operates three Web sites: Quackwatch (<http://www.quackwatch.com>), Chirobase (<http://www.chirobase.org>), and MLM Watch (<http://www.mlmlwatch.org>).

BEST

LOCATORplus is the National Library of Medicine's catalog of books, journals, and other research tools. Its Web site (<http://www.nlm.nih.gov/locatorplus/>) offers links to Medline and other research tools.

The Institute of Food Technologists offers scientific status summaries on 23 topics related to food safety and nutrition. Summaries and complete papers can be downloaded in pdf format at http://ift.micronexx.com/sc/sc_g00.html.

The American Dietetic Association's site <http://www.eatright.org> has been redesigned and expanded to 1200 pages. The Government Affairs section contains position papers and other valuable statements.

David Emery maintains an excellent page debunking health scares and other "urban legends" at <http://urbanlegends.about.com/>.

WORST

Nutrabalance (<http://www.nutrabalance.com>) is a bizarre computerized testing system that combines the results of a blood chemistry profile, a urinalysis, and other tests to classify patients according to 14 "metabolic types" and to recommend dietary changes and food supplements.

NutriSystem Direct (<http://www.nutrisystemdirect.com>), an offshoot of the weight-loss center chain, has begun marketing prepackaged foods through independent distributors. It is also offering its own line of supplement and herbal products, most of which are irrationally formulated.

The Good Doctor Web site (<http://www.thegooddoctor.com>), maintained by George Wolverton, MD, a family practitioner in Clarksville, Indiana, offers dubious advice about a variety of dubious diagnostic tests and invalid treatments. His section on "juicing" advocates eating "live foods" (those that still have their enabling enzymes in them) and avoiding "dead" foods (any food that does not spoil within 3 days if left out of the refrigerator).

- Dried ginkgo biloba extract assists in blood circulation and stimulates the metabolism of fats. *Although ginkgo can increase circulation, it does not stimulate fat metabolism. Even if it did, there is no reason it would exert a localized effect.*
- Dried sweet clover extract can increase blood circulation and assist in removing fluid build-up. *This ingredient may have mild diuretic action, but "fluid build-up" is not a factor in the appearance or composition of fatty tissue.*
- Grape seed bioflavonoids are powerful antioxidants that protect cells and blood vessels from damage. *Whether antioxidant supplements help protect tissues is not scientifically settled. Regardless, any such mechanism has nothing to do with the quantity or appearance of fatty tissues.*
- Dried fucus vesiculosus extract stimulates metabolism and can help reduce localized fats. *This herb contains significant amounts of iodine and could adversely effect the thyroid gland. The U.S. Recommended Daily Allowance for iodine is 150 micrograms. The average American woman ingests 170 micrograms per day from food (not including iodized salt). Each capsule of Cellasene contains 240 micrograms of iodine. If enough were taken to increase thyroid function, the result would be unhealthy.*
- Evening primrose oil and fish oil are rich in polyunsaturated fatty acids, a source of energy that increases metabolic levels and helps in diminishing saturated fatty acids. *The "energy" is simply the caloric value. Neither oil increases metabolism or reduces the amount of other fats one eats.*

- Soya lecithin helps to break down fats. *The body makes all the lecithin it needs. Lecithin supplements do not cause the body to shed fat.*

Rexall Sundown, Inc. is Cellasene's primary marketer in the United States. The company's Web site claims:

Cellasene works from within, nutritionally, to help fight cellulite at its source . . .

Cellasene is a safe, clinically studied formula that works over time at the source of the problem—below the surface of the skin. This unique formula of plant extracts and other beneficial dietary supplements nourishes connective tissue from within and helps reduce cellulite. The herbal ingredients in Cellasene work to increase blood circulation, reduce fluid buildup, stimulate metabolism and reduce localized fats. CONVENIENT AND EASY TO USE. . . .

You do not need to change your diet and exercise routine for Cellasene to work. It is simple and effortless to incorporate the easy-to-swallow Cellasene softgels into your daily regimen.

On March 15, 1999, during an interview on CNBC-TV, Rexall's chief executive officer claimed that three clinical trials sponsored by the company had demonstrated a 90% success rate, but the results would not be submitted to scientific journals because Rexall does not

want to reveal the amounts of each ingredient in its formula. This statement was preposterous because results could be published without revealing the exact amounts of each ingredient.

Near the end of May, apparently in response to criticism in the media, Rexall released various


details on two of the studies and posted them to its Science on Cellasene Web site. The first study was performed on 25 healthy female volunteers whose hip and thigh and ankle circumferences were measured before and after eight weeks of daily consumption of the product. Although differences between the initial and final measurements were reported,

no control group was used, so that it would not be possible to tell whether any changes were related to taking the products or to measurement variations. In addition, neither individual measurements nor weights were reported, so that it is not possible to judge from the data whether the reductions were related to weight loss, whether coincidental or otherwise.

The second study compared 25 people who took the product with 15 people who took a placebo for eight weeks. According to the report, the average weight of both groups varied little but average hip and thigh circumference and skin thickness (measured with an ultrasound test) decreased. However, the experimental design was so seriously flawed that the findings should not be regarded as valid. The participants were not told whether they were receiving Cellasene or the placebo, but the investigators knew who was in each group because only the Cellasene group had blood drawn for testing. This could have influenced the way the measurements were performed, as well as the participants' motivation. No data were given to demonstrate whether the measurement process was accurate or whether the appearance or feel of the women's skin had changed. In addition, although measurements were made at the experiment's beginning, midpoint, and end, the midpoint measurements were not reported on Rexall's Web site.

It seems to me that a valid test should involve: (a) more participants, (b) a longer initial investigative period plus monthly follow-up measurements for at least a year, (c) standardization of the measurement technique, (d) measurements taken by at least three investigators, (e) blinding of the investigators about who received the Cellasene and who did not, (f) measuring several times a week to see whether measurements tend to change or remain constant, (g) weekly ratings of the appearance of the skin by both the participants and the experimenters, and (h) release of the individual data in addition to the group averages.

A spokesperson for Cellasene's Italian manufacturer stated that a study involving 200 women will be done at the University of Miami with results expected by next fall.


**The simple truth
is that no product
or exercise
can cause
spot-reduction.**

Endodermologie

In 1998, the FDA approved a high-powered, handheld massage tool that consists of a treatment head and two motorized rollers, with a suction device that compresses the affected tissue between the rollers. The manufacturer is permitted to promote it for "temporarily improving the appearance of cellulite." The procedure—called Endodermologie—usually takes 10 to 20 treatments to get the best results, and one or two maintenance treatments per month are required to maintain them. Without the maintenance, the benefits are soon lost. The typical cost is \$45 to \$65 per session. A recently published study of 85 women between the ages of 21 to 61

found that 46 patients who completed seven sessions showed a mean index reduction in body circumference of 1.34 cm, while 39 patients who completed 14 sessions of treatments showed a mean index reduction in body circumference of 1.83 cm (*Aesthetic Plast Surg* 22:145–153, 1998).

The Bottom Line

The simple truth is that no product or exercise can cause spot-reduction. The amount of fat in the body is determined by the individual's eating and exercise habits, but the distribution of fat in the body is determined by heredity. In most

cases, reduction of particular parts can be accomplished only as part of an overall weight-reduction program. Exercise affects the amount of fat throughout the body, not just in the exercised parts. Endodermologie may temporarily improve the appearance of dimpled areas, but the procedure is time-consuming and expensive. Liposuction may permanently help in some cases. **NF**

Dr. Barrett, a retired psychiatrist, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud. The Quackwatch Web site (<http://www.quackwatch.com>) contains additional information on nutrition and health fads.

Science Meets Alternative Medicine Conference Tapes Now Available

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BRIEFS

[continued from page 33]

against cancer, diseases of the liver and other internal organs, gallstones, kidney stones, urinary infection, gastric ulcers, dysentery, diarrhea, skin ulcers, bed sores, arthritis, bursitis, tendinitis, sprains, strains, sciatica, heart disease, circulatory disease, arthritis, autoimmune illness, neurodegenerative disease, and allergies, and could stimulate the growth of plants. The actions are part of the agency's "Operation Cure.All" campaign to enforce the law and to educate consumers. Details of these cases can be found at <http://www.ftc.gov/opa/1999/9906/opcureall.htm>.

FIBER INTAKE AND CHD IN WOMEN

An 10-year epidemiologic study supports the hypothesis that higher fiber intake from cereal sources reduces the risk of coronary heart disease (CHD) in women (*JAMA* 281:1998-2004, 1999). The study compared the incidence of heart attacks of death due to CHD to the amount of dietary fiber consumed by 68,682 women aged 37 to 64 years who had no previously diagnosed angina, heart attack, stroke, diabetes, or high

blood cholesterol when the study began. Women in the highest 20% of cereal fiber intake had a 34% lower risk of CHD than those in the lowest 20%. Reprints can be obtained from Alicja Wolk, DMSc., Dept. of Epidemiology, Karolinska Institutet, Box 281, SE-17177, Stockholm, Sweden (e-mail alicja.wolk@mep.ki.se).

CREATINE SIDE EFFECTS

A survey of athletes who took creatine (28 male baseball players and 24 male football players, ages 18 to 23) found that 16 (31%) experienced diarrhea, 13 (25%) experienced muscle cramps, 7 (13%) reported unwanted weight gain, 7 (13%) reported dehydration, and 12 reported various other adverse effects (*J Am Diet Assoc* 99:593-594, 1999).

HOMOCYSTEINE AND CARDIOVASCULAR RISK IN WOMEN

A prospective study has found that elevated homocysteine levels are associated with moderately increased risk of future heart disease among postmenopausal women (*JAMA* 281:1817-1821, 1999). The study compared homocysteine levels of 122 women who died or had a nonfatal heart attack, stroke, angioplasty, or bypass surgery with 244

matched women who remained disease-free during a 3-year follow-up period. It is not yet known whether lowering mildly elevated homocysteine levels reduces the incidence of adverse cardiovascular events, but many experts believe that clinical trials will demonstrate this. Reprints can be obtained from Paul M. Ridker, M.D., Division of Cardiovascular Diseases, Brigham and Women's Hospital, Boston, MA 02115.

CHITOSAN DEBUNKED

A controlled trial has found that the supplement chitosan does not affect weight or serum cholesterol levels (*Eur J Clin Nutr* 53:379-381, 1999). The study involved 30 overweight volunteers who received four capsules of either chitosan or a placebo for 28 consecutive days and were told to eat their normal diet. The chitosan and placebo groups showed no differences in weight or serum cholesterol levels. Chitosan is derived from chitin, a polysaccharide found in the exoskeleton of shellfish such as shrimp, lobster, and crabs. Many sellers falsely claim that chitosan causes weight loss by binding fats in the stomach and preventing them from being digested and absorbed. Some refer to it as a "fat magnet." **NF**

[continued from page 35]

ferentiation and inhibited ribonucleotide reductase, an enzyme needed for DNA synthesis in proliferating cells. One appealing characteristic of resveratrol's anticancer potential is its minimal toxicity to blood-forming cells. More studies using both cellular and animal models are needed before any such data would be applicable to human use.

The similarity in structure between resveratrol and diethylstilbestrol has prompted investigations into resveratrol's potential as a phytoestrogen (a plant compound that produces estrogen-like effects). However, these properties also stimulate the growth of human breast cancer cells. This finding seems contrary to its other anticancer activities, and is a cause for concern.

Final Analysis

Laboratory tests have clearly demonstrated that resveratrol may help prevent cardiovascular disease and cancer. However, there are several reasons why recommending a population-wide increase would be premature.

First, little is known about the absorption and clearance of resveratrol, the identities of its metabolic products, or its effects on the liver. Second, the research on resveratrol has focused on its short-term effects and has been dominated by in vitro studies. Third, its role as a potentiator of breast carcinomas may significantly limit its use, even for its "proven" benefits. Finally, its main dietary source is red wine. Not only is its concentration in wine extremely variable, but recommending increased consumption of red wine to boost resveratrol intake could certainly do more harm than good. In spite of any beneficial

aspects, red wine and other alcoholic beverages pose health risks that include liver damage and physical addiction.

The health-food industry is claiming that resveratrol is the wine component responsible for the "French Paradox." While taking resveratrol pills is certainly safer than heavy consumption of red wine, supplementing with unproven substances is generally unwise. At this point, occasional use of red wine seems far more prudent. **NF**

Mrs. McElderry is a dietitian who co-owns and operates several restaurants and theatre-pubs. Carolyn M. Klinge, Ph.D., Assistant Professor of Biochemistry and Molecular Biology, University of Louisville School of Medicine, reviewed this article before publication. Thomas J. Wheeler, Ph.D., and Manfred Kroger, Ph.D., helped edit it.

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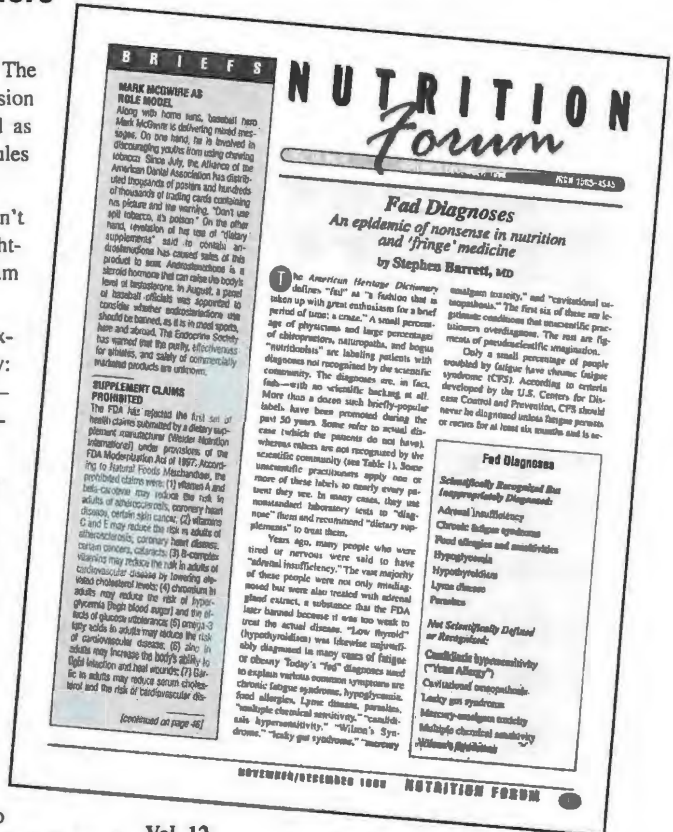
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Immoral Eating

Becky Chase, MS, RD

The Resolution Diet: Keeping the Promise of Permanent Weight Loss by David Heber, MD, PhD (Garden City Park, NY: Avery Publishing Group, 1999), 209 pp., \$21.95, hard cover, ISBN 0-89529-872-4.

David Heber, MD, Director of the UCLA Center for Human Nutrition, believes obesity can be blamed on four factors: food advertising, genetics, stress, and low physical activity. His antidote? Take responsibility for your lifestyle and stop being influenced by the food marketing industry. This book reveals the "secrets of success" that Heber claims are the key to permanent weight loss.

The Resolution Diet consists of using a meal replacement beverage, such as Ultra Slim•Fast, for two meals a day and adding other portion-controlled foods for a total intake of 1200 to 1500 calories per day. Other allowed foods include certain vegetables, fruits, whole grains, and lean proteins. No additional fats are included. When target weight is reached, meal replacements are used for one meal a day.

Heber claims that meal replacements offer the dieter better control over calorie intake, they ease the anxiety associated with dieting, and they assure nutritional adequacy since they are fortified with vitamins and minerals. He advocates the use of these products as a lifelong strategy for weight control. However, no clear and

concise guidelines for evaluating meal replacement products are given. The three scientific studies Heber cites to support his dieting strategy were funded, at least partially, by Slim•Fast Foods Company.

Heber also advocates avoiding what he calls "trigger" foods, such as nuts, cheese, pizza, salad dressings, butter, margarine, mayonnaise, red meat, fatty fish, frozen yogurt, ice cream, cookies, pastries, and cakes. He believes these that foods "turn you on and make you fat." His advice is to avoid these foods forever, including the low-fat or fat-free versions. He believes that by avoiding these foods one can learn to lose the desire for them. He also believes that no one can learn to eat smaller portions of his or her favorite foods.

One of the more outrageous claims in the book is that someone is morally superior if he or she can overcome the urge to eat certain foods. This just reinforces the myths that overweight people are morally inferior and that certain foods are "good" or "bad." Ideas like this only contribute to the fat-phobia and low self-esteem often found in individuals who are overweight or who have eating disorders.

The book does offer a potentially beneficial series of questions and exercises designed to help readers gain insight about their own eating behaviors. It would be more helpful, however, if the book provided information about how to use them to tailor the diet to meet individual needs.

One of the book's strong points is the discussion of exercise. Heber emphasizes the importance of both cardiovascular and muscle-building exercises in weight management. The information on relapse prevention, stress management, and social support, though brief, is on target. Unfortunately, Heber skims over many of the psychosocial issues involved with weight loss.

While some people may be successful in losing weight following this diet, the book reinforces much of what is problematic about dieting today—completely avoiding certain foods, eating only certain foods, and feeling guilty about enjoying food. **NF**

NOT RECOMMENDED



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HERBAL FOODS?

The Dietary Supplement and Health Education Act of 1994, which included herbs within its definition of supplements, has spurred herbal marketers to promote thousands of products with questionable claims and inadequate directions for use. Increasing numbers of ordinary foods are being spiked with herbs that can produce pharmacologic effects. For example, R.W. Knudsen's "Simply Nutritious" line includes Peach Berry St. John's Wort, a juice product fortified with St. John's wort extract, is advertised in *Vegetarian Times* as "a convenient, delicious way to reduce anxiety and depression." Other Simply Nutritious products include Lemon Ginger Echinacea, Ginseng Boost, and Ginkgo Alert.

FOODBORNE ILLNESS REPORT

The American Council on Science and Health has revised its booklet, *Eating Safely: Avoiding Foodborne Illness*, which describes how to prevent more than 40 illnesses. The 48-page report notes that disease-causing organisms are the primary cause and that poor sanitation and preparation practices are more common in the home than in food-processing establishments. The booklet can be downloaded from <http://www.acsh.org> or purchased for \$5 from the American Council on Science and Health, 1995 Broadway, New York, NY 10023.

WEIGHT-LOSS GUIDELINES FOR PROVIDERS

The FTC has issued guidelines primarily intended for commercial weight-loss clinics. The guidelines call for disclosure of staff qualifications, key program components, risks (if any), costs, outcome information, and the fact that the odds of keeping weight off can be improved through a lifelong commitment to regular physical activity and to healthful eating in accordance with the Dietary Guidelines for Americans. The text and advice on setting weight-loss goals can be accessed online by clicking "more info" at <http://www.consumer.gov/weightloss/>

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The Juice Plus+® 'Miracle'

Can powdered, encapsulated foods save your health?

by Stephen Barrett, MD

National Safety Associates (NSA) president Jay Martin likes to turn simple ideas into megamillion-dollar sales. An NSA brochure states that by 1997 his company had generated over \$3 billion in sales by "developing and introducing innovative new products that are on the leading edge of whole new industries": home fire detectors in the 1970s, water filters in the early 1980s, and air filters in the late 1980s. But its "biggest hit yet" is a line of "natural food-based products designed to help prevent disease." Its flagship product—Juice Plus+®—was introduced in 1993 and hit \$6 million per month by the end of its first year.

The Juice Plus+® recipe for success is very simple: Fruits and vegetables are good for us. Capture their goodness in convenient products. Add endorsements, testimonials, a pinch of fear, a scientific veneer, and several dollops of deception. And harness the power of multilevel marketing (MLM) to spread the word. All of these ingredients have been around for many years. But NSA has developed a winning mix.

It is well established that dietary strategies can help prevent certain cancers and reduce the risk of cardiovascular disease. Popularization of the diet-cancer link began during the early 1980s when the National Academy of Sciences (NAS) reported that people who eat lots of

whole-grain cereals, fruits, and vegetables have a lower incidence of certain cancers. Since that time, research has shown that emphasizing these foods can also help prevent heart attacks and strokes. These ideas have been quantified in the Food Guide Pyramid System (1992), which recommends 6–11 servings of grain products, 2–4 servings of fruit, and 3–5 servings of vegetables per day, depending on the individual's caloric intake.

Since it was not known which dietary factors, if any, might be helpful, the NAS report specified that supplementation with individual nutrients was not advisable. Within a few months after the report was issued, however, several products containing dehydrated vegetables or various nutrients were marketed as though the report had supported their use for cancer prevention. Government regulatory actions drove some of the early products from the marketplace, but new studies (particularly of antioxidants), new marketing techniques, and lax federal enforcement have enabled many more to take their place.

Add endorsements, testimonials, a pinch of fear, a scientific veneer, and several dollops of deception.

The Power of MLM

MLM is a form of direct sales in which independent distributors can make money not only from their own sales but also

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from those of the people they recruit. Its roots date back to the 1930s when a California businessman began offering friends a commission for selling a food supplement to their friends. The operation evolved into Nutrilite Products in 1939 and began significant interstate distribution in 1945. In 1959, two highly successful distributors formed a new company that evolved into the multibillion-dollar, international conglomerate now called Amway. Shaklee Corporation, another MLM giant, was founded in 1956 by a retired chiropractor. Since that time, hundreds of other companies and millions of "independent distributors" have joined the fray.

The "success" of network marketing lies in the enthusiasm of its participants. Most people who think something has helped their health enjoy sharing their success with their friends. Testimonial-givers are usually motivated by a sincere wish to help their fellow humans. Since people tend to believe what others tell them about personal experiences, testimonials can be powerful persuaders. An NSA distributor manual notes that "as people use the product, they begin to build their own Juice Plus+® story to share with others." Although NSA literature states, "We do not make any claims . . . involving the prevention, cure, mitigation of any disease," NSA distributors are circulating claims that Juice Plus+® products have relieved a wide variety of discomforts. In 1994, I even acquired a 69-page booklet of endorsements and testimonials.

Until the mid-1980s, claims made for health-related MLM products were conveyed mainly through direct personal contact in which the salesperson's personal success story (health or financial) played an important role. Since that time, however, many companies have added slick videotapes and audiotapes to spread their story, telephone conferences to train large groups of salespeople, scientific advisory boards to seem more authoritative, company-sponsored research to appear more authentic, and endorsements from prominent persons to lend prestige. Many companies use scare tactics and cite scientific research to suggest that their products will prevent disease. NSA does all of

these things. Its "Preferred Customers" who buy a four-month supply of Juice Plus+® capsules at a time, pay about \$500 per year.

What's in Juice Plus+®?

NSA's *Guide for New Distributors*, a 94-page loose-leaf manual dated October 1997, states that 17 foods are juiced to extract their nutritional essence and then reduced to powders using a proprietary process that avoids high temperatures. During the process, sugar, salt, and most of the calories and fiber are removed. "Orchard Blend" capsules are derived from acerola berries, apples, cranberries, oranges, papaya, peaches, and pineapple. "Garden Blend" capsules contain barley, beets, broccoli, cabbage, carrots, kale, oats, parsley, spinach, and tomato. Both products are also said to contain corresponding soluble and insoluble fibers, phytochemical "food actives," vitamins, minerals, and enzymes. Additional fiber and enzymes are added, and the products are encapsulated by a company called Natural Alternatives International.

Neither the product labels nor the product literature indicate the quantities of these ingredients in Juice Plus+® capsules. The manual advises taking Orchard Blend and Garden Blend at separate times because "fruits are digested differently from vegetables and your system can handle them more efficiently if they're dealt with separately." However, Juice Plus+® "Better Bars" combine both concentrates with "real fruits, oats, bran, and a host of other natural ingredients." NSA also markets a meal-replacement drink, Juice Plus+® Lite, each serving of which provides 110 calories, 4 grams of dietary fiber, and significant amounts of 12 vitamins and a few minerals.

Peculiar Claims

Pages 41 and 42 of the manual suggest that each food source offers a special health benefit. Apples, for example, are said to "contain boron, a trace mineral that affects the electrical activity of the brain, increasing mental alertness." Oranges are said to "contain every class of

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'Cures' for Multiple Sclerosis

Dozens of remedies are supposed to work— including nutritional therapies

Multiple sclerosis (MS) is a degenerative disease of the brain, spinal cord, and optic (eye) nerves, in which patches of inflammation and scarring interfere with the function of the brain, spinal cord, and/or the nerves to the eyes. The cause of MS is unknown, but the most attractive theory is that it is an immune reaction to the nervous system. Its symptoms include muscular weakness, loss of coordination, and difficulty with speech and vision. It occurs chiefly in young adults and, like arthritis, can have a very variable course. Some people have only a single attack. Others have only a few attacks in a lifetime, recover from these, and experience no disability except during attacks. Others have frequent attacks from which they don't recover completely, but which cause only partial disability. Still others have a slow progression of disability over a period of 10 to 25 years, which eventually leaves them helpless. When attacks occur, symptoms may come and go suddenly and may even vary from hour to hour.

MS's extreme variability makes it a perfect disease for quacks. The only way to know whether a treatment is effective is to follow a large number of patients for years to see whether those who receive the treatment do better than those who do not. Quacks don't bother with this kind of testing, however. They simply claim credit whenever anyone who consults them improves. And since the majority of attacks are followed by complete or partial recovery, persuasive quacks can acquire patients who swear by whatever they recommend.

The Therapeutic Claims Committee of the International Federation of Multiple Sclerosis Societies has analyzed more than a hundred alleged treatments and published the results in a book called *Therapeutic Claims in Multiple Sclerosis* by W. Sibley et al. (4th edition. New York: Demos Vernande, 1996). The volume is revised every few years. Each

analysis includes a description of the method, the proponents' rationale, a scientific evaluation, estimate of risks and/or costs, and the authors' conclusion. The methods are then classified according to plausibility, extent of study, risk, and cost.

No cure is known, but a few methods are useful in shortening the duration of attacks, reducing their severity, or helping to deal with the symptoms. Methods that have a plausible rationale but have not been sufficiently tested are considered "investigational." Investigational methods are not listed here because information about them should be obtained from a qualified neurologist who can thoroughly discuss them. Reliable information is also available from the National Multiple Sclerosis Society.

The committee noted that no nutritional deficiency is known to be a factor in MS, and that no special diet or the addition of vitamins or minerals has been proven to alter its course. Polyunsaturated fatty acids (PUFA) have slight immunosuppressive properties, but studies involving sunflower seed oil, evening primrose oil, safflower seed oil, and fish oils have produced conflicting results. The committee concluded that other than a possible benefit of PUFA-containing oils there is no evidence that any dietary change affects MS.

Methods to Avoid

The methods considered implausible or ineffective are listed below:

Adequately tested but ineffective in influencing the course of MS:

Aspirin and sodium salicylate; colchicine (for immune modulation); thymectomy (removal of the thymus gland); transfer factor; myelin basic protein; hyperbaric oxygen (HBO).

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WEB WATCH

This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc., which is working hard to improve the quality of health information on the Web. He now operates three Web sites: Quackwatch (<http://www.quackwatch.com>), Chirobase (<http://www.chirobase.org>), and MLM Watch (<http://www.mlmlwatch.org>).

BEST

GlobalMedic (<http://www.globalmedic.com>) offers interactive health quizzes for assessing eating habits, stress level, and heart health, and for preliminary evaluation of various symptoms. The site also includes health news, first-aid information, and a medical encyclopedia.

WORST

MotherNature.com (<http://www.mothernature.com>) offers "30,000 vitamins, herbs, and supplements. And expert advice. On everything from breast tenderness to gout. In complete and total privacy." The site features a "Health Encyclopedia" promoting products for more than 100 conditions. For cancer, it states: "Shark cartilage is also a popular alternative treatment for cancer, taken both to slow the growth of existing tumors and in smaller daily doses to prevent cancers."

HealthShop.com (<http://www.healthshop.com>) claims it is "the world's most complete natural food store." Its search box enables the browser to identify products alleged to be helpful for the problem selected. The site also has a "health planner" to "create a health and nutritional program tailored to your unique needs." The process is programmed to recommend supplements to everyone.

Doctor's Nutrition On Line (<http://doctorsnutrition.com>) operated by two Mississippi chiropractors, offers products for "optimal nutrition" and a toll-free number for individual consultations.

HealthWatchers System (<http://www.healthwatchers.com>) offers several worthless tests and other information intended to hawk its supplements. The site is operated by Gary Martin, former proprietor of the American College of Nutripathy, a nonaccredited correspondence school.

Global Health (<http://www.watercure.com>) is dedicated to the bizarre idea that dehydration is the primary cause of disease. The "doctor" responsible for this idea is not listed in the AMA's physician database.

MIXED

PlanetRx (<http://www.planetrx.com>) combines a huge amount of information with an online pharmacy and health food store. The medical information is valid, but sections dealing with dietary supplements and other alleged "alternative" treatments contain many inappropriate recommendations.

cancer inhibitor known." Acerola cherries are "a source of vitamin C, known to relieve symptoms of osteoarthritis." Carrots are said to lower cholesterol, parsley to be "good for the heart and immune system," kale to be a "powerful cancer fighter," and cabbage is "thought to block breast cancer." Even if these claims were true, there is no reason to conclude that taking Juice Plus+® capsules could provide the same benefit.

Page 43 states, "The food enzymes in Juice Plus+® will facilitate digestion of

your food, making it more useable to your body. This also conserves the body's own enzyme supply to do other important things like fighting off disease." This statement is false because: (a) most people have enough enzymes in their intestinal tract to digest their food; (b) most of the enzymes in food are destroyed during digestion; and (c) the body's production of metabolic enzymes does not depend upon the amounts of enzymes in the digestive tract.

The enzymatic nonsense reflects the ideas of Humbart "Smokey" Santillo, author of *Food Enzymes: The Missing Link*

to *Radiant Health*, to whom NSA attributes the Juice Plus+® concept. Santillo's credentials include a bachelor of science degree from Edinboro State Teacher's College, a doctor of naturopathy degree from a nonaccredited correspondence school, an iridology "certificate of merit," a master herbalist certificate from the School of Natural Healing, and eight years of study at the Concept Therapy Institute (which teaches a biotheistic chiropractic technique). One of NSA's audiotapes features Santillo claiming that whole fruits and vegetables should not be eaten closely together as foods but are

Does 'Juicing' Work?

According to the cover of his book *The Juiceman's Power of Juicing*, Jay "the Juiceman" Kordich offers a "revolutionary program for staying healthy, looking young, staying trim, and feeling great—all by taking advantage of the natural healing power of fresh fruit and vegetable juices." Kordich claims that at age 20, he became gravely ill with a cancer and was told he might not live. Inspired by literature about the Gerson diet, he began drinking 13 glasses of carrot-apple juice every day. "Two and a half years later," he says in the book, "I was a well man." After more than 20 years of hawking juice extractors from town to town, Kordich gradually harnessed the power of television to boost "juicing" into a nationwide fad with sales in the tens of millions annually. Health-food stores are profiting from the fad by selling juice extractors and "organic" foods.

Kordich's book is filled with fanciful physiologic tidbits and far-fetched claims that juices boost energy and are effective against scores of ailments. His recipes include "Pancreas Rejuvenator" (carrot-apple-lettuce-string bean-Brussels sprout juice), "Body Cleanser" (carrot-cucumber-beet juice), "Graying Hair Remedy" (cabbage-spinach-carrot juice), and other concoctions for anemia, anxiety, arthritis, gallstones, impotence, and heart disease. He claims that for the more serious diseases, "the right nutrients may retard or reverse the manifestations of some of these diseases by feeding the immune system and making the body healthier and stronger overall."

Kordich claims that "live foods" are superior to cooked or processed foods because they contain "active enzymes." These, he claims, help break down foods in the digestive tract, "thus sparing the body's valuable digestive enzymes. . . . This allows vital energy in the body to be shifted from digestion to other body functions such as repair and rejuvenation." Of course, "organic foods" are preferable because "the corporate giants use deadly chemicals." Further:

The abundance of live, uncooked foods flushes your body of toxins, leaving you refreshed, energized, and relaxed all at the same time. The pure foods make your skin glow, your hair shine, your breath fresh, and your entire system so regulated you will never have to give it another thought. Colds and flu become fewer and farther between; many people report that arthritic joints loosen with renewed flexibility; and gums and teeth become less prone to bleeding and cavities.

The above notions are nonsensical. Uncooked (or fresh-frozen) foods, alone or combined as Kordich suggests, can be a valuable component of a balanced diet. However, they do not "flush the body of toxins," "energize the body," or alleviate any of the diseases or conditions as Kordich claims. Nor is it correct that juices can strengthen the immune system or the body as a whole. The enzymes in plants help regulate the metabolic function of plants. When ingested, they do not act as enzymes within the human body, because they are digested rather than absorbed intact into the body. "Organically grown" foods cost more but are neither safer nor more nutritious than conventionally grown foods. And sensible eating, which is not difficult to do, furnishes an adequate nutrient supply.

Juice extractors cut food into tiny pieces that are then spun to separate the juice from the fiber-containing pulp. Ordinary juicer machines leave the pulp in the juice. Since the fiber in fruits and vegetables is an important part of a balanced diet, there is no reason to remove it while making juice. There's nothing wrong with including extracted juices in a diet that is adequate in fiber. But promoting them as alternatives to whole foods or as powerful healing agents is irresponsible.

safely combined in Juice Plus[®]. He also claims that Juice Plus[®] Lite helps people manage their weight because "it has so much food value and is so easy to digest. Once they start absorbing all that food, they just don't have the same hunger . . . and lose weight automatically."

The Scientific Veneer

Juice Plus[®] promoters also refer to science. NSA's most powerful sales aids are tape recordings by Richard DuBois, MD, a board-certified internist who is described as "one of the world's leading authorities on infectious disease." Citing scientific studies, DuBois correctly notes that (a) considerable research shows that diets high in grains, fruits, and vegetables are associated with lower rates of certain cancers, cardiovascular disease, and several other types of degenerative disease; (b) many Americans do not eat the recommended number of servings; (c) epidemiologic studies have found that these diseases are associated with low blood levels of certain phytonutrients; and (d) an NSA-sponsored study of 15 healthy individuals found that supplementation with Juice Plus[®] for 28 days raised the blood levels of five phytonutrients (*Current Therapeutic Research* 57:445-461, 1996). The study found, for example, that beta-carotene levels were 5 times as high, and lycopene levels were 20 times as high.

To further support his argument, DuBois correctly describes how clinical trials have found that supplementation with individual nutrients sometimes does more good than harm. But he then asserts that the Juice Plus[®] nutrients are safe and more effective, because the phytonutrient content of plants is "balanced." Based on all of the above assumptions, he concludes that everyone should take Juice Plus[®].

The above reasoning is not valid. Nearly all of the evidence relating disease rates to dietary composition is epidemiologic. Epidemiologic studies do not prove cause and effect. And even if causal connections are established, they do not prove that dietary supplements will remedy a poor diet or that Juice Plus[®] is an optimal supplement. Only well-designed, long-term clinical trials can determine whether taking it or any other pill or potion can actually prevent disease.

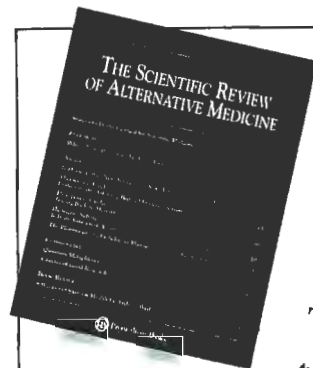
But that's not all. Much of the protective effect of fruits and vegetables is due to their fiber content. Juice Plus[®] pills have nearly all the fiber removed. Moreover, eating the recommended portions of grains, fruits, and vegetables does not merely provide high levels of phytochemicals. It usually means that the overall diet is low or moderate in fat. Nobody knows whether adding a product like Juice Plus[®] to a high-fat or low-fiber diet would provide much benefit. The bottom line is that if someone's diet is low in fruits, vegetables, or grains, the most prudent action is to fix the diet.

Curiously, DuBois himself has cast doubt on his claim that Juice Plus[®] provides "balanced nutrition." In the 1998 NSA videotape, "Homocysteine, Oxidative Stress, Pathogenesis and Prevention of Disease," he states extra carotenoids are stored in the skin and that his own skin has turned orange from the pills. Rather than seeing this as a problem (since beta-carotene supplements have been associated with increased cancer rates in a few studies), he claims that "When you turn orange,

you have neutralized your oxidative stress" (a purported measure of harmful free-radical activity) and therefore reduced your odds of getting certain diseases. He even describes how his patients say, "I want to look like you. I want that carotenoid gloss." How can he possibly know that years of living with orange skin will do more good than harm?

NSA sales aids acknowledge that taking Juice Plus[®] is not as good as eating the recommended amounts of grains, fruits, and vegetables. But they also state that everyone should take Juice Plus[®]. If every American did so, the total annual cost would exceed \$100 billion. Do you think this would be a wise allocation of our financial resources? **NF**

Dr. Barrett, a retired psychiatrist, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud. The Quackwatch Web site (<http://www.quackwatch.com>) contains additional information on nutrition and health fads.



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BRIEFS

[continued from page 41]

INTERNET HELPS SNAG MEDICAL IMPOSTOR

Gregory Earl Caplinger has pled guilty in North Carolina federal court to six counts of wire fraud in connection with a scheme that involved selling stock in a company set up to market his alleged cure for AIDS and cancer. The treatment, which is bogus, has been administered at Caplinger's clinic in the Dominican Republic. Caplinger represented himself for many years as a distinguished physician, researcher, and board-certified cancer specialist who has authored many scientific publications. However, testimony presented to the court by an FBI agent and Dr. Stephen Barrett indicate that: (a) Caplinger had never attended medical school; (b) his medical and doctor of science "degrees" were obtained from diploma mills; (c) various other "professional" credentials were acquired either by simply paying a fee or by printing them himself; and (d) nothing he has written has been published in a recognized scientific journal. The investigation was facilitated by victims who had read about Caplinger on Barrett's Web site. The full story can be accessed on [http://www. quack-watch.com](http://www.quack-watch.com) by searching for "David Weekley" and clicking on the topmost line of the results.

QUESTIONABLE MAIL-ORDER PRODUCTS

Gero Vita International has been vigorously advertising mail-order products in the United States and Canada for more

than five years. Some of the products may be effective (though overpriced), but many are promoted with misleading claims. Gero Vita's chairman, A. Glenn Braswell, marketed many health and beauty products during the late 1970s and early 1980s. During that period, the U.S. Postal Service filed 138 false representation complaints involving 50 products. The cases were settled through 32 false representation orders and 15 consent agreements. Braswell also pled guilty to mail-fraud charges involving the faking of before-and-after advertising photographs for bust developer, hair-growth, and cosmetic products, and was sentenced to five years' probation. In addition, he was sentenced to a three-year prison term for federal income tax evasion and perjury charges developed during the mail-fraud investigation. In March 1999, the FDA banned the importation of all Gero Vita products marketed with claims that they can prevent or treat disease. However, this action is unlikely to be effective because products are shipped from within the United States.

GNC MEGADEALS

Royal Numico, N.V., a Dutch manufacturer of nutrition products, has signed an agreement to acquire General Nutrition Companies, Inc., for \$2.5 billion. The parties state that the merger will create the world's largest company devoted to nutrition. GNC has also formed a ten-year partnership with Rite Aid Corporation and drugstore.com that will increase its prominence on the Internet.

RESEARCH SCANDAL

Mannatech Inc. has filed suit against Darryl See, MD, its former \$10,000-a-

month consultant, alleging that research he published contained false claims. The suit alleges that See also lied when he said that the study was funded by the National Institutes of Health and conducted under the auspices of the University of California Irvine Medical School. The misrepresentations were uncovered by David Evans, an investigative reporter for *Bloomberg News*. See's report, which ranked Mannatech's pills in the top five of 196 that were subjected to laboratory testing, has been a key document used by the company's 400,000-plus distributors to promote its products. However, See's former department chairman told Evans that mere lab tests are insufficient to show effectiveness or safety of such products in humans. The complete story is available on <http://www.mlmwatch.org>.

WARNING AGAINST RAW SPROUTS

The FDA has warned that raw sprouts can cause potentially dangerous salmonella and *E. coli* O157 infection, particularly in children, the elderly, and persons with weakened immune systems. (In healthy adults, these infections may cause diarrhea but usually run their course without causing serious illness.) In an advisory issued in July, the agency advised that (a) cooking can significantly reduce the risk of illness, (b) consumers should check that sandwiches and salads in restaurants are made without sprouts, and (c) sprouts grown under clean conditions in the home may still present a risk if bacteria are present in the seeds from which they are grown. **NF**

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Implausible and untested or inadequately tested:

Various nonsteroidal antiinflammatory drugs (NSAIDs); thyrotropin-releasing hormone; cannabis (marijuana); Diltiazem; Nifedipine; Verapamil; low-fat diet; intravenous yeasts (Proper-myl); pancreatic extract (epropanex); honey-bee venom (safety is uncertain); octacosanol; superoxide dismutase (SOD); procaine hydrochloride; dimethyl sulfoxide (DMSO); Alphasal (formerly Chlororazone or Vitamin X); allergens; Rodilemid; alpha-fetoprotein; Proneut; immunobiological revitalization; proteolytic enzymes; injections of calcium orotate or calcium aminoethyl phosphate; oral calcium + magnesium + vitamin D; sodium bicarbonate or phosphate; hyperimmune colostrum ("immune milk"); Nystatin; transcutaneous nerve

stimulation (TNS); ultrasound treatment applied near the spinal column; magnet therapy; dental approaches such as correction of bad bite, TMJ treatments, or removal of mercury-amalgam fillings; hysterectomy; allergen-free diet; Kousmine diet; gluten-free diet; raw food diet (Evers diet); MacDougal diet; pectin- and fructose-restricted diet; sucrose- and tobacco-free diet; vitamin regimens; mineral supplements; cerebroside; aloe vera juice; various enzymes (Wobenzym, digestive enzymes, Vitafestal, Bilicomb, Panpur, Panzynorm).

Implausible and known to have significant risk or side effects:

ACTH or other corticosteroids administered into the spinal canal; chloroquine; x-ray treatment; immunosuppression with chlorambusil (Leukoran), Lumustine, or 5-Fluorouracil; immune

modulation with thymus hormones (Thymosin, Thymuline/Facteur Thymique Scribe, Thymopoetin 5, TFX-Polfa, THX, T-Activin); myelin basic protein; Interferon gamma; interferon inducers (Tilorone, Poly-ICLC, Staphage Lysate); Progabide (for spasticity); heart and pancreas extract (Pancorphen); snake venom (PROven, Venagen, Horvi MS9); cellular therapy; autogenous vaccines; chelation therapy; "metabolic therapy"; promazine hydrochloride (Sparine); Le Gac Therapy (antibiotics plus hot tubs); acupuncture; electrical stimulation of the dorsal column of the spinal cord; sympathectomy; ganglionectomy; surgical spinal cord relaxation (cervicolordodesis); vertebral artery surgery; surgical implantation of pig brain tissue; Cambridge or other very-low-calorie liquid diets; high dosage of vitamin C and various other high-dosage vitamin or mineral regimens. **NF**

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The following reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers. Readers who would like to see specific books reviewed may send their suggestions (or copies of books) to Nutrition Forum Book Reviews, P.O. Box 664, Amherst, NY 14226-0664.

Herbal Disaster

Varro E. Tyler

Herbal Medicine: The Use of Herbs for Health and Healing, by V. Pitman (Rockport, MA: Element Books, 1994), 161 pp., soft cover, ISBN 1-85230-591-6.

When I was in London recently, I visited the book stores on Charing Cross Road to see what was new in the herbal field. Foyles, the largest bookstore in the world, had little to offer. Blackwells across the street had nothing, but a clerk there referred me to Watkins Books and gave me the address. When I got there, the sign above the shop window indicated they were specialists in mystical and occult literature. On entering, I found an enormous selection of books devoted to herbal remedies, mostly by British authors.

This experience clearly denotes the status of herbal medicine as a non-science—even antiscience—in the U.K. Although the author of this volume is a native of the United States, she has clearly adapted to the British concept, and her book is a model of the nonscientific/antiscientific approach which I have long referred to as paraherbalism.

After reviewing the basic elements, earth, air, fire, and water (to which Ms. Pitman adds ether to the four Greek originals of Empedocles), she notes that these intermingle to create three energy patterns, or “humours,” that determine our constitutional type. All of this is based on Ayurvedic philosophy and not on that of

Hippocratic medicine which postulated four humors. She notes the similarity of the two systems. Apparently, one element or humor more or less is of relatively little consequence. She then goes on to assert that a knowledge of the activity of herbs combined with a knowledge of humoral constitution will allow the reader to form a successful “herbal strategy.”

This philosophic nonsense gives way to pure antiscience in some of the subsequent monographs on the individual herbs. Comfrey (*Symphytum* species) contains extremely toxic pyrrolizidine alkaloids proven to cause cancer of the liver in small animals and veno-occlusive disease in humans. Scientists everywhere condemn its internal use in unmodified form, and externally it should be applied only to intact tissue, not to open wounds. The author begins her discussion of this herb with a humour assessment noting that comfrey strengthens water essence and cools fire. She then asserts that its carcinogenicity is based on “flawed research” and that it is one of those “invaluable herbs.” One can only infer here that it may be invaluable to funeral directors. Many significant benefits are then cited, ranging from the treatment of bleeding ulcers and lungs to severe burns.

The potential toxicity of coltsfoot (*Tussilago farfara*) which contains the same type of carcinogenic alkaloids is not even mentioned in the discussion of that herb.

A publisher's note on the copyright page of this volume indicates that, contrary to its title, the book is not intended as a replacement for medical advice. I should hope not!

NOT RECOMMENDED

Herbal Details

Varro E. Tyler

Hypericum & Depression, by H. H. Bloomfield, M. Nordfors, and P. McWilliams (Los Angeles: Prelude Press, 1996), 203 pp., \$7.95, soft cover, ISBN 0-931580-36-6.

This book provides an excellent introduction in its initial 93 pages to the lay reader who wants to know the facts about St. John's wort (*hypericum*) and its safety

and utility in treating mild to moderate depression. The remainder of the volume is devoted to an analysis of the medical studies, complete with references, on which the first part of the volume is based. It will be of interest to the intellectually curious who want to know the details.

The first portion of the book consists of three logical divisions. Part one, “Depression,” covers definition and treatment of the condition. Part two, “Hypericum Perforatum,” discusses the herb itself. Part three, “Hypericum and Depression,” details the therapeutic use of the herb. The final part, “Medical Studies on Hypericum and Depression,” provides details on the pharmacological and clinical studies supporting use of the herb.

My main criticism of this otherwise useful volume deals with the listing on pages 82–84 of “research-grade” St. John's wort products. These are said to contain the “same exact formulation used in a majority of those [medical] studies.” Most of the controlled studies conducted on the herb since 1991 have used a Lichtwer product designated LI 160, and some of the products listed do not contain that particular extract. Instead, their status is based on “borrowed science”—the (false) assumption that if a product has a similar composition to the one tested, it must have the same chemical activity. Admittedly, the original producer of the herbal extract is not always listed on the label and is therefore difficult to identify, but the authors could have exercised more caution in preparing this listing.

Unfortunately, this book is printed on very poor, newsprint quality paper, probably to keep the price low. Still, a dollar more for quality paper would have resulted in a much nicer-appearing and longer-lasting book. Sadly, it is not indexed—a major deficiency in a work of this quality.

But the volume provides the facts about St. John's wort without excessive hyperbole or unreliable anecdotal reports. If you are curious about the herb and are looking for an easily understood, science-based, reliable reference, *Hypericum & Depression* will meet your needs. **NF**

RECOMMENDED

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OBESITY INCREASING

Although attempts to lose weight are common in the United States, the prevalence of obesity has been steadily increasing during the past 20 years. On October 27, 1999, *JAMA* published a theme issue urging that this problem be given higher public health priority. The lead article noted that obesity, defined as a body mass index (BMI) equal to or greater than 30 kg/m², has increased from 12% in 1991 to 17.9% in 1998. Another article concluded that obesity was associated with higher prevalence of high blood cholesterol, high blood pressure, coronary heart disease, osteoporosis, and type 2 diabetes. Other articles dealt with exercise patterns, exercise equipment, the effect of television viewing by children, recent research advances, and physician counseling.

THE USE OF UNCONVENTIONAL TREATMENTS

Using data from the 1996 Medical Expenditure Panel Survey, researchers from Yale University estimated that in 1996, 6.5% of Americans had visits for both unconventional therapies and conventional medical care; 1.8% used only unconventional services; 59.5% used only conventional care; and 32.2% used neither (*JAMA* 282:651–656, 1999). Chiropractors topped the list of unconventional

[continued on page 6]

The Bizarre Claims of Hulda Clark

Playing dangerously with people's health

by Stephen Barrett, MD

Hulda Regehr Clark, ND, PhD, author of *The Cure for All Cancers* and *The Cure for All Diseases*, is facing criminal and civil charges related to her activities. Clark, 70, claims to cure cancer, AIDS, and many other serious diseases. She describes herself as an "independent research scientist" with bachelor's and master's degrees from the University of Saskatchewan and a PhD degree in physiology from the University of Minnesota (1958). She also lists a naturopathic (ND) degree, but the source is not identified.

Clark's treatment is available at Century Nutrition, a clinic in Tijuana, Mexico, where the basic fee for two weeks of "treatment" is \$4,500 (plus 10% tax). This figure does not include the cost of a motel room (approximately \$210/week); meals (\$250/week); blood tests (\$70 each); standard diagnostic imaging tests (\$40 to \$400); dental x-rays (at least \$200); "individually tailored" supplements (\$400 to \$1,500 for a month's supply); equipment (about \$350); tooth extractions (\$80 each); and partial or full dentures (\$450).

Bizarre Claims

Clark claims that all cancers and many other diseases are caused by "parasites, toxins, and pollutants" and can be cured by killing the parasites and ridding the

body of environmental chemicals. Her book *The Cure for All Cancers* states:

All cancers are alike. They are all caused by a parasite. A single parasite! It is the human intestinal fluke. And if you kill this parasite, the cancer stops immediately. The tissue becomes normal again. In order to get cancer, you must have this parasite. . . .

This parasite typically lives in the intestine where it might do little harm, causing only colitis, Crohn's disease or irritable bowel syndrome, or perhaps nothing at all. But if it invades a different organ, like the uterus, kidneys or liver, it does a great deal of harm. If it establishes itself in the liver, it causes cancer! It only establishes itself in the liver of some people. These people have propyl alcohol in their body. All cancer patients (100%) have both propyl alcohol and the intestinal fluke in their livers. The solvent propyl alcohol is responsible for letting the fluke establish itself in the liver. In order to get cancer, you must have both the parasite and propyl alcohol in your body.

Clark further alleges:

- The adult fluke "stays stuck to our intestine, (or liver, causing cancer, or uterus, causing endometriosis, or thymus, causing AIDS, or kidney, causing Hodgkin's disease)." Or the pancreas, causing diabetes; the brain, causing Alzheimer's disease; the prostate,

Clark claims that all cancers and many other diseases are caused by "parasites, toxins, and pollutants."

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causing prostatitis; or the skin, causing Kaposi's sarcoma.

- "As soon as there are adults in the liver . . . a growth factor, called ortho-phospho-tyrosine, appears. Growth factors make cells divide. Now YOUR cells will begin to divide too! Now you have cancer. . . Having propyl alcohol in your body allows the fluke to develop outside of the intestine."
- "When the fluke and all its stages have been killed, the ortho-phospho-tyrosine is gone! Your cancer is gone."
- "Clearly, you must do 3 things: (1) Kill the parasite and all its stages; (2) stop letting propyl alcohol into your body; and (3) flush out the metals and common toxins from your body so you can get well."
- "It is not unusual for someone to have a dozen (or more) of the parasites I have samples of. You can assume that you, too, have a dozen different parasites."
- Three herbs, used together, can rid you of over 100 types of parasites: black walnut hulls, wormwood, and common cloves. But the amino acids ornithine and arginine improve this recipe.
- Use of these five products will kill the cancer-causing fluke in the first five days and the remaining parasites in another two weeks.
- It takes 5 days to be cured of cancer regardless of the type you have. Surgery, radiation, or chemotherapy can be canceled, because after Clark's recipe cures the cancer it cannot come back.
- All metal (fillings, crowns, bridges, etc.) should be removed from the mouth, and all teeth with root canals should be extracted, because their presence damages the immune system.
- To prevent recurrence, stay on a maintenance program of killing parasites and give yourself a high-dose program at least twice a year. Also treat all family members and household pets.

Clark is also using and promoting three devices. Her Syncrometer is claimed to identify diseased organs and

toxic substances by noting whether the device makes various sounds when "test substances" are placed on a plate. The device is simply a galvanometer that measures skin resistance to a low-voltage current that passes from the device through a probe touched to the patient's hand. Various models for home use can either be commercially purchased or made by the patient. Clark's "Zapper" is a low-voltage device that supposedly kills parasites, bacteria, and viruses with electrical energy, but does not harm human tissue. Its use is based on Clark's notion that all living things broadcast a characteristic range of radio frequencies and that the device can issue counterfrequencies that kill unwanted organisms. The third device is a frequency generator, which Clark claims can electrocute individual organisms. None of these devices has any genuine medical value.

Clark's books, herbal products, and devices are marketed through many Web sites. Her ideas are also advocated by the Dr. Clark Research Association, a group founded in 1998 by David P. Amrein, a Scientologist who resides in Switzerland. The site also reports on Clark's activities and instructs her followers about what they can do to help her.

Case Histories

Pages 119-372 contain "case histories" of 138 cancer patients, of whom 103 were "cured" and 35 "did not carry out instructions or could not be followed." The standard way to determine whether a treatment is effective is to carefully record the nature of the patient's disease before treatment and to determine the patient's condition indefinitely. Clark's reports contain little information about the patient's history and no indication that Clark performed any physical examinations. The only follow-up reports are for a few patients who returned for further treatment—usually a few weeks later. Cancer

Clark's reports contain little information about the patient's history and no indication that Clark performed any physical examinations.

[continued on page 6]

High-Dose Vitamin C Against Cancer

Does it work—or is it a Linus Pauling dream?

The claim that vitamin C is useful in the treatment of cancer is largely attributable to Linus Pauling, PhD. In 1976 and 1978, he and a Scottish surgeon, Ewan Cameron, MB, ChB, reported that patients treated with high doses of vitamin C had survived three to four times longer than similar patients who did not receive vitamin C supplements. The study was conducted during the early 1970s at the Vale of Leven Hospital in Loch Lomonside, Scotland. Dr. Cameron treated 100 advanced cancer patients with 10,000 milligrams of vitamin C per day. The clinical course of these patients was then compared with that of 1,000 patients of other doctors whose records were obtained from the same hospital, but who had received no vitamin C. The findings were published in 1976, with Pauling as coauthor, in the *Proceedings of the National Academy of Sciences*.¹

The 1976 report emphasized that all of the patients had been “treated initially in a perfectly conventional way, by operation, use of radiotherapy, and administration of hormones or cytotoxic substances.” The vitamin C patients were reported to have a mean survival time 300 days longer than that of the controls. Moreover, the vitamin C patients were said to have shown an improvement in their quality of life. In response to doubts about the validity, reliability, and quality of the control population, Cameron and Pauling replaced some of the patients and controls and published another analysis in September 1978 in the same journal.² In 1979, two Japanese researchers affiliated with the Linus Pauling Institute claimed similar results in two studies totaling 130 cancer patients treated during the 1970s.³

Faulty Design

The Pauling/Cameron study was not a clinical trial in which patients were compared to carefully matched patients chosen at random and followed using a stan-

dardized protocol. Instead, Pauling and Cameron attempted to reconstruct what happened to the control group by examining their medical records. Most cancer specialists and journal editors are extremely reluctant to accept this type of study for evaluating the validity of contemporary cancer therapy, primarily because bias may occur in selecting controls.

In 1982, William D. DeWys, MD, chief of the clinical investigations branch of the National Cancer Institute’s cancer therapy program, pointed out that the vitamin C and control groups had not been properly matched.⁴ First he observed that no data had been published to demonstrate that the patients had been matched by stage of their disease, functional ability, weight loss, and sites of metastasis, all of which are important for judging the stage of the disease. Then he pointed out that Cameron’s patients began getting vitamin C when Cameron judged them “untreatable” and their subsequent survival was compared to that of the control patients from the time they had been labeled “untreatable.”

DeWys reasoned that if the two groups were comparable, the average time from the initial diagnosis to “untreatable” status should be similar for both groups. But they were not. He concluded that many of Cameron’s patients had been labeled untreatable earlier in the course of their disease and would therefore be expected to live longer. DeWys also noted that more than 20% of the patients in the control group had died within a few days of being labeled untreatable, whereas none of Cameron’s patients had died. This, too, suggested that Cameron’s patients had less advanced disease when they were labeled untreatable.

In the Japanese study, the treatment and control groups were treated with various doses and at different times, which made the conclusions even more questionable.⁵

WEB WATCH

This month’s ratings are by Stephen Barrett, M.D., board chairman of Quackwatch, Inc., which is working hard to improve the quality of health information on the Web. He now operates three Web sites: Quackwatch (<http://www.quackwatch.com>), Chirobase (<http://www.chirobase.org>), and MLM Watch (<http://www.mlmlwatch.org>).

BEST

CBS HealthWatch (<http://www.cbsmedcape.com>), Medscape’s new consumer site, has outstanding consumer information geared to three levels of understanding. Registration is necessary to access the “advanced” and “expert” levels. Registered users can monitor progress toward their health goals and can arrange for information on their favorite topics of interest to be available automatically.

The International Bibliographic Information on Dietary Supplements (IBIDS) database at <http://www.dietary-supplements.info.nih.gov> now has nearly 400,000 citations, some of which are not included in Medline. The database is a project of the NIH Office of Dietary Supplements in partnership with the U.S. Department of Agriculture’s Food and Nutrition Information Center.

WORST

Quixtar (<http://www.quixtar.com>), Amway Corporation’s new site, includes a 60-question online “health assessment” that provides “personalized product recommendations” for NUTRILITE® products. Respondents who indicate that they eat well may be congratulated for “an incredible job of meeting your nutritional needs in this specific area.” However, indicating concern about various body functions will trigger recommendations for products alleged to help those functions. Many such recommendations are inappropriate. To locate the health-assessment form, click “My Assessment” in the “Reference Desk” column on the site-map page.

VitalCast <http://www.vitalcast.com> provides a large amount of misinformation about “alternative” methods. Its offerings include an online magazine (*Vital Living*) and many syndicated radio broadcasts that can be downloaded.

Nutri-Kids.com (<http://www.nutri-kids.com>) promotes Rexall Showcase International’s Nutri-Kids School-Aid, “a protein and multivitamin- and mineral-enriched supplement drink mix to be used as an adjunct to your children’s breakfast.” Pediatrician William Sears, MD, who helped develop the product, claims it contains “many ingredients that have been scientifically shown to help children concentrate and maintain their focus.”

Mayo Study #1

In 1978, the Mayo Clinic embarked on a prospective, controlled, double-blind study designed to test Pauling and Cameron's claims. Each patient in this study had biopsy-proven cancer that was considered incurable and unsuitable for further chemotherapy, surgery, or radiation. The patients were randomized to receive 10,000 milligrams of vitamin C per day or a comparably flavored lactose placebo. All patients took a glycerin-coated capsule four times a day.

The patients were carefully selected so that the vitamin C and placebo groups were equally matched. There were 60 patients in the vitamin C group and 63 in the placebo group. The age distributions were similar. There was a slight predominance of males, but the ratio of males to females was virtually identical. Performance status was measured using the Eastern Cooperative Oncology Group Scale, a clinical scale well recognized by cancer researchers. Most study patients had some disability from their disease, but only a small proportion were bedridden. Most patients had advanced gastrointestinal or lung cancer. Almost all had received chemotherapy, and a smaller proportion had undergone radiation therapy.

The results were noteworthy. About 25% of patients in both groups showed some improvement in appetite. Forty-two percent of the patients on placebo alone experienced enhancement of their level of activity. About 40% of the patients experienced mild nausea and vomiting, but the two groups had no statistically significant differences in the number of episodes. There were no survival differences between patients receiving vitamin C and those receiving the placebo. The median survival time was approximately seven weeks from the onset of therapy. The longest surviving patient in this trial had received the placebo. Overall, the study showed no benefit from vitamin C.⁶

After the study was published, Pauling complained in a letter to the editor that most patients had had extensive prior chemotherapy and were therefore immunologically compromised—so no benefit from vitamin C in the patient population should be expected.⁷ In response, the

Mayo researchers pointed out that Pauling's own reports had said that all of his patients had undergone "perfectly conventional" therapy.⁸ But Pauling maintained that only 4 of Cameron's 100 patients had received prior chemotherapy.⁹ Curiously, at a meeting in February 1985 at the University of Arizona, Pauling stated that vitamin C therapy could be used along with all conventional forms of treatment.¹⁰

A 1975 study at the Mayo Clinic had demonstrated that patients with advanced cancer can mount an immunological response. The study involved forty patients who had undergone chemotherapy for a gastrointestinal malignancy. Many of these patients had immune responses to BCG vaccine, indicating that people with advanced cancer are not uniformly or inevitably immunologically compromised.¹¹ Nevertheless, the Mayo researcher decided to retest vitamin C.

Mayo Study #2

Patients in the second Mayo study of vitamin C and cancer had tissue-proven colorectal adenocarcinoma that was considered incurable. They were ambulatory and had not had chemotherapy. Most had no symptoms. The patients were carefully classified according to the interval between the diagnosis of inoperable disease and entry into the study, the sites of metastasis, and whether there was a measurable area of tumor. A total of 51 patients were randomly allocated to vitamin C, and 49 patients were assigned to receive a milk-sugar placebo.

There were no objective regressions from either placebo or vitamin C for the 19 patients in each group who had measurable tumors. Among the patients who had symptoms when the study began, 7 (64%) of the 11 vitamin C patients and 11 (65%) of the 17 placebo patients claimed some degree of symptomatic relief. To be sure that patients were following the experimental protocol, urine specimens from five patients selected randomly from the treatment group and six patients from the control group were analyzed for vitamin C. The vitamin C patients had significant levels, while the five of the six placebo patients had negligible levels of urinary vitamin C. (The other patient was taking medications that made it impossible to interpret the test.)

The median survival for all patients was approximately 10–11 months, while that from entry into the study until "progression" was declared was about four months. (Progression was declared when a tumor increased significantly in size, new metastases occurred, symptoms or performance worsened substantially, or weight decreased 10% or more.) No meaningful differences were found between patients on vitamin C and those on placebo. Thus, there was no apparent benefit from treatment with high-dose vitamin C.¹²

Mayo Study #3

Following publication of these results, some commentators suggested that the study patients might not have been representative of cancer patients as a whole—that perhaps there was a subtle selection or referral bias that may have skewed the results. So a third prospective, randomized, stratified study was conducted under the auspices of the North Central Cancer Treatment Group, an international, multi-institutional, collaborative oncology group. Based primarily at the Division of Oncology at the Mayo Clinic, the group also had input from community-based cancer specialists in the Upper Midwest, Louisiana, Montana, Pennsylvania, and Saskatchewan.

This study included 71 patients on vitamin C and 73 patients on placebo. The patients were carefully matched by age and gender. Performance scores indicated that most of them had some disability from their advanced cancer. The sites of the primary cancers were virtually identical to those of the original study—primarily lung and colorectal cancer—and the distribution between treatment groups showed no meaningful differences by diagnosis or site. All had advanced cancer that had progressed after standard treatment.

Most patients had had prior chemotherapy, and a smaller proportion had undergone radiation therapy. The study found that the vitamin C group survived no longer than the placebo group. The median survival time was approximately one month, which is fundamentally the same as in the initial vitamin C study. The data did show something that was somewhat intriguing. At two weeks after the onset of therapy, some patients receiving

vitamin C experienced substantial improvement in appetite, strength, and pain relief. However, these advantages quickly dissipated so that by 4–6 weeks no meaningful advantage from vitamin C remained. The researchers concluded that vitamin C had provided transient symptomatic improvement in appetite and strength for a small proportion of treated patients. However, survival was not enhanced by vitamin C.¹³

Thus, three prospectively randomized, placebo-controlled studies involving 367 patients documented no consistent benefit from vitamin C among cancer patients with advanced disease. Moreover, high doses of vitamin C can have significant adverse effects. High oral doses can cause diarrhea. High intravenous dosage has been reported to cause kidney failure

due to clogging of the kidney tubules by oxalate crystals.^{14,15}

Despite these hard facts, many individuals still claim that high doses of vitamin C are useful as a cancer treatment. It is important for responsible health professionals to clarify this issue so that patients neither forfeit scientific care nor put themselves at risk by using a product that has no merit.

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[continued on page 7]

Imaginative Claims for Bromelain ‘Diet Pills’ A case of fat delusions?

Bromelain (also spelled bromelin) is a mixture of protein-digesting and milk-clotting enzymes found in the juice and stem of the pineapple plant *Ananas comosus* (Linné) Merr (*Fam Bromeliaceae*). A leading textbook of pharmacognosy (plant medicine) states that bromelain is used to make protein hydrolysates, to tenderize meat, and in the leather industry.¹ There is no scientific evidence that bromelain digests fats or is effective as part of a weight-reduction regimen.

In 1995, the Pennsylvania attorney general obtained an injunction against Ananas, Inc., a Canadian company that was marketing bromelain products in Pennsylvania.² The company’s claims included:

- Users would lose up to 20 pounds in two weeks and never be hungry.
- No dietary changes or exercise would be necessary.
- Ananas bromelain was an astonishing discovery of German researchers who found an enzyme that digests 900 times its own weight in fat.
- Six to eight bromelain capsules per day will force your organism to dissolve all of its excess fats.
- In a controlled medical tests three peo-

ple lost their excess weight while eating more than usual.

- After being absorbed into your bloodstream, bromelain attacks surplus fat in your hips, thighs, stomach, buttocks, and calves, to uniformly reduce their size.
- Bromelain will drain fatty accumulations out of your body.

The attorney general charged that all of the above statements were fraudulent, false, or misleading. The complaint noted that the company had received approximately 11,000 orders totaling \$385,000. A medical consultant reported that:

- No nonprescription product can produce weight reduction without reducing caloric intake, nor can most people lose weight without increasing exercise.
- Weight loss is a matter of arithmetic. There are about 3500 calories stored in a pound of fat. The solicitation claims that 98% of people using the product lost an average of 1.8 pounds a day. That would require an average deficit of 6,300 calories per day. This claim is absurd. Most people who lead a moderately active life need about 15 calories per pound to maintain their weight. Such a person with

a steady weight of 200 pounds would consume about 3,000 calories per day. Even fasting (which would be very dangerous after a few days) would not result in loss of a pound of fat per day. (Starvation will trigger loss of body fluid, but that is unsafe and does not contribute to meaningful weight reduction.)

- Literature for the product claims that a controlled experiment demonstrated weight loss among people in Brussels who took bromelain capsules. But no reference for this alleged study is cited.
- Bromelain is not absorbed into the bloodstream and transported throughout the body. Bromelain is a protein. When eaten by humans, it is broken down into its component amino acids and is not absorbed intact into the body. Even if it were absorbed and could “attack surplus fat,” the breakdown products would be reassembled into fat and not “efficiently eliminated by your body’s natural functions.”

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treatment results are normally expressed in terms of cancer-free status or survival over periods of years. Five-year survival rates are a common measure. Clark claims she can tell that patients are cured as soon as their ortho-phospho-tyrosine test is negative—within days or even a few hours after her treatment is begun. This claim is preposterous.

Thirty-eight of the 103 reports indicate that the patient had been medically diagnosed with cancer, and most of these 38 had received standard treatment. In 59 other cases, however, there was no indication that the patient had undergone any medical test or treatment that would indicate the presence of a cancer. (In 10 other cases, which Clark diagnosed as HIV infection, there was no history suggestive of AIDS. In the rest, it was not clear whether the patient had been medically diagnosed with cancer.)

Judging from the reports, Clark's judgments were based entirely on the results of her own peculiar diagnostic tests. If "ortho-phospho-tyrosine" was found in the blood, the patient had cancer. If a "protein 24 antigen" was found in the blood, the patient had AIDS. And, anywhere from a few hours to several weeks later, if these tests became negative, Clark considered the patient cured. The book describes how some of the patients who had consulted Clark for other problems were startled to hear they had cancer or AIDS.

None of the reports provides any basis for concluding that Clark's treatment has the slightest value. The majority of the people described in the 103 case reports did not have cancer. Of those that did, most had received standard medical treatment or their tumors were in their early stages. In these cases, Clark pronounced them cured but did not follow what happened after they left her clinic—so she could not possibly know how they did afterward. In some cases, she counted patients as cured, even though she noted

that they died within a few weeks after she treated them. Despite all this, hundreds of people appear to regard Clark as their savior.

Legal Difficulties

In September 1999, Clark was arrested in San Diego, California, based on a fugitive warrant from Indiana, where she faces charges of practicing medicine without a license. In November, a former patient filed suit accusing her of negligence and fraud.

The criminal case originated when Clark lived and practiced in Indiana. In 1993, after a former patient complained to the Indiana attorney general, a health department official visited her office and was diagnosed with AIDS and sent to a laboratory for a blood test. Clark—apparently tipped off by the lab—found out she was being investigated and left Indiana a few days later. After being returned to Indiana, she was released on \$10,000 bail. Her trial has been scheduled for February 2, 2000. Meanwhile, her supporters—who refer to her as a "medical pioneer"—are sending protest letters to press outlets and government officials.

The civil case was filed in September by Esther and Jose Figueroa of New York City against Clark, the Dr. Clark Research Association, Century Nutrition, and several associated individuals. Mrs. Figueroa, who had been medically diagnosed with breast cancer, sought treatment in September 1998. The court papers state that she was told that (a) dust from her apartment was responsible for her breast cancer; (b) returning to her apartment would place her at special risk to develop leukemia because of her blood type; (c) she had asbestos, lead, and a lot of copper in her system; (d) the Syncrometer detected a parasite called "rabbit fluke" inside her breast; (e) she also had *E. coli*, asbestosis, and salmonella, due to improper food sterilization; and (f) several teeth should be removed and "cavitations" in her lower jaw should be scraped out. Clark subsequently arranged for all

of Mrs. Figueroa's front and molar teeth to be removed, prescribed more than 30 dietary and herbal supplements to be taken during a 12-week period, and badly burned her breast while administering treatment with a "Zapper" device. During the 3-month period of treatment, the tumor increased from 1.5 cm to 14 cm. Despite this fact, Mrs. Figueroa was falsely told that she was getting better, that tests for "cancer markers" were negative, and that pain she was experiencing did not reflect persistence of her cancer.

Internet Help

The Internet provides an efficient way to help victims of quackery. I first learned of Clark through the healthfraud discusslist, several of whose members were familiar with her activities. When she was arrested, they kept the rest of us informed about the situation and how to access online news reports. I obtained further information about Clark by reading her books and accessing Web sites operated by her advocates. The Quackwatch Web site (<http://www.quackwatch.com>) asks quackery victims to contact me for help in getting redress. The site also lists attorneys who are interested in representing victims in court. The civil suit resulted from introducing the Figueroa family to one of our attorneys. **NF**

Dr. Barrett, a retired psychiatrist who resides in Allentown, Pennsylvania, is board chairman of Quackwatch, Inc. and a board member of the National Council Against Health Fraud. To join the health-fraud discusslist, send a blank message to healthfraud-subscribe@ssr.com and follow the instructions you receive.

None of the reports provides any basis for concluding that Clark's treatment has the slightest value.

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BRIEFS

[continued from page 1]

providers (used by 3.3% of the survey population), followed by massage (2%), herbal remedies (1.8%), spiritual healing (1.8%), nutritional advice (1.1%), acupuncture (0.6%), meditation (0.5%), and homeopathic remedies (0.4%). The researchers concluded that the use of unconventional therapies was substantially lower than had been reported in previous national surveys and was associated with increased use of physician services. Reprints are available from Benjamin Druss, MD, MPH, 950 Campbell Ave., 116A, West Haven, CT 06516.

CANDY BAR PROTEST SUCCEEDS

Nestle USA has agreed to stop using the names "Psycho Sam," "Looney Jerry," and "Weird Wally" for its Tandy Taffy bars. For more than a year, officials of the National Alliance for the Mentally Ill (NAMI) had tried quietly to persuade Nestle that the names were stereotypes that promoted stigmatization of mental illness. The company maintained that the names were rooted in playful humor that amused children and gave personality to its cartoon characters. It backed down, however, after NAMI called on its network of Stigmabusters and others to protest. Former First Lady Rosalynn Carter also objected.

'NUTRACEUTICAL' BILL INTRODUCED

The Nutraceutical Research and Education Act (HR 3001), introduced by Rep. Frank Pallone (D-NJ), would reward those who do clinical research demonstrating that "natural" substances provide

specific health or medical benefit. The bill defines "nutraceutical" as a "dietary supplement, food, or medical food . . . that (1) possesses health benefits; and (2) is safe for human consumption in such quantity, and with such frequency, as required to realize such properties." The bill provides that if the FDA approves a petition for approval of a new health claim, the person or company that developed the supporting evidence would be entitled to exclusive use of that claim for ten years. The bill would also establish the Nutraceutical Advisory Council and periodic publication of a Nutraceutical Index listing the claims that have been approved or are still under consideration.

HERBAL GUIDES NOW IN PAPERBACK

The 4th edition of Tyler's *Honest Herbal* provides a referenced analysis of about 120 herbs and related substances, with each in a separate chapter. *Nutrition Forum* readers can obtain discounted copies for \$21 (\$24 Canada) postpaid from Quackwatch, P.O. Box 1747, Allentown, PA 18105. The 3rd edition of Tyler's *Herbs of Choice*, which discusses the clinical uses, costs \$17 (\$19 Canada) postpaid.

SOY PROTEIN AND CHD

On October 26, 1999, the FDA authorized the use of health claims about the role of soy protein in reducing the risk of coronary heart disease (CHD) on labeling of foods containing soy protein. The decision was based on evidence that including soy protein in a diet low in saturated fat and cholesterol may help to reduce the risk of CHD. Recent clinical trials have shown that consumption of soy protein compared to other proteins, such

as those from milk or meat, can lower total and LDL-cholesterol levels. Foods that carry the claim must also meet the requirements for low fat, low saturated fat, and low cholesterol content; the foods made with the whole soybean may also qualify for the health claim if they contain no fat in addition to that present in the whole soybean. Scientific studies show that 25 grams of soy protein daily in the diet is needed to show a significant cholesterol lowering effect. In order to qualify for this health claim, a food must contain at least 6.25 grams of soy protein per serving. Because soy protein can be added to a variety of foods, it is possible for consumers to eat foods containing it at all three meals and for snacks. The eligible foods include soy beverages, tofu, tempeh, soy-based meat alternatives, and some baked goods. An example of a health claim about the relationship between diet and the reduced risk of heart disease is: "Diets low in saturated fat and cholesterol that include 25 grams of soy protein a day may reduce the risk of heart disease. One serving of (name of food) provides ____ grams of soy protein."

MILK USE SUPPORTED

The American Council on Science and Health (ACSH) has issued a booklet debunking several criticisms of milk by vegetarian extremists. ACSH agrees with the American Academy of Pediatrics that the best foods for infants are human breast milk or infant formula. But after the age of one year, the use of unmodified cow milk is appropriate. The booklet can be downloaded from <http://www.acsh.org> or purchased for \$5 from the American Council on Science and Health, 1995 Broadway, New York, NY 10023. **NF**

Book Reviews

Analysis and Ratings

Our reviews not only offer analyses but also rate each book as either RECOMMENDED, NOT RECOMMENDED, or RECOMMENDED WITH RESERVATIONS, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers.

Mismanaging Cancer

Manfred Kroger, PhD

Cancer: Your Guide to Complementary Therapies, Alternative Techniques, Conventional Treatments, by Philip Baron (Rockport, MA: Element Books, Inc.,

1998), 136 pp., \$5.95 paperback. ISBN 1-85230-799-4.

Published as one in a series called *The Natural Way*, this slender booklet steers the reader *away* from conventional mainstream medical practice. It is "approved by the British and American Holistic Medical Associations." Actually, it does a pretty good job in the first half explaining to the lay reader what cancer is and what the many causes may be. But even here, among the good, some outlandish statements appear. For example, to "eat against cancer" you should reduce sugar intake and eat organic foods as far as possible. Also, modern food-packaging materials are suspect and must be avoided.

The second half of the paperback is a subtle condemnation of modern medical practices in cancer treatment and an insis-

tent argument for "natural approaches," namely, the "gentle alternatives" in cancer therapy. The following are briefly discussed, with the (false) claim that they are helpful: acupuncture/acupressure, aromatherapy, Ayurvedic medicine, homeopathy, herbalism, massage, naturopathy/hydrotherapy, nutritional therapy, reflexology, yoga, tai chi, hypnotherapy, faith healing, meditation/relaxation, psychotherapy, visualization or imagery, counseling, art, music, and drama therapy.

All in all, the information provided is largely promotional for the emerging profession of natural therapists and a broadside against science-based medical approaches in cancer research and treatment. **NF**

NOT RECOMMENDED

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NEW SUPPLEMENT REGULATIONS

A revised final rule on health claims for dietary supplements was published on January 6 and took effect on February 7 (*Federal Register* 65:999–1050, 2000). The Dietary Supplement Health and Education Act of 1994 (DSHEA) permits claims that products affect the structure or function of the body, provided the manufacturer has substantiating documents on file. Without prior FDA review, products may not bear a claim that they can prevent, treat, cure, mitigate, or diagnose disease. The final rule prohibits express disease claims (such as “prevents osteoporosis”) and implied disease claims (“prevents bone fragility in postmenopausal women”), including claims made through a product’s name (“CircuCure”) or through pictures or symbols. The rule permits health-maintenance claims (“maintains a healthy circulatory system”); other nondisease claims (“for muscle enhancement,” “helps you relax.”); and claims for common, minor symptoms associated with pregnancy, menopause, or other life stages (e.g., “for common symptoms of PMS,” “for hot flashes”).

SUPPLEMENT-PROMOTING LEGISLATION

The Food Stamp Vitamin and Mineral Improvement Act of 1999 (H.R.3304), introduced by Rep. Dan Burton (R-IN), would permit food stamps to be used to purchase “nutritional supplements providing a vitamin or mineral.” A similar bill (S. 1307) was introduced in the Senate by Tom Harkin (D-IA) last June. Burton asserts that these bills “would contribute substantially to improving the nutrition and health of a segment of our society that too often falls below recommended levels of nutrient consumption.” Though some people might benefit from such a program, a poor diet plus supplements can still be a poor diet. However, (a) it would be better to promote dietary improvement than to encourage supplement use; and (b) the bill’s wording does not appear to exclude irrationally formulated products.

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How Quackery Sells

Why modern-day quacks are sneakier and more powerful than ever

by Stephen Barrett, MD & William T. Jarvis, PhD

Modern health quacks are supersalesmen. They play on fear. They cater to hope. And once they have you, they’ll try to keep you coming back for more. Seldom do their victims realize how often or how skillfully they are cheated. Does the mother who feels good as she hands her child a vitamin think to ask herself whether he really needs it? Do subscribers to “health food” publications realize that articles are slanted to stimulate business for their advertisers? Not usually.

Most people think that quackery is easy to spot. Often it is not. Its promoters wear the cloak of science. They use scientific terms and quote (or misquote) scientific references. Talk show hosts may refer to them as experts or as “scientists ahead of their time.” The very word “quack” helps their camouflage by making people think of an outlandish character selling snake oil from the back of a covered wagon—and, of course, no intelligent people would buy snake oil nowadays, would they?

Well, maybe snake oil isn’t selling so well, lately. But acupuncture? “Organic” foods? Hair analysis? The latest diet book? Megavitamins? “Stress formulas”? Nutritional “cures” for AIDS? Shots to pep you up? Business is booming for health quacks. Their annual take is in the billions. Spot reducers, “immune boosters,” water purifiers, “ergogenic aids,”

systems to “balance body chemistry,” special diets for arthritis. Their product list is endless.

What sells is not the quality of their products, but their ability to influence their audience. To those in pain, they promise relief. To the incurable, they offer hope. To the nutrition-conscious, they say, “Make sure you have enough.” To a public worried about pollution, they say, “Buy natural.” To one and all, they promise better health and a longer life. Modern quacks can reach people emotionally. Here is how they do it.



What sells is not the quality of their products, but their ability to influence their audience.

Appeals To Vanity

Many people mistakenly believe that vitamins make them feel energetic or have relieved various symptoms. The first step toward hooking people is commonly an appeal to curiosity, persuading the person to *try and see*. The next step is an appeal to disregard logic and scientific evidence in favor of personal experience—to *think for yourself*. Supplementation is encouraged by a distorted concept of *biochemical individuality*—that everyone is unique enough to disregard the Recommended Dietary Allowances (RDAs). Quacks won’t tell you that the RDAs are deliberately high enough to allow for individual differences. A more dangerous appeal of this type is the suggestion that although a remedy for a serious disease

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has not been shown to work for other people, *it still might work for you. (You are extraordinary!)*

A more subtle appeal to your vanity underlies the message of the TV ad quack: *Do it yourself—be your own doctor.* “Anyone out there have ‘tired blood?’” he used to wonder. (Don’t bother to find out what’s wrong with you, however. Just try my tonic.) “Troubled with irregularity?” he asks. (Pay no attention to the doctors who say you don’t need a daily movement. Just use my laxative.) “Trouble sleeping?” (Don’t bother to solve the underlying problem. Just try my sedative.)

Turning Customers into Salespeople

Most people who think an unorthodox method has helped them enjoy sharing

their success story with their friends. People who give such *testimonials* are usually motivated by a sincere wish to help others. Rarely do they realize how difficult it is to evaluate a “health” product on the basis of personal experience. The average person who feels better after taking a product will not be able to rule out coincidence—or the placebo effect (feeling better for taking a supposedly positive step). Since we tend to believe what others tell us of personal experiences, testimonials can be powerful persuaders. Despite their unreliability, they are the cornerstone of the quack’s success.

Multilevel companies that sell nutritional products systematically turn their customers into salespeople. “When you share our products,” says the sales manual

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Vulnerability to Quackery

Victims of quackery usually have one or more of the following vulnerabilities:

Lack of suspicion. Many people believe that if something is printed or broadcast, it must be true or somehow its publication would not be allowed. People also tend to believe what others tell them about personal experience. Many people believe that any health-related claim in print or in a broadcast must be true, and many are attracted by promises of quick, painless, or drugless solutions to their problems.

Belief in magic. Some people are easily taken in by the promise of an easy solution to their problem. Those who buy one fad diet book after another fall into this category.

Overconfidence. Despite P.T. Barnum’s advice that one should “never try to beat a man at his own game,” some strong-willed people believe they are better equipped than scientific researchers and other experts to tell whether a method works and that if they look at “all sides” of a controversy they can figure out what is correct without expert help.

Desperation. Many people faced with a serious health problem that doctors cannot solve become desperate enough to try almost anything that arouses hope. Many people suffer from chronic aches, pains, or other discomforts for which medicine cannot offer clear-cut diagnoses or effective treatment. The more persistent the condition, the more susceptible the sufferer may be to promises of a “cure.” Fears of social unacceptability or growing old (wrinkles, loss of hair and sensory acuity, decreased sexual potency, and incontinence) can also lead people astray.

Alienation. Some people feel deeply antagonistic toward scientific medicine but are attracted to methods represented as “natural” or otherwise unconventional. They may also harbor extreme distrust of the medical profession, the food industry, drug companies, and government agencies.

Induced Hypoglycemic Treatment

A case of case histories leading to trouble

Induced Hypoglycemic Treatment (IHT) is one of several cancer-treatment methods offered by BioPulse International, which operates clinics in Mexico and Germany and plans to open additional facilities elsewhere. The company's Web site states that IHT uses a regulated level of insulin and other medications to induce a sleeping state during which the attending physician "regulates blood oxygen levels, body temperature, and pH levels to target the cancerous tumors." The sessions normally last about an hour.

The "BioPulse program with IHT" costs \$5,000 per week for the first four weeks and \$3,500 per week thereafter. The program usually includes "detoxification" with colonic irrigation; intravenous infusions of vitamin, minerals, amino acids, and enzymes; oral supplements; dietary strategies; and referral to "biological dentists" to remedy alleged problems caused by amalgam fillings and root canals. A four-week program that includes one session of whole-body hyperthermia (an unsubstantiated treatment in which the body's temperature is temporarily raised to 106°F) costs \$24,000. The sleep sessions are usually done once a day, five days a week, for three to seven weeks. Advance payment is required.

IHT is claimed to work by (a) starving cancer cells of glucose; (b) raising the blood pH to an alkaline state that is hostile to tumors; (c) increasing blood oxygen saturation, which prevents "anaerobic" tumor cells from thriving; (d) cleansing the body through sweating; and (e) restoring the body's energy levels and increasing appetite. However, this rationale is not logical.

(a) Cancer cells cannot be selectively "starved" by lowering blood sugar. If blood sugar is lowered far enough to damage cells, the body's brain cells would be among the first casualties. Hypoglycemic episodes are fairly common among diabetics who take insulin, including diabetics who have cancer. If hypo-

glycemia could selectively kill cancer cells, it stands to reason that diabetics would have a lower incidence of cancer as well as a higher recovery rate. But neither of these has been detected.

(b) The body's self-regulatory mechanisms keep blood pH within a narrow range. This range is not regulated by insulin. Even if insulin could raise the blood pH, it would have no effect on any cancer.

(c) Blood oxygen saturation is not regulated by insulin. Nor are tumors anaerobic. The theory that tumor cells thrive when oxygen-deprived was discredited more than fifty years ago. Growth requires both nutrients and oxygen. Solid tumors require more because they grow faster than the corresponding normal cells.

(d) The main substance excreted in sweat is sodium chloride (table salt), which is why sweat tastes salty. Most chemical waste products are excreted by the liver and kidneys. Increasing perspiration does not "detoxify" the body. Nor is there any valid reason to believe that "accumulated toxins" are responsible for the majority of cancers or that removing such alleged chemicals would be therapeutic.

(e) Hypoglycemic episodes are usually followed by several hours of depressed functioning. Many factors can influence how energetic people feel. Giving seriously ill cancer patients new hope, for example, may make them feel better—and more energetic. But if the hope proves false, the good feeling will quickly disappear.

The BioPulse site includes skimpy case histories of four people who apparently believe that IHT was highly effective against their cancers, but the reports were made only a few months after the treatment was administered. Three of the patients have also had standard treatment. Three of the reports state that the patients still have evidence of cancer but claim to have improved or stabilized. The standard

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WEB WATCH

• This month's ratings are by Stephen Barrett, M.D., board chairman of Quackwatch, Inc., which is working hard to improve the quality of health information on the Web. He now operates four Web sites: Quackwatch (<http://www.quackwatch.com>), Chirobase (<http://www.chirobase.org>), MLM Watch (<http://www.mlmlwatch.org>), and NutriWatch (<http://www.nutriwatch.org>).

BEST

The Institute of Food Technologists' redesigned Web site (<http://www.ift.org>) provides ready access to its scientific status summaries and monthly "Communicators Alert" newsletter, which is also available by e-mail.

The Council for Agricultural Science and Technology (CAST) Web site (<http://www.cast-science.org/castpubs.htm>) provides publications on food, nutrition, and agricultural issues.

FoodSafety.gov (<http://www.foodsafety.gov>) provides a gateway to government information on food safety.

WORST

Healthexcel (<http://www.healthexcel.com>) offers "customized nutrition through metabolic typing." Its proprietor, "Ecological Lifestyle Advisor" William Linz Wolcott, is promoted as "the world's leading authority on the modern clinical science of metabolic typing." His book *The Metabolic Typing Diet* includes a questionnaire to determine whether you are the "protein type," "carbo type," or "mixed type" and other self-tests "to identify a diet tailored to your body chemistry, and yours alone." His theories are also expounded on <http://www.metabolictyping.com>. A "self-test" can be obtained by mail by sending a blood sample to Wolcott's partner, "nutritional pioneer" Dr. Harold Krystal, D.D.S. (<http://www.bloodph.com>). The \$156 fee includes an instructional video and enough material for two "blood pH tests" that supposedly indicate what diet and supplements should be used.

Nutri-West's online catalog (<http://www.nutriwest.com/index/products>) makes unsubstantiated claims for a huge line of supplement concoctions marketed primarily through chiropractors. To access the catalog, readers must agree not to hold the company or any of its contributors responsible for "any injury, loss or damage caused or alleged to be caused by any information within the entire Product Catalog."

of one such company, "you're not just selling. You're passing on news about products you believe in to people you care about. Make a list of people you know; you'll be surprised how long it will be. This list is your first source of potential customers." A sales leader from another company suggests, "Answer all objections with testimonials. That's the secret to motivating people!"

Millions of Americans have signed up as multilevel distributors. Like many drug addicts, they become suppliers to support their habit. A typical sales pitch goes like this: "How would you like to look better, feel better and have more energy? Try my vitamins for a few weeks." People normally have ups and downs, and a friend's interest or suggestion, or the thought of taking a positive step, may actually make a person feel better. Many who try the vitamins will mistakenly think they have been helped—and continue to buy them, usually at inflated prices.

False hope for the seriously ill is quackery's cruelest form because it can lure victims away from effective treatment.

plify. To promote "organic" foods, they lump all additives into one class and attack them as "poisonous." They never mention that natural toxicants are prevented or destroyed by modern food technology. Nor do they let on that many additives are naturally occurring substances.

Sugar has been subject to particularly vicious attack, being (falsely) blamed for most of the world's ailments. But quacks do more than warn about imaginary ailments. They sell "antidotes" for real ones. Care for some vitamin C to reduce the danger of smoking? Or some vitamin E to combat air pollutants? See your local salesperson.

Quackery's most serious form of fear-mongering has been its attack on water fluoridation. Although fluoridation's safety is established beyond scientific doubt, well-planned scare campaigns have persuaded thousands of communities not to adjust the fluoride content of their water to prevent cavities. Millions of innocent children have suffered as a result.

Hope for Sale

Since ancient times, people have sought at least four different magic potions: the love potion, the fountain of youth, the cure-all, and the athletic superpill. Quackery has always been willing to cater to these desires. Yesteryear's products were unicorn horn, special elixirs, amulets, and magical brews. Today's products are vitamins, bee pollen, ginseng, Gerovital, "glandular extracts," special diets, and many more.

False hope for the seriously ill is quackery's cruelest form because it can lure victims away from effective treatment. Even when death is inevitable, however, false hope can do great damage. People who accept the reality of their fate not only die psychologically prepared, but also can put their affairs in order. Those who buy false hope can waste not only financial resources but what little remaining time they have left.

Clinical Tricks

The most important factor in quacks' success is probably their ability to exude *self-confidence*, which can be contagious and spread to patients and their loved ones. Even when admitting that a method is unproven, they can attempt to minimize this by mentioning how difficult and expensive it is to get something proven to the satisfaction of the FDA these days.

Because people like to make choices, quacks often refer to their methods as *alternative*. However, methods that are unsafe, ineffective, or unproven are not genuine alternatives to proven ones.

Quacks don't always limit themselves to phony treatment. Sometimes they offer legitimate treatment as well—the quackery is promoted as *something extra*. One example is the "orthomolecular" treatment of mental disorders with high dosages of vitamins in addition to standard forms of treatment. Patients who receive the "extra" treatment often become convinced that they need to take vitamins for the rest of their life. Such an outcome is inconsistent with the goal of good medical care, which should be to discourage unnecessary treatment. Another clever trick is to include the product or procedure in a list of otherwise commonly accepted practices in order to promote it by *association*. They may say, for example, that their method works best when combined with lifestyle changes (which, quite often, will produce tangible benefits).

The *one-sided coin* is a related ploy. When patients on combined (standard and quack) treatment improve, the quack remedy gets the credit. If things go badly, patients are told they arrived too late, and standard treatment is faulted. Many quacks who mix proven and unproven treatment call their approach *complementary* or *integrative* therapy.

Quacks also capitalize on the natural healing powers of the body by *taking credit* whenever possible for improvement in a patient's condition. One multilevel company—anxious to avoid legal difficulty in marketing its herbal concoction—makes no health claims whatsoever. "You take the product," a spokesperson suggests on the company's introductory videotape, "and tell me what it does for you." An opposite tack—*shifting*

blame—is used by many cancer quacks. If their treatment doesn't work, it's because radiation and/or chemotherapy have "knocked out the immune system."

Another selling trick is the use of *weasel words*. Quacks often use this technique in suggesting that one or more items on a list is reason to suspect that you may have a vitamin deficiency, a yeast infection, or whatever else they are offering to fix.

Disclaimers are a related tactic. Instead of promising to cure your specific disease, some quacks will offer to "cleanse" or "detoxify" your body, balance its chemistry, bring it in harmony with nature, or do other things to "help the body to heal itself." This type of disclaimer serves two purposes. Since it is impossible to measure these processes, it is difficult to prove the quack wrong. In addition, if the quack is not a physician, the use of nonmedical terminology may help to avoid prosecution for practicing medicine without a license.

Books espousing unscientific practices typically suggest that the reader consult a doctor before following their advice. This disclaimer is intended to protect the author and publisher from legal responsibility for any dangerous ideas contained in the book. Both author and publisher know full well, however, that most people won't ask their doctor. If they wanted their doctor's advice, they probably wouldn't be reading the book in the first place.

Sometimes the quack will say, "You may have come to me too late, but I will try my best to help you." That way, if the treatment fails, you have only yourself to blame. Patients who see the light and abandon quack treatment may also be blamed for stopping too soon.

The *money-back guarantee* is a favorite trick of mail-order quacks. Most have no intention of returning any money—but even those who are willing know that few people will bother to return the product.

Another powerful persuader—*something for nothing*—is standard in ads promising effortless weight loss. It is also the hook of the telemarketer who promises a "valuable free prize" as a bonus for buying a water purifier, a six-

month supply of vitamins, or some other health or nutrition product. Those who bite receive either nothing or items worth far less than their cost. Credit card customers may also find unauthorized charges to their account.

Another potent technique is *cultural association*, in which promoters ally themselves with religious or other cultural beliefs by associating their product or service with an article of faith or prejudice of their target audience.

In a contest for patient satisfaction, art will beat science nearly every time. Quacks are masters at the art of delivering health care. The secret to this art is to make patients believe they are cared about as people. To do this, quacks *lather love lavishly*. One way this is done is by having receptionists make notes on the patients' interests and concerns in order to mention them during future visits. This makes each patient feel special in a very personal sort of way. Some quacks even send birthday cards to every patient. Although seductive tactics may give patients a powerful psychological lift, they may also encourage overreliance on an inappropriate therapy.

Handling the Opposition

Quacks are involved in a constant struggle with legitimate health care providers, mainstream scientists, government regulatory agencies, and consumer protection groups. Despite the strength of this science-based opposition, quackery manages to flourish. To maintain their credibility, quacks use a variety of clever ploys. Here are some favorites:

"*They persecuted Galileo!*" The history of science is laced with instances where great pioneers and their discoveries were met with resistance. Harvey (nature of blood circulation), Lister (antiseptic technique), and Pasteur (germ theory) are notable examples. Today's quack boldly asserts that he is another example of someone ahead of his time. Close examination, however, will show how unlikely this is. First of all, the early pioneers who were persecuted lived during times that were much less scientific. In some cases, opposition to their ideas stemmed from religious forces. Secondly, it is a basic

principle of the scientific method that the burden of proof belongs to the proponent of a claim. The ideas of Galileo, Harvey, Lister, and Pasteur overcame their opposition because their soundness can be demonstrated.

A related ploy, which is a favorite with cancer quacks, is the charge of *conspiracy*. How can we be sure that the AMA, the FDA, the American Cancer Society, drug companies, and others are not involved in some monstrous plot to withhold a cancer cure from the public? To begin with, history reveals no such practice. The elimination of serious diseases is not a threat to the medical profession—doctors prosper by curing diseases, not by keeping people sick. It should also be apparent that modern medical technology has not altered the zeal of scientists to eliminate disease. When polio was conquered, iron lungs became virtually obsolete, but nobody resisted this advancement because it would force hospitals to change. Neither will medical scientists mourn the eventual defeat of cancer. Moreover, how could a conspiracy to withhold a cancer cure be hoped to succeed? Many physicians die of cancer each year. Do you believe that the vast majority of doctors would conspire to withhold a cure for a disease which affects them, their colleagues and their loved ones? To be effective, a conspiracy would have to be worldwide. If laetrile, for example, really worked, many other nations' scientists would soon realize it.

Claims of *suppression* are used to market publications as well as treatments. Many authors and publishers purport to offer information that your doctor, the AMA, and/or government agencies "don't want you to know about."

Organized quackery poses its opposition to medical science as a *philosophical conflict* or *paradigm shift*, rather than a clash between proven versus unproven or fraudulent methods. This creates the illusion of a "holy war" rather than a conflict that could be resolved by examining the facts. Another diversionary tactic is to charge that quackery's critics are *biased* or have been *bought off* by drug companies.

Quacks like to charge that "*science doesn't have all the answers.*" That's true, but it doesn't claim to have them. Rather,

it is a rational and responsible process that can answer many questions—including whether procedures are safe and effective for their intended purposes. It is quackery that constantly claims to have answers for incurable diseases. The idea that people should turn to quack remedies when frustrated by science's inability to control a disease is irrational. Science may not have all the answers, but quackery has no answers at all! It will take your money and break your heart. Medicine's shortcomings do not justify what quacks do.

Many treatments advanced by the scientific community are later shown to be unsafe or worthless. Doctors also make mistakes. Such failures become grist for organized quackery's public relations mill in its ongoing attack on science. Actually, "failures" reflect a key element of science: its willingness to test its methods and beliefs and abandon those shown to be in-

valid. True medical scientists have no philosophical commitment to particular treatment approaches, only a commitment to develop and use methods that are safe and effective for an intended purpose. When a quack remedy flunks a scientific test, its proponents merely reject the test.

Each of these ploys represents a basic technique called *misdirection*—analogous to what magicians do to shift the audience's attention away from what is important in order to deceive them. When faced with criticism, quacks deftly change the subject.

How to Avoid Being Tricked

The best way to avoid being tricked is to stay away from tricksters. Unfortunately, in health matters, this is no simple task. Quackery is not sold with a warning label. Moreover, the dividing line between what

is quackery and what is not is by no means sharp. A product that is effective in one situation may be part of a quack scheme in another. (Quackery lies in the promise, not the product.) Practitioners who use effective methods may also use ineffective ones. Even outright quacks may relieve some psychosomatic ailments with their reassuring manner.

This article illustrates how adept quacks are at selling themselves. Sad to say, in most contests between quacks and ordinary people, the quacks still are likely to win. **NF**

Dr. Barrett, a retired psychiatrist who resides in Allentown, Pennsylvania, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud. Dr. Jarvis, the council's founder and executive director, is professor of public health and preventive medicine at Loma Linda University.

BRIEFS

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NATUROPATHIC ACCREDITATION AGENCY IN JEOPARDY

The Council on Naturopathic Medical Education (CNME), the accrediting agency for U.S. naturopathic medical colleges, may have its federal recognition withdrawn. The U.S. Department of Education staff and the National Advisory Committee on Institutional Quality and Integrity have asked U.S. Secretary of Education Richard W. Riley to reject CNME's petition for renewal. According to a report in *Probe* magazine, the recommendation was based on CNME's failure to respond appropriately to misconduct at one of the three American schools it accredits. Riley is expected to decide early this spring. CNME has indicated that it will appeal if its recognition is withdrawn.

LABELING OF TRANS FATTY ACIDS PROPOSED

The FDA has published a proposed rule that would require the amount of trans fatty acids in foods, including dietary supplements, to be included in the amount and percentage Daily Value declared in the nutritional labeling of saturated fats

(*Federal Register* 64: 62745–62825, 1999). When trans fatty acids are present, the declaration of saturated fatty acids would be required to contain a symbol that refers to a footnote stating the number of grams of trans fatty acids per serving. Trans fatty acids would be subject to the same limits as saturated fats for the purposes of nutrient content claims, health claims, or disclosure and disqualifying levels. The FDA also proposed to define the nutrient content claim for "trans fat free." The proposal is at <http://vm.cfsan.fda.gov/~lrd/fr991117.html>

GENETICALLY ENGINEERED FOOD LABELING

On November 16, Rep. Dennis Kucinich, D-OH, and 20 cosponsors introduced the Genetically Engineered Food Right to Know Act (H.R. 3377). The bill would require labels on food that contains or is produced with genetically engineered material, which it defines as material derived from any part of a genetically engineered organism, without regard to whether the altered molecular or cellular characteristics of the organism are detectable in the material. The Institute of Food Technologists has concluded that genetic modification is safe, will increase world food production, and can improve plant characteristics that will

benefit farmers, consumers, and the environment. The FDA has stated that special labeling would be inappropriate unless a technique significantly changes the composition of a food. Proponents of labeling claim that legislation is needed to enable consumers to exercise their "right to choose." Some who advocate labeling perceive it as an efficient way to undermine public confidence in genetically modified foods. Forty-eight congressional representatives have asked the FDA to require labels.

SECRETIN INEFFECTIVE FOR AUTISM

Three recently published studies have found no evidence that the hormone secretin is an effective treatment for autism. Questions have also been raised about its safety. In a letter published in the *Wall Street Journal* (4/16/99), seven professionals warned that: (a) since injectable secretin is extracted from pig intestines, repeated doses might cause the body to make antibodies to secretin; (b) smaller protein fragments in secretin preparations might trigger immune reactions; (c) the amino acid cysteine, which is used to stabilize the preparations, could cause other adverse effects. Information about the studies is available on [Quackwatch.com](http://www.Quackwatch.com). **NF**

Book Reviews

Analysis and Ratings

Our reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers.

Bitter Medicine

Manfred Kroger, PhD

The Complete Book of Symptoms & Treatments, by Roland Bettschart, Gerd Glaeske, Kurt Langbein, Reinhard Saller, and Christian Skalnik; edited by Edzard Ernst (Boston, MA: Element Books, 1998), 953 pp., \$24.95 paperback. ISBN 1-86204-424-4.

Research at Yale University revealed that in 1996, use of unconventional therapists was substantially lower in the United States than had been reported in earlier surveys. Chiropractors topped the list, with 3.3% of Americans seeking treatments from them, followed by massage (2%), herbal remedies (1.8%), spiritual healing (1.8%), nutritional advice (1.1%), acupuncture (0.6%), meditation (0.5%), and homeopathic remedies (0.4%). Overall, 6.5% of Americans had visited both conventional and complementary therapists, and 1.8% had sought unconventional services only.

Let's face it, unconventional treatments have always been around, are here to stay, and will most likely grow larger in proportion and visibility, as has already happened to vegetarianism and organic foods. The conflict between its staunchest adherents and science-based medicine will continue unabated. This tug of war is observed and reported with great interest by the popular media. That's where this book, subtitled "Your Comprehensive Guide to the Safety and Effectiveness of Alternative and Complementary Medicine for Common Ailments," comes in. We most certainly do need an impartial, knowledgeable, and comprehensive source to guide us, consumers and profes-

sionals alike, through this hodgepodge of dozens of choices available in an often bizarre bazaar of therapies.

To date this is the best and most comprehensive overview I have seen on the subject. And it seems to be impartial too. *Consumer Reports* couldn't have done it better. I proudly state that it is a German book, first published in 1995, and in 1998 translated for Element Books in England. In the past, that publisher has been overly partial to authors of alternative medical therapies. Many of its titles have received negative ratings by *Nutrition Forum*. One might even say that Element Books is not a proponent of mainstream medicine and what science stands for. As with most Element books, this one features an appendix of "useful addresses" (93 on 8 pages), which most certainly were not in the original German edition. I wonder whether Europeans are interested in the California School of Herbal Studies or the Australian Federation of Homoeopathy. I found it rather telling that the book's German title, *Bitter Natural Medicine, Effectiveness and Evaluation of Alternative Treatments, Diagnostic Procedures, and Medications*, had not been correctly translated into English (the text, however, is an admirable achievement by translator D. Wood and editor Professor Edzard Ernst). Bitter medicine is a pejorative term, something unpleasant, something forced on an unwilling ailing person, and possibly something that is quite out of the ordinary.

Indeed, the book shows again and again that most alternative therapies are out of the ordinary and do not deliver at all what their proponents all over the world claim. Some forty therapies (from acupressure/shiatsu to vitamins) are evaluated for about eighty different maladies (from AIDS to worms). These labels are provided to readers: *useful, may be of some use, of little use, inappropriate, and not advised*. The latter ratings show up more often than the former. That's no surprise when you consider that osteoporosis is pounced upon by twenty different therapists with many healing promises. For each ill-health condition, causes, symptoms and orthodox treatment are given, and then the authors cover all the known alternative therapies. So we learn that for osteoporosis, aromatherapy is inappropriate, cell

therapy is not advised, magnetic field therapy is of little use, physical therapies may be useful as bone strengthening measures, and willow bark herbal remedy may be of some use if pain alleviation is sought (it contains salicin, which may be more readily available as acetyl salicylate in aspirin, but that would be crossing over into orthodox drug treatment). The book's twelve diagnostic techniques, running the gamut from dowsing to hair mineral analysis to pendulum diagnosis, are all rated "not advised as the sole method of diagnosis."

The five authors, overall, come across as thorough, authoritative, and objective. In this exhaustive overview they deal largely negative blows to alternative treatment, which should not sit too well with the alternative (the politically correct term nowadays is "complementary") health and healing establishment. And it was courageous for Element Books to publish this information, in view of the loyalty they have shown for the alternative side in the past. Three of the authors are freelance writers with impressive health writing backgrounds; the other two are medical doctors and educators, albeit in the complementary medical area. The book's editor is the Director of the Centre for Complementary Health Studies at the University of Exeter, England.

This book is a valuable piece of literature—consumer intelligence, if you wish. It provides a rational overview of a confusing field for laypersons and professionals alike. There are no references in this work; nevertheless, I will call it a scholarly, encyclopedic contribution.

RECOMMENDED

Love of Tea

Manfred Kroger, PhD

The Herb Tea Book: Blending, Brewing, and Serving Teas for Every Mood and Occasion, by Susan Clotfelter (Loveland, CO: Interweave Press, 1998), 128 pp., \$12.95 paperback. ISBN 1-883010-60-8.

Here is a slender and pretty booklet, a good reference and a fun read. Along with sections on basic nomenclature, history, and tea processing technology, the volume offers information on home tea

brewing and all the tools needed to do it right. Most of it is a collection of forty recipes (with instructions) supplied by fifteen tea scholars and other cognoscenti. All of these recipes involve herbs and spices to produce beverages under such rubrics as "energizing," "relaxing," "comforting," "festive," and "seasonal," plus two others entitled "green teas" and "chai," the latter a home-blended spicy tea by and for true tea aficionados.

Some thirty herbal ingredients are described in the first chapter, including remarks on their safety. The author challenges her readers to grow and gather a few of these to make the final result a totally integrated soothing experience.

The writing is excellent, no medical claims are made, and some interesting facts are presented. All in all, it's a no-nonsense book that can be made to work for the production of satisfaction at several levels—culinary, creative, social, and intellectual.

RECOMMENDED

Silly Nutrition

Manfred Kroger, PhD

Vitamins & Minerals: A Step-by-Step Guide, by Karen Sullivan (Rockport, MA: Element Books, 1997), 58 pp., \$ 7.95 hardback. ISBN 1-86204-011-7.

Have you ever been attracted to a chic, good-looking, well-groomed individual? And then he/she utters a few words and you are repulsed by what you hear. This book is like that. I read, I was dazzled, I shuddered. Under the cute veneer of packaging and layout, I found some of the goofiest utterances I've ever encountered. The whole product is nothing but a motley thirty-page compilation of twelve vitamins and eighteen minerals lifted from various standard and unreliable sources, plus twenty-three more pages describing what they are, what roles they play, where they are in nature, and how to take them as supplements.

There is also a list of thirty-four common ailments that might be alleviated by taking these micronutrients. For arthritis,

you're advised to increase intake of vitamins A,C,E, D, and B-complex, especially B-5, as well as calcium, magnesium, and copper (worn as a bracelet). The nonsense of mostly unsubstantiated claims is repeated over and over again.

The following quotations, half-baked, inane, and irrational, are samples of why this booklet should be rejected by the public:

"In the body, proteins, carbohydrates, and fats combine with other substances to yield energy and build bones and tissue."

"Ideally, vitamins and minerals are found in all organic foods, but in reality, processing and other modern methods of food production may deplete them. Organic food is generally more nutritious."

"Eat the skins of fruits and vegetables whenever possible (I do admire the folks who utilize citrus and banana peels!)."

Enough already! **NF**

NOT RECOMMENDED

[continued from page 11]

way to report cancer-treatment outcome is to collect detailed data for at least five years and to follow enough patients to determine whether the outcome is better than would be expected from other treatment or from the natural course of the disease. Treatment effectiveness cannot be judged from anecdotes, testimonials, skimpy case reports, or short-term follow-up. BioPulse began doing IHT in June 1999 and re-

ported "outstanding results" less than three months later. The results were announced at the annual convention of the Cancer Control Society and in a cover story in *Alternative Medicine Digest*.

Insulin-coma treatment (also called "insulin shock") was legitimately used to treat schizophrenia beginning in the 1930s. Its use declined after electroconvulsive treatment was developed, and it was abandoned, beginning in the 1950s, as a potent antipsychotic drugs became

available. Permanent measurable complications are rare but have included memory impairment, reduced intelligence, strokes, abnormal heart rhythms, and even death. The *Alternative Medicine Digest* report states that BioPulse's sleep treatment is aimed to lower the patient's blood-sugar levels to "20 mg/dL or below," which is extremely low. Although BioPulse reports no complications so far, insulin coma should not be regarded as risk-free. **NF**

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FTC ATTACKS INTERNET FRAUDS

The FTC has obtained consent agreements involving three Internet marketers, one that had been selling Essiac tea as a cancer cure and two that had been selling cetylmristoleate (CMO) for arthritis and several other serious diseases. To help boost their traffic, two of the companies used metatags (keywords embedded in the source code for a Web page that are invisible to an average consumer but are used by some search engines to respond to search requests). One also used hyperlinks to direct visitors to other purportedly independent Web sites that it actually had created to promote its product deceptively.

DIETARY GUIDELINES DRAFTED

The HHS/USDA Dietary Guidelines Committee has drafted the fifth (2000) edition of *Dietary Guidelines for Americans*, which is intended serve as the basis of federal nutrition policy and provide advice to consumers about food choices that promote health and decrease the risk of chronic disease. The proposed guidelines—three more than in previous versions—are: (1) aim for a healthy weight; (2) be physically active each day; (3) let the pyramid guide your food choices; (4) choose a variety of grains daily, especially whole grains; (5) choose a variety of fruits and vegetables each day; (6) keep foods safe to eat; (7) choose a diet that is low in saturated fat and cholesterol and moderate in total fat; (8) choose beverages and foods that limit your intake of sugars; (9) choose and prepare foods with less salt; and (10) if you drink alcoholic beverages, do so in moderation. The draft report is accessible at www.ars.usda.gov/dgac and can be read using Adobe Acrobat. The final version is expected later this year.

AGRICULTURAL BIOTECHNOLOGY SUPPORTED

A National Research Council committee has found no evidence suggesting that any currently marketed genetically modified foods are unsafe to eat. The committee also concluded that no strict distinc-

[continued on page 22]

The Truth About Network Marketing

Turning ordinary people into quacks

by Stephen Barrett, MD

Don't be surprised if a friend or acquaintance tries to sell you vitamins, herbs, homeopathic remedies, magnets, or weight-loss powders with claims that they can benefit your health. Millions of Americans have signed up as distributors for companies that market such products from person to person. Often they have tried the products, concluded that they work, and become suppliers to support their habit.

Multilevel marketing (MLM)—also called network marketing—is a form of direct sales in which independent distributors sell products, usually in their customers' homes, by telephone, or through the Internet. In theory, distributors can make money not only from their own sales but also from those of the people they recruit.

Becoming an MLM distributor is simple and requires no special knowledge of health or nutrition. Many people do so initially in order to buy their own products at a discount. For a small sum of money—usually between \$35 and \$100—a company sells a distributor kit that includes product literature, sales aids (such as a videotape or audiotape), price lists, order forms, and a detailed instruction manual. The application form is usu-

ally a single page that asks only for identifying information.

Many MLM companies publish a magazine or newsletter containing company news, philosophical essays, product information, success stories, and photographs of top salespeople. Most companies, and tens of thousands of indi-

vidual distributors, also maintain Web sites. During a

recent search using google.com, "MLM" yielded more than fifty-three thousand links and the phrase "network marketing" yielded more than twenty thousand.

A pyramid scheme is an illegal promotion in which many people at the bottom of the pyramid pay money to a few at the top.

Questionable Financial Opportunity

Network marketers can buy products "wholesale," sell them "retail," and recruit other distributors who can do the same. When enough distributors have been enrolled, the recruiter is eligible to collect a percentage of their sales. Companies suggest that this process provides a great money-making opportunity. However, it is unlikely that people who don't join during the first few months of operation or become one of the early distributors in their community can build enough of a sales pyramid to do well. And many who stock up on prod-

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ucts to meet sales goals get stuck with unsold products that cost thousands of dollars. Some companies permit direct ordering of their products, which avoids this problem.

An Amway Corporation report indicates that the vast majority of its distributors make very little money. Amway's 1998 *Business Review* tabulates figures gathered from April 1994 through March 1995 from distributors who attempted to

make a retail sale, presented the Sales and Marketing Plan, received bonus money, or attended a company or distributor meeting in the month surveyed. The average gross income for these "active distributors" was \$88 per month. The report defines "gross income" as the amount received from retail sales minus the cost of

[continued on page 20]

Recent MLM Regulatory Actions

Body Wise International, of Carlsbad, California, markets "fitness" products and weight-management products. In 1995, the FTC charged the company with making unsubstantiated claims that Cardio Wise was "designed to give an extra margin of insurance against heart disease" and that its weight-management products would foster weight loss without dieting. The company signed an agreement prohibiting it from making unsubstantiated health-related claims in the future.

Nu Skin International, Inc., of Provo, Utah, sells body-care products and dietary supplements. Nu Skin's Interior Design division markets expensive antioxidant, phytochemical, and "active enzyme" products. In 1993, the company and three of its distributors agreed to pay a total of \$1,225,000 to settle FTC charges that they made unsubstantiated claims for Nutriol Hair Fitness Preparation and two skin-care products. In 1997, the company agreed to pay \$1.5 million to settle charges that it had made unsubstantiated claims for five more of its products. The products, which contained chromium picolinate and L-carnitine, were falsely claimed to reduce fat, increase metabolism, and preserve or build muscle.

Morinda, Inc., of Linden, Utah, has alleged that its Tahitian Noni juice can treat, cure, or prevent numerous diseases, including diabetes, depression, hemorrhoids, and arthritis. In 1998, the attorneys general of Arizona, California, New Jersey, and Texas announced a settlement under which the company would no longer make disease-related claims that are unsubstantiated or lack FDA approval. The agreement also called for consumer refunds and payment of \$100,000 for investigative costs.

In 1998, the FDA ordered **Reliv International, Inc.**, of Chesterfield, Missouri, to stop making unsubstantiated claims that its Arthaeffect is effective against degenerative joint conditions.

In 1998, **New Vision International, Inc.**, of Scottsdale, Arizona, and a leading distributor agreed to settle FTC charges that they made unsubstantiated claims in their advertisements for a dietary supplement combination called "God's Recipe." Ads for the recipe had claimed that it could cure Attention Deficit Disorder (ADD) or Attention Deficit Hyperactivity Disorder (ADHD).

Quest IV Health Products, of Arlington, Texas, has claimed that its Restores+ is effective against ADD, ADHD, and specific symptoms related to these diseases. The company also marketed Caucasicum+ as a treatment for alcoholism and heart disease. In 1999, the Texas attorney general secured a consent agreement under which the company was required to pay \$15,000 and to stop claiming that the products are effective against these conditions or against any other disease.

Managing Irritable Bowel Syndrome

The role of diet, eating habits, stress, and more

Irritable bowel syndrome (IBS)—also called irritable or spastic colon—is a common functional intestinal disorder characterized by recurrent abdominal discomfort and abnormal bowel function. The discomfort often begins after eating and goes away after a bowel movement. The symptoms can include cramps, bloating, constipation, diarrhea, and a feeling of incomplete emptying.

IBS occurs in about one in five Americans, more commonly in women, and more often at times of emotional stress. It usually begins in late adolescence or early adult life and rarely starts after the age of fifty. In severe cases, it can result in missed work days and curtailment of social activities. Although effective help is available, many people with IBS are too embarrassed, pessimistic, or afraid to seek medical care. Even worse, some people who consult a doctor receive insufficient guidance and conclude that nothing further can be done for them.

Why Symptoms Occur

During normal digestion, foods are broken down in the stomach and small intestine so that their nutrients can be absorbed into the body. Undigested or partially digested portions—mostly in liquid form—then enter the large intestine (colon), where most of the water is reabsorbed. Movement through the intestines results from peristalsis, a wavelike contraction of muscles in the intestinal walls that propel their contents forward. When all is well, the end result is stool that is solid but soft enough to be excreted easily.

Diet, eating habits, stress, and various environmental factors can disrupt the normal function of the intestines. If the intestines squeeze too hard or not enough, the partially digested food can travel too rapidly or too slowly through the digestive system. Movement that is too fast will result in diarrhea, because not

enough water is reabsorbed. Movement that is too slow can result in constipation, because too much water is absorbed. Overly hard squeezing (spasm) can result in cramps. However, the diarrhea of IBS can also occur without pain.

IBS symptoms occur after eating because of the gastrocolic reflex—increased movement of the intestinal contents in response to food entering the stomach. The strength of this reflex can be influenced by the volume and temperature of the food and the number of calories it contains. Large meals (particularly high-fat meals) and large numbers of cold beverages can trigger IBS attacks.

Medical Evaluation

A thorough history and physical examination should be obtained. The extent of further evaluation depends on the patient's age, general health, and symptoms. If symptoms have been present for a long time and have a typical pattern, the doctor may rely mainly on the patient's description to diagnose IBS. If symptoms are recent in origin, testing may be needed to be certain that an infection, inflammation, or tumor is not responsible for the symptoms. The tests may include blood tests, stool tests, x-ray examinations, and endoscopy (examination of the colon with a hollow tubular instrument inserted from below).

Management Tips

The first step in managing IBS should be to identify what triggers the symptoms. The factors to consider include food intolerances, eating habits, dietary factors, emotional stress, exercise habits, use of laxatives, and vitamin C intake. It may help to keep a diary that relates symptoms to daily activities.

Many people with IBS are have difficulty digesting lactose (milk sugar). This

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WEB WATCH

This month's ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc., which is working hard to improve the quality of health information on the Web. He now operates four Web sites: Quackwatch (www.quackwatch.com), Chirobase (www.chirobase.org), MLM Watch (www.mlmlwatch.org), and NutriWatch (www.nutriwatch.org).

BEST

The FDA Center for Food Safety and Applied Nutrition dietary supplement page (vm.cfsan.fda.gov/~dms/supplmnt.html) links to a wealth of news and other information pertaining to dietary supplements.

The Diet Debunker section of Phys.com contains brief analyses of many fad diets (www.phys.com/b_nutrition/02_solutions/diet_debunker/diet_debunker.html).

Google (www.google.com) is an extraordinarily fast and powerful search tool that can display up to one hundred links at a time and can access many pages that are no longer posted. Google automatically adds "and" between words that are entered so it returns only pages that include all the search terms. To search for an exact phrase, place the entire phrase in quotation marks. The first search will display up to ten links, but a pull-down menu enables the user to get more.

WORST

Nutritionaltest.com (www.nutritionaltest.com) offers interactive tests that supposedly identify supplements useful for treating a variety of health conditions. A detailed investigative report is available at www.quackwatch.com/12Web/drbbob.html.

Biomedx (www.biomedx.com) promotes live-cell analysis, body wrapping, and a variety of other dubious tests, products, and theories. The site claims, for example: "There is a genetic connection between the food you eat, your blood type, the look of your blood under the microscope, and your state of health. Food can be medicine if chosen correctly, or it can be like poison. Blood typing can give indications to food compatibility and related health issues."

Chiropractor David Wheeler (www.davidwheeler.com) markets the "ultimate natural supplement program for the immune system." The site relates products to about one hundred diseases and conditions but claims that the "the dosage level of the natural supplements Dr. Wheeler recommends are not for a specific disease but for the level of severity of a health condition."

products, plus any bonus. It does not take any business expenses into account. If this figure includes purchases for personal use, the potential profit would, of course, be less. The report also notes that “approximately 41% of all distributors of record were found to be active.”

A pyramid scheme is an illegal promotion in which many people at the bottom of the pyramid pay money to a few at the top. To maintain the process, however, the number of new participants must keep multiplying—which is impossible. When the supply of recruits dries up, the pyramid will collapse, leaving almost everyone but the earliest participants as losers.

To avoid being classified as pyramid schemes, multilevel companies must pay commissions for retail sales but not for recruiting new distributors. However, retail sales are difficult to sustain because most steady customers will become distributors in order to purchase their products “wholesale.” In 1999, the National Association of Attorneys General announced that complaints about multilevel marketing and pyramid schemes were tenth on their list of consumer complaints.

Dubious Health Claims

More than a hundred multilevel companies are marketing health-related products. Most claim that their products are effective for preventing or treating disease. Many falsely claim that their products strengthen the immune system. Some merely suggest that people will feel better, look better, or have more energy if they supplement their diet with extra nutrients. These suggestions are typically accompanied by warnings about faulty diet, food additives, soil depletion, “over-processed” foods, air and water pollution, rising cancer rates, or other alarming issues. A few companies make no claims in their literature but rely on testimonials,

encouraging people to try their products and credit them for any improvement that occurs. Most claim that their products are superior to those of their competitors.

Most multilevel companies tell distributors not to make claims for the products except for those found in company literature. (That way the company can deny responsibility for what distributors do.) However, many companies (or their distributors) hold sales meetings at which people are encouraged to tell their stories to the others in attendance. Some companies sponsor telephone conference calls during which leading distributors describe their financial success, give sales tips, and describe their personal experiences with the products. Testimonials also may be published in company magazines, audiotapes, or videotapes. Testimonial claims can trigger

enforcement action, but since it is time-consuming to collect evidence of their use, government agencies seldom bother to do so.

Government enforcement action against multilevel companies has not been vigorous. These companies are usually left alone unless their promotions become so conspicuous and their sales volume so great that an agency feels compelled to intervene. Even then, few interventions have substantial impact once a company is well established.

Misguided Motivation

The “success” of network marketing lies in the enthusiasm of its participants. Most people who think they have been helped by an unorthodox method enjoy sharing their success stories with their friends. People who give such testimonials are usually motivated by a sincere wish to help their fellow humans. Since people tend to believe what others tell them about personal experiences, testimonials can be powerful persuaders.

Since people tend to believe what others tell them about personal experiences, testimonials can be powerful persuaders.

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Perhaps the trickiest misconception about quackery is that personal experience is the best way to tell whether something works. When someone feels better after having used a product or procedure, it is natural to give credit to it. However, this is unwise. Most ailments are self-limiting, and even incurable conditions can have sufficient day-to-day variation to enable bogus methods to gain large followings. In addition, taking any action often produces temporary relief of symptoms (a placebo effect). For these reasons, scientific experimentation is almost always necessary to establish whether health methods are really effective. Instead of testing their products, multilevel companies urge customers to try them and credit them if they feel better. Some products are popular because they contain caffeine, ephedrine (a stimulant), valerian (a tranquilizer), or other substances that produce mood-altering effects.

Another factor in gaining devotees is the emotional impact of group activities. Imagine, for example, that you have been feeling lonely, bored, depressed, or tired. One day a friend tells you that "improving your nutrition" can help you feel better. After selling you some products, the friend inquires regularly to find out how you are doing. You seem to feel somewhat better. From time to time you are invited to interesting lectures where you meet people like yourself. Then you are asked to become a distributor. This keeps you busy, raises your income, and provides an easy way to approach old friends and make new ones—all in an atmosphere of enthusiasm. Some of your customers express gratitude, giving you a feeling of accomplishment. People who increase their income, their social horizons, or their self-esteem can get a psychological boost that not only can improve their mood but may also alleviate emotionally based symptoms.

Multilevel companies refer to this

process as "sharing" and suggest that everyone involved is a "winner." That simply isn't true. The entire process is built on a foundation of deception. The main winners are the company's owners and the small percentage of distributors who become sales leaders. The losers are millions of Americans who waste money and absorb the misinformation.

Laypersons are rarely qualified to judge whether prospective customers need supplements—or medical care. Even though curative claims are forbidden by the written policies of each company, the sales process encourages customers to experiment with self-treatment. It may also promote distrust of legitimate health professionals and their treatment methods. Former National Council Against Health Fraud president William T. Jarvis, PhD, calls MLM "the most effective system ever devised to turn ordinary people into quacks."

Physician Involvement

During the past few years, thousands of physicians have begun selling health-related MLM products to patients in their offices. The companies most involved appear to be Amway, Nu Skin Interior Design, and Rexall Showcase International. Doctors are typically recruited with promises that the extra income will replace income lost to managed care. The products usually cost much more than similar products marketed through drugstores or health-food stores.

In June 1999, the AMA House of Delegates approved ethical guidelines emphasizing that physicians should not coerce patients to purchase health-related products or recruit them to participate in marketing programs in which the physicians personally benefit, financially or otherwise, from the efforts of their patients. The guidelines clearly frown on doctors profiting from the sale of health-related nonprescription

products such as dietary supplements. However, many will continue to do so.

Recommendations

Consumers would be wise to avoid health-related multilevel products altogether. Those that do have nutritional value (such as vitamins and low-cholesterol foods) are invariably overpriced and may be unnecessary. Those promoted as remedies are generally either unproven, bogus, or intended for conditions that are unsuitable for self-medication. I do not believe it is possible to make an honest living selling health-related products through network marketing.

Government agencies should police the multilevel marketplace aggressively, using undercover investigators and filing criminal charges when wrongdoing is detected. People who feel they have been defrauded by MLM companies should file complaints with their state attorney general and with local FDA and FTC offices. A letter detailing the events may be sufficient to trigger an investigation. The more complaints these agencies receive, the more likely that corrective action will be taken. **NF**

Dr. Barrett, a retired psychiatrist who resides in Allentown, Pennsylvania, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud. His MLM Watch Web site (www.mlmwatch.org) provides a skeptical view of multilevel marketing.

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[continued from page 19]

results from a shortage of lactase, an enzyme normally produced by cells lining the small intestine. Lactase breaks down milk sugar into simpler substances that are absorbed into the bloodstream. When there is not enough lactase, undigested lactose can ferment in the large intestine and cause nausea, cramps, bloating, flatulence, and diarrhea that begin between thirty minutes and two hours after consuming lactose-containing foods. The severity of symptoms varies with the amount of lactose the individual can tolerate. To determine whether lactose intolerance is a factor in IBS, the patient can experiment to see whether symptoms are related to milk intake. Laboratory testing may also be useful. If lactose intolerance is significant, lactase drops or tablets can be added to ordinary milk, low-lactose products can be substituted, or dairy products can be avoided (in which case the patient should take calcium supplements).

Bloating or excessive gas can also be

related to eating habits and diet. Drinking carbonated beverages can introduce gas into the intestines and cause abdominal pain. Eating or drinking rapidly, chewing gum, smoking, nervously gulping air, or wearing loose dentures can cause some people to swallow large amounts of air, some of which reaches the large intestine. Gas can also be produced by such foods as beans, onions, broccoli, and cabbage. Eating more slowly and minimizing gas-forming foods may help.

Since caffeine can increase intestinal motility, people with IBS should avoid or minimize the use of caffeine-containing beverages such as coffee and caffeinated colas. Fructose or sorbitol (a sugar substitute) can induce diarrhea in some people. Since vitamin C supplements of one gram per day or more can cause diarrhea, patients with chronically loose stools should be advised to stop taking them.

Unnecessary delay in defecation should be avoided. When an urge is felt, leaving the stool in the colon may contribute to constipation because the longer

the contents remain, the more fluid may be absorbed. Use of certain laxatives can perpetuate constipation because the large intestine can become dependent on them. People with IBS should not take strong laxatives.

Increasing the fiber content of the diet or taking a stool softener such as methylcellulose or psyllium may help regulate bowel movements and reduce both constipation and diarrhea. Dietary fiber should be increased gradually to give the body time to adjust. Prescription drugs are available to slow the movement of food through the intestines or to relieve intestinal spasms.

Medication, a hot bath, or a hot water bottle applied to the abdomen may relieve an acute attack of abdominal pain. Antispasmodics can also prevent attacks. If a certain type of activity is known to trigger an attack, taking an antispasmodic drug beforehand may prevent trouble. If modifiable sources of stress can be discovered, resolving them may help. Regular exercise can also help to normalize bowel action. **NF**

BRIEFS

[continued from page 17]

tion exists between the health and environmental risks posed by plants genetically engineered through modern molecular techniques and those modified by conventional breeding practices. However, it recommended increased government monitoring to ensure that such plants would not cause allergies or harm the environment. The report—*Genetically Modified Pest-Protected Plants: Science and Regulation*—can be viewed or purchased at the National Academy Press Web site (www.nap.com).

EPHEDRA RULE DELAYED

In 1997, the FDA proposed to establish a dosing regimen, require warning statements, and affect other aspects of labeling for "dietary supplement" products containing ephedrine alkaloids. (Such products have been marketed for weight control, despite a lack of evidence that they are effective.) In July 1999, the U.S. General Accounting Office (GAO) concluded that the FDA's concern about

ephedra-containing products was justified, but that the agency had relied too heavily on adverse-event reports that had not been sufficiently investigated. On April 4, 2000, the FDA announced that it was withdrawing its proposed regulations about dosage and length of use and would not implement other provisions until it has completed further review as recommended by the GAO report (*Federal Register* 65:17474-17477, 2000). The seventy-nine-page GAO report—*Dietary Supplements: Uncertainties in Analyses Underlying FDA's Proposed Rule on Ephedrine Alkaloids* [GAO/HEHS/GGD-99-90]—is available free of charge from the General Accounting Office, P.O. Box 37050, Washington, DC 20013. It can also be viewed online by searching for "ephedra" in the GAO Archives at www.gao.gov/audit.htm.

IRRADIATED MEAT UPDATE

The U.S. Department of Food Safety and Inspection Service has issued a final rule on meat and poultry irradiation. The rule, published in February 1999, permits the use of ionizing radiation for

treating refrigerated or frozen uncooked meat, meat by-products, poultry, and certain other meat food products to reduce levels of foodborne pathogens and to extend shelf life (*Federal Register* 72149-72166, 1999). Use of the maximum permissible dose of irradiation could result in significant reduction or elimination of pathogenic microorganisms, including various species of *Salmonella*; *E. coli* O157:H7; *Clostridium perfringens*; *Staphylococcus aureus*; *Listeria monocytogenes*; *Campylobacter jejuni*; and the protozoan parasite *Toxoplasma gondii*. The packaging of retail products that have been irradiated must note this and bear the radura symbol.

ZINC LOZENGES AND COLDS

The Quigley Corporation and QVC (a cable TV "home shopping" network) have agreed to halt unsubstantiated claims that Quigley's Cold-Eezer or Cold-Eeze zinc lozenges can prevent colds, relieve allergy symptoms, reduce the risk of contracting pneumonia, and reduce the severity of cold symptoms in children. **NF**

Book Reviews

Analysis and Ratings

Our reviews not only offer analyses but also rate each book as either **RECOMMENDED**, **NOT RECOMMENDED**, or **RECOMMENDED WITH RESERVATIONS**, depending on the book's factual accuracy, reliance on scientific research methods, and usefulness to readers.

Risking Kids

Manfred Kroger, PhD

Dr Hoffer's ABC of Natural Nutrition for Children, by Abram Hoffer (Kingston, ON: Quarry Press, 1999), 318 pp., \$14.95 paperback. ISBN 1-55082-185-7.

As a parent of three children I have always enthusiastically shopped for all kinds information that might benefit me and my offspring. I soon realized there are three genres of nutrition information: sales literature, scientific literature, and self-promotional literature. Dr. Hoffer's book is of the third kind. Under the mantle of science and adorned with academic degrees, he attempts to induce in his readers a distrust of conventional medicine and nutrition (including your supermarket and the food industry in general) and to sway them to sign on to orthomolecular treatments. This long word, coined by Linus Pauling, deals with the treatment of medical conditions by administering "heroic" doses of various nutrients or supplements.

Kurt Butler's *A Consumer's Guide to "Alternative Medicine"* (Amherst, NY: Prometheus Books, 1992) states that Abram Hoffer is the Prophet of Niacin, just as Linus Pauling was the Prophet of Vitamin C. Niacin can cause all kinds of unpleasant symptoms, from itching to stomach bleeding to liver toxicity, and slow-release niacin products are even more toxic. Butler points out that it is ironic that in light of the claim that niacin can cure schizophrenia, there is evidence it may actually activate a psychosis. (Also see J. Freed, *Vitamin Politics* [Amherst, NY: Prometheus Books, 1984]).

What I see in this book is lots of self-

promotion. About one-third of it is case histories of successful treatments. The reader is told that some two thousand children have been relieved of learning and behavioral disorders and chronic illnesses by adjusting nutrient intake. This book details the author's beliefs and observations with children's nutritional therapy. There are chapters on diagnosis and treatment of physical and mental illnesses. Invariably, the recommendations are vitamin and mineral supplements, and not psychotherapy, surgery, or pharmaceutical intervention (down with Ritalin!). Many parents probably like to hear what Dr. Hoffer says. He is a great salesman.

But I read dubious assertions like "chemical flavor additives . . . over the long haul will be found to be toxic" or "modern high-tech foods . . . produce a state of chronic ill health" or "overly processed food is both dead and stale." His contempt for what you find in today's supermarkets is naively belligerent, but it does form the underpinning to his hypotheses and the diets he prescribes: "No food which contains added sugars can be part of the diet."

Parents are advised, before acting on this book's recommendations to seek two more opinions, preferably from experts who base their treatments on science.

NOT RECOMMENDED

Theory without a Clue

Manfred Kroger, PhD

Vitamin B-3 & Schizophrenia: Discovery, Recovery and Controversy, by Abram Hoffer (Kingston, ON: Quarry Press, 1998), 167 pp., \$14.95 paperback. ISBN 1-55082-079-6.

The author was born in 1917, underwent a medical education in Canada, and spent his career there practicing medicine and collecting patient observations in psychiatry. He has published numerous articles and ten books, invariably and tenaciously focusing on hypotheses and therapies that have never entered the mainstream of the healing profession; all along, his proposals have been highly controversial.

This book tells the story of Dr. Hof-

fer's fanatical, almost quixotic, attempts to see his work on vitamin B-3 and schizophrenia acknowledged, accepted, and put into practice by the "establishment." As it is well known, antipsychotic drugs have been proven effective in the control of mental illness and are now the main components of current therapy—not megavitamin/orthomolecular treatment, which has been relegated to what is today euphemistically called "alternative medicine" by those who believe quackery to be too harsh a term.

If the book has any merit at all, it is its reporting of the persistent efforts of one practitioner and one idea that never found justification. One can almost taste the author's bitterness oozing from the pages. Dr. Hoffer comes across as a self-promoting, energetic, embattled, yet caring person. But his "research" and findings do not convince the critical reader.

The book may serve as an example, a teaching tool, if you wish, showing a medical direction taken by a well-meaning professional who propelled himself to the outside of the playing field. Reading this book should remind the impartial observer of the ten Red Flags of Junk Science, which are a test for accuracy of information. It was proposed by the Food and Nutrition Science Alliance (FANSA). The book raises several of these flags:

- (1) Recommendations that promise a quick fix.
- (2) Dire warnings of danger from a single product or regimen.
- (3) Claims that sound too good to be true.
- (4) Simplistic conclusions drawn from a complex study.
- (5) Recommendations based on a single study.
- (6) Dramatic statements that are refuted by reputable scientific organizations.
- (7) Lists of "good" and "bad" foods.
- (8) Recommendations made to help sell a product.
- (9) Recommendations based on studies published without peer review.
- (10) Recommendations from studies that ignore the difference among individuals or groups. **NF**

NOT RECOMMENDED

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'FAT TRAPPER' GETS TRAPPED

Marketers of the Enforma System have agreed to settle FTC charges of deceptively advertising that the user could "eat what you want and never, ever, ever have to diet again." The system consists of "Fat Trapper," a chitosan-based product purported to prevent the absorption of dietary fat, and "Exercise in a Bottle," a pyruvate product that supposedly increases the body's capacity to burn fat. The system was promoted chiefly through televised 30-minute infomercials, featuring former baseball player Steve Garvey, as well as through the company's Web site. The settlement prohibits the marketers from making unsubstantiated claims that any product, service, or program: provides weight control without dieting or exercise; prevents fat absorption; increases metabolism; burns fat; or allows weight loss even if users eat high-fat foods. The company must also pay \$10 million to be used for refunds or distributed to the U.S. Treasury.

FIBER/COLON CANCER LINK DISPUTED

Evidence is mounting that no link exists between dietary fiber intake and colon cancer. Last year, researchers reported that a 16-year prospective study of 88,757 women found no significant relationship between fiber intake and the occurrence of precancerous polyps (colorectal adenomas) (*N Eng J Med* 340:169-176, 1999). This year, researchers reported on a clinical trial involving 1429 men and women ages 40 to 80 who had had one or more colorectal adenomas removed within three months before the study began. The participants entered a supervised program of dietary supplementation with either high amounts (13.5 g per day) or low amounts (2 g per day) of wheat bran fiber. Of the 1303 subjects who completed the study, 719 had been randomly assigned to the high-fiber group and 584 to the low-fiber group. By the time of the last follow-up colonoscopy, at least one adenoma had been identified in 338 subjects (47%) in the high-fiber

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Antioxidant RDIs Fill in Some of the Blanks

The latest on vitamins C and E, selenium, and antioxidants

by Stephen Barrett, MD

The third installment of the Dietary Reference Intakes (DRIs) has raised the Recommended Dietary Allowances (RDA) for vitamins C and E, lowered the RDA for selenium for adult males, and set no RDA for beta-carotene or other carotenoids. The report also concludes: (a) insufficient evidence exists to support claims that taking megadoses of these antioxidants can prevent chronic diseases; (b) most North American adults get enough vitamin C, vitamin E, and selenium from their normal diet; and (c) those who don't can get enough simply by improving their diet.

Dietary antioxidants are nutrients that help protect cells from a normal—but damaging—physiological process sometimes referred to as "oxidative stress." Such nutrients are found naturally in many foods, particularly fruits and vegetables. They are also added to some foods and are available as dietary supplements. For many years, researchers have sought to determine the extent to which these antioxidants may lower the risk of various chronic diseases. But many unanswered questions remain.

The DRIs are nutrient-based reference values for use in planning and as-

sessing diets and for other purposes. They are intended to replace the RDAs that the National Academy of Sciences has been publishing since 1941.

The DRIs are being determined by the Standing Committee on the Scientific Evaluation of Dietary Reference Intakes of the Food and Nutrition Board, Institute of Medicine (IOM), National Academy of Sciences, with help from Health Canada. (The IOM is a private, non-profit organization that provides health policy advice under a congressional charter granted to the National Academy of Sciences.)

The values are being released in a series of seven reports that discuss how each nutrient functions in the body, the best way to determine its requirement, which factors may affect how it works, how the nutrient may be related to developmental abnormalities or chronic disease, whether supplementation may be beneficial, and recommendations for research. The first report, published in 1997, covered nutrients related to bone health (calcium, phosphorus, magnesium, vitamin D, and fluoride). The second report (1999), covered the B vitamins and choline. The current report covers vitamins C and E, selenium, and carotenoids. The remaining

The Food and Nutrition Board has responded by changing its basic approach to setting nutrient reference values.

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four reports will cover macronutrients (e.g., proteins, fats, carbohydrates); (b) trace elements (e.g., iron, zinc); electrolytes and water; and other food components (e.g., fiber, phytoestrogens).

A New Approach

More than 20 years ago, the RDAs were defined as: "The levels of intake of essential nutrients that, on the basis of scientific knowledge, are judged by the Food and Nutrition Board to be adequate to meet the known nutrient needs of practically all healthy persons." Since that time, scientific knowledge about the roles of nutrients has expanded dramatically and many studies have examined relationships between diet and chronic disease. The Food and Nutrition Board has responded to these developments by changing its basic approach to setting nutrient reference values. While the RDAs were based on the amounts needed to protect against deficiency diseases, the DRIs reflect a shift in emphasis from preventing deficiency to decreasing the risk of chronic disease. Where adequate scientific data exist, the DRIs will include levels that can help prevent diseases that are diet related. Instead of a single category, the DRIs will encompass four:

- (1) *Recommended Dietary Allowance (RDA)*: The dietary intake that meets the nutrient need of nearly all (97-98%) of the healthy individuals in a particular age and gender group. The RDA should be used in guiding individuals to achieve adequate nutrient intake aimed at decreasing the risk of chronic disease. It is based on estimating an average requirement plus an increase to account for the variation within a particular group. The available evidence allowed the DRI committee to calculate RDAs for vitamin C, vitamin E, and selenium.
- (2) *Adequate Intake (AI)*: A recommended intake value based on observed or experimentally determined approximations of estimates of nutrient intake by a

group (or groups) of healthy people that are assumed to be adequate—used when an RDA cannot be determined.

- (3) *Tolerable Upper Intake Level (UL)*: The highest level of nutrient intake that is likely to pose no risk of adverse health effects for almost all individuals in the general population. As intake increases above the UL, the risk of adverse effect increases. The UL is not intended to be a recommended level of intake, and there is no established benefit for individuals to consume nutrients at levels above the RDA or AI. The term "tolerable upper intake level" was chosen to avoid implying a possible beneficial effect. For most nutrients, it refers to total intake from food, fortified food, and supplements.
- (4) *Estimated Average Requirement (EAR)*: A nutrient value that is estimated to meet the requirements of half the healthy individuals in a life-stage or gender group. Nutrition policymakers can use this figure to evaluate the adequacy of nutrient intakes for population groups.

The RDAs were developed when food was usually the only source of nutrients. The need for setting ULs arose because food fortification was increased and dietary supplements are being used by more people and in larger doses.

Interpretation

The DRIs are intended to apply to the healthy general population. RDAs and AIs are dietary intake values that should minimize the risk of developing a condition or sign associated with the nutrient in question that has a negative functional outcome. They refer to average daily intake over one or more weeks. They should not necessarily be expected to replenish individuals who are already malnourished and may not be adequate for disease states marked by increased requirements. Individuals known to have

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When Promoting Fruit Consumption Goes Sour

Misleading ads from the Florida Department of Citrus

For many years, the Florida Department of Citrus has produced ads that exaggerate the value of citrus products. The most recent example, appearing both on television and on its Web site, suggests that drinking a single glass of orange juice per day can greatly reduce the odds of having a stroke. According to a press release on its Web site:

A study published in the October 6 edition of the *Journal of the American Medical Association (JAMA)* found that drinking a glass of orange or grapefruit juice every day may lower the risk of stroke by 25 percent. . . .

[The researchers] found that increasing overall vegetable consumption reduced the risk of stroke by just four percent, but increased consumption of cruciferous vegetables (broccoli, Brussels sprouts, cauliflower, etc.) cut the risk by 32 percent. As for fruit, increasing overall consumption lowered stroke risk by 11 percent, but simply drinking a glass of orange juice every day reduced the risk of stroke by 25 percent.

This study, which was well designed, was supported by grants from the U.S. Office of Dietary Supplements and by the Florida Department of Citrus. The researchers examined data on 75,596 women, ages 34 to 59, who were followed for a 14-year period, and on 38,683 men, ages 40 to 75, who were followed for eight years. All of the participants were free of cardiovascular disease when the studies began. The study found that those with the highest intake of fruits and vegetables—particularly cruciferous vegetables, green leafy vegetables, and citrus fruit and juice—had the lowest incidence of strokes caused by obstruction of blood supply to the brain. The researchers noted, however, that “the analyses of individual fruit and vegetable items did not

show any single fruit or vegetable that was strikingly more protective than others” (*JAMA* 282:1233–1239, 1998). The Citrus Department’s “25 percent reduction” figure was derived from a table showing that the people reporting consumption of one serving per day of citrus juice had 20% fewer ischemic strokes than the 20% of people who consumed the fewest number of servings of fruits and vegetables. The study provides strong support for the prevailing scientific recommendation to consume at least five servings of fruits and vegetables a day. But it cannot predict the effect of adding citrus juice to your current diet—as the ad suggests.

In 1986, the department advertised that people who exercised couldn’t get enough potassium in their diet and that the potassium in grapefruit juice not only would provide enough, but would “balance sodium levels to regulate blood pressure and fight off fatigue.” When the National Advertising Division (NAD) of the Council of Better Business Bureaus investigated, a department spokesperson said that the potassium deficiency claims were based on an opinion survey of athletes conducted by a nutrition consultant, plus a study of the effects of intense conditioning in young men undergoing basic military training. In addition, a literature survey was provided as substantiation of the roles of sodium and potassium as nutritional factors in controlling blood pressure. NAD’s investigator replied that the data obtained from the studies could not support broadly stated claims and that the ad had overstated the benefits of drinking normal quantities of grapefruit juice. The spokesperson informed NAD that the claims had been discontinued and that a new campaign would promote grapefruit

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This month’s ratings are by Stephen Barrett, MD, board chairman of Quackwatch, Inc., which is working hard to improve the quality of health information on the Web. He now operates four Web sites: Quackwatch (www.quackwatch.com), Chirobase (www.chirobase.org), MLM Watch (www.mlmwatch.org), and NutriWatch (www.nutriwatch.org).

BEST

Full-text versions of *JAMA* and all ten of the AMA’s specialty journals are accessible online, free of charge, at jama.ama-assn.org/. All issues since December 1998 are retrievable.

The full text of *Nutrition Perspectives*, a quarterly newsletter published by the University of California Extension Division, is available at nutrition.ucdavis.edu/perspectives/

MEDLINEplus (www.nlm.nih.gov/medlineplus/), a pathway to the more than 11 million scientific articles in the National Library of Medicine’s database, has greatly improved its interface. The site also provides a medical encyclopedia and information on 9,000 prescription and over-the-counter drugs.

WORST

Nutricom (www.nutricom.cnhost.com) markets “software for the professional” that provides supplement recommendations in response to various tests. Its “Symptom Survey”—available online—asks about the frequency of 197 questions about symptoms, most of which have little or nothing to do with diet or nutrition. Other tests interpret (or misinterpret) the significance of various laboratory blood tests. The recommended “nutrition support protocols” are composed of products made by Standard Process Laboratories, a company with a long history of questionable marketing tactics. Nutricom claims that the products “facilitate healing and cell regeneration.”

Emethy® Medicinals (www.emethy.com), which sells “energy medicine products,” claims that (a) its combinations of herbs and other natural ingredients “transfer a wireless ‘Electrical Charge’ from the glass vial to the user within moments of use!” (b) Emethy “easily and safely enters the body via the nerve endings which in turn affect the entire electrical centers or pathways throughout the body”; (c) “when these electrical centers are balanced they produce a positive- harmonious flow to one’s entire system”; and (d) for people with memory loss, indigestion, arthritis, stress, hormonal imbalances, trauma, immune problems, pain, heart problems, addictions, low vitality, chronic fatigue, etc., Emethy allegedly helps to “balance mental, emotional and physical energies associated with these problems within just moments of use.”

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diseases that greatly increase requirements, or who have increased sensitivity to developing adverse effects associated with higher intakes, should be guided by qualified medical and nutrition personnel.

Nutrient intake less than the RDA does not necessarily mean that a given individual is not getting enough of that nutrient. Healthy individuals who meet the AI have a low risk of inadequate intake. However, an intake well below the RDA or AI would be a reason to assess the individual's nutritional status through laboratory testing or clinical examination. The IOM expects future publications to provide more detailed advice on how the DRIs should be interpreted and used.

In many cases, various levels of intake can have different benefits. One level may be related to the risk of deficiency, for example, while another level can influence the risk of chronic disease for that nutrient. For this reason, "nutrient adequacy" should be expressed in terms of "adequate for what?" For this reason, the DRIs are far more elaborate than the RDAs and cannot be expressed in a simple table of values.

Vitamin C

Vitamin C functions as a water-soluble antioxidant, which means that it neutralizes oxidizing agents before they can damage cells in the body. In addition, it is required for synthesis of collagen, carnitine, and neurotransmitters, such as serotonin, in humans. Scurvy is the severe deficiency disease caused by a lack of vitamin C in a person's diet. Because humans, guinea pigs, and a few other mammals cannot make their own vitamin C, they must meet their vitamin C needs through dietary sources.

The recommended intakes of vitamin C were increased to achieve maximum saturation in the body and antioxidant protection. The new RDAs are 75 mg per day for women, 90 mg daily for men, and an additional 35 mg per day for smokers. During pregnancy and lactation, the recommended amounts were 80 and 115, respectively, for women up to 18 years of age, and 85 and 120 after age 18. These

intakes are easily obtainable without taking supplements. The best sources include citrus fruits, strawberries, broccoli, tomatoes, potatoes, peppers, and leafy green vegetables. An eight-ounce glass of orange juice (from frozen concentrate) supplies about 100 mg of vitamin C. The other fruits and vegetables that are sources of vitamin C average about 40 mg of vitamin C per serving.

The report sets the upper intake level for vitamin C, from both food and supplements, at 2,000 mg per day for adults. Intakes above this amount can cause diarrhea in some people. Any intake above the RDA is likely to be excreted by the body unused. Although several studies have reported an inverse correlation between vitamin C intake and cardiovascular disease, some types of cancer, and cataracts, others have failed to do so. For this reason, the DRI committee concluded that there was not sufficient evidence to estimate a vitamin C requirement based on preventing any of these conditions.

With respect to the common cold, the report concluded that large doses of vitamin C (500–1,000 mg/day) have no significant effect on the incidence of the common cold, but may provide a moderate reduction in duration and severity—possibly because of an antihistaminic action.

Since vitamin C increases the absorption of iron, the committee recommended that further research be done to evaluate the extent to which vitamin C may increase the incidence of hemochromatosis (iron overload disease).

The DRI committee did not say as much, but based on current evidence, there is no good

reason to take more than the RDA of vitamin C. Also missing was a comment that although smokers who ingest RDA amounts of vitamin C might be slightly better off than those who ingest 35 mg less, this "benefit" is trivial when compared to the devastating effects of smoking.

Vitamin E

Chemists define vitamin E in eight naturally occurring forms found in food: four tocopherols (alpha-, beta-, gamma-, and delta-tocopherol) and four tocotrienols (alpha-, beta-, gamma-, and delta-tocotrienol). The only form of vitamin E that can be fully utilized by the body is alpha-tocopherol. Vitamin E's major function is as a chain-breaking antioxidant that is soluble in fatty substances. Unlike most nutrients, no specific role in a required metabolic function has been found for it.

Recommended daily intake levels were increased for this nutrient; both

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women and men should consume 15 mg from food. This is equivalent to 22 international units (IU) of natural-source vitamin E or 33 IU of the synthetic form.

The upper level, achievable only with supplements, is 1,000 mg of alpha-tocopherol per day for adults. This amount is equivalent to roughly 1,500 IU of d-alpha-tocopherol, sometimes labeled as natural-source vitamin E, or 1,100 IU of dl-alpha-tocopherol, a synthetic version of vitamin E. Consuming greater amounts increases the risk of bleeding, since high levels of vitamin E act as an anticoagulant.

The main dietary sources of vitamin E are edible vegetable oils. At least half of the tocopherol content of wheat germ oil, sunflower oil, cottonseed oil, safflower oil, canola oil, and olive oil is in the form of alpha-tocopherol. Soybean and corn oils contain about 10 times as much gamma-tocopherol as alpha-tocopherol. Other foods providing vitamin E include unprocessed cereal grains, nuts, fruits, vegetables, and meats (especially the fatty parts).

Overt vitamin E deficiency is rare in the United States and Canada. It is seen only in individuals unable to absorb the vitamin because of malabsorption of fat, or in people with rare, inherited abnormalities that prevent the maintenance of normal blood concentrations. Thus, current dietary patterns appear to provide enough vitamin E to prevent deficiency symptoms.

Much speculation exists about whether large doses of vitamin E can prevent coronary heart disease. The DRI committee stated that only one of the four double-blind, placebo-controlled trials that have been reported had positive results. For this reason, it considers it premature to recommend high intakes of vitamin E for the general population. The committee also felt that it is unknown whether raising vitamin E intake will benefit people who smoke or are routinely exposed to cigarette smoke.


Selenium

Selenium functions largely through selenoproteins, several of which are enzymes that help prevent cell damage by oxidants from the environment or from normal metabolic processes. The RDA is set to maximize the activity of these enzymes. Both women

and men should get 55 µg per day of selenium. Food sources include seafood, liver, meat, and grains. The upper limit for selenium is set at 400 µg per day, including amounts consumed from both foods and supplements. Greater amounts can cause selenosis, a toxic reaction marked by hair loss and nail sloughing.

Selenium intake varies according to geographic location, but there is no indication of average intakes below the RDA in the United States and Canada. Dietary intakes depend on the selenium content of the soil where plants are grown or where animals are raised. Food animals in the United States and Canada usually have controlled diets to which selenium is added when the local soil is lacking. Thus, the amounts found in muscle meats, milk, and eggs are more consistent than those amounts found in plant foods. While the food distribution systems in the United States and Canada ensure a mix of plant and animal foods from the broad range of soil conditions, the selenium content of local foods (e.g., from farmers' markets) may vary considerably from the average values given in food composition databases. However, the variation in selenium content of food sources does not appear to exceed that for many other nutrients; and the fact that people obtain their food from many sources helps ensure an adequate supply.

Although two studies have found that the incidence of certain cancers was lower among people with above-RDA intakes of selenium, this evidence should be considered preliminary without confirmation by a large clinical trial.


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Beta-Carotene and Other Carotenoids

Carotenoids consist of more than 600 compounds that are found in some species of living organisms, including animals, plants, and microorganisms. The most prevalent carotenoids in North American diets include beta-carotene, alpha-carotene, lycopene, lutein, zeaxanthin, and beta-cryptoxanthin. Beta-carotene, alpha-carotene, and beta-cryptoxanthin, which are converted to vitamin A, are referred to as provitamin A carotenoids. Beta-carotene is abundant in carrots and is also found in cantaloupe, broccoli, spinach, and collard greens. The other five are found in carrots, orange juice, tomatoes, spinach, and collard greens.

In laboratory tests, carotenoids act as antioxidants, but the results have not been consistently duplicated in humans. In addition, data on the adverse effects of carotenoid overconsumption are contradictory. For these reasons, the report does not recommend a daily intake level or an upper intake level for carotenoid consumption.

Many epidemiologic studies suggest that higher blood concentrations of beta-carotene and other carotenoids obtained from foods are associated with lower risk of macular degeneration of the eye, cataracts, some cancers, and coronary heart disease. Although consistent, this evidence is not enough to establish a requirement for beta-carotene or total carotenoid intake because the observed effects may stem from other substances

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found in fruits and vegetables or may be related to other behavior correlated with fruit and vegetable consumption. Three major double-blind, randomized clinical trials using high-dose beta-carotene supplements have found no evidence that beta-carotene supplements protect against any cancer; and two of these reported a higher incidence of lung cancer. Thus the DRI committee supports existing recommendations for increased fruit and vegetable consumption and advises against

beta-carotene supplementation except to help prevent or control vitamin A deficiency in populations at risk.

For Further Information

The full report—*Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids*—costs \$45 for the pre-publication version, \$59.95 for the final hardcover version, and \$39.95 for the final softcover version. It can be pur-

chased by calling (800) 624-6242; writing to the National Academy Press, 201 Constitution Ave. NW, Washington, DC 20418; or ordered at a 20% discount online at www.nap.edu. The full text can also be read online, although the process is cumbersome. **NF**

Dr. Barrett, a retired psychiatrist who resides in Allentown, Pennsylvania, is board chairman of Quackwatch, Inc., and a board member of the National Council Against Health Fraud.

BRIEFS

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group and 299 subjects (51%) in the low-fiber group. The authors concluded that "as used in this study, a dietary supplement of wheat-bran fiber does not protect against recurrent colorectal adenomas (*N Eng J Med* 342:1156-1162, 2000).

TAX STATUS OF WEIGHT-CONTROL PROGRAMS

In 1999, the American Obesity Association and ten other groups petitioned the Internal Revenue Service to permit the cost of weight-loss treatment (surgery, drug therapy, behavioral counseling, and weight-control programs) to be tax-deductible. The agency responded that such a ruling would require evidence either that obesity itself is a disease or that weight loss by an obese person prevents the onset of disease. The association submitted substantiating information to the IRS on March 17, 2000. IRS Revenue Ruling 99-28 allows taxpayers a medical deduction and approves the use of medical savings accounts for smoking cessation programs and medicines. Weight-control groups are also mobilizing their members to ask Congress to give weight-control programs the same tax status.

NEW WEB SITE FOR CONTACTING COMPANIES

PlanetFeedback has launched a Web site (www.planetfeedback.com) for channeling consumer complaints, praise, and suggestions and for promoting responses from the companies to

which they are directed. The site provides templates to provide an efficient way to generate messages that are forwarded to the appropriate company officials. To increase impact, letters can be copied to government agencies, consumer associations, friends, and family. The site also provides a utility for organizing and monitoring their communications to companies, an online community, shared information on companies and a "BuyersBuzz" news service for consumer-specific reports information.

PROPAGANDA TACTIC

Daniel E. Shaughnessey, vice president for governmental and public affairs for the Council for Responsible Nutrition, has urged supplement-industry spokespeople to vigorously deny allegations that supplements are unsafe and that the industry is "largely unregulated." In the May 2000 issue of *Whole Foods*, a trade magazine, he advises: "Always tell reporters that the FDA sets the format for supplemental label content, requires approval for nutrient content claims, and can declare products misbranded or adulterated." Although these statements are literally true, the FDA cannot adequately protect consumers because: (a) its enforcement power was greatly weakened by the Dietary Supplement Health and Education Act of 1994; (b) it lacks the resources to test whether products contain what their labels say; and (c) it lacks the resources to attack the enormous number of false and misleading claims made for supplement products.

PRODUCT LABELS INACCURATE

Researchers at the University of Arkansas who tested 20 supplement

products containing ephedra (*ma huang*) found many differences in alkaloid content from product to product and between two lots of the same product. Half the products exhibited discrepancies of 20% or more between the label claim and the actual content, and one product contained no ephedra alkaloids (*Am J Health Syst Pharm* 57:963-969, 2000). Ephedra products are marketed as "energy boosters" and/or "thermogenic" diet aids, even though no published clinical trials substantiate that they are safe or effective for these purposes. The researchers also noted that hundreds of such products are marketed and that their number exceeds that of conventional prescription and nonprescription ephedra products (which are FDA-approved as decongestants). The April issue of *D* magazine (Dallas, Texas) reported that—at its request—a leading laboratory had tested five brands of DHEA, ginger, ginkgo biloba, ginseng, melatonin, saw palmetto, St. John's wort, and milk thistle. The ginger and melatonin products contained the stated amounts, but 10 of the other 30 products did not, and a few products had capsules that easily fell apart.

PIZZA WARS

In line with a jury verdict, a federal court judge has ruled that Papa John's Pizza's claim to have "Better Ingredients. Better Pizza" was false and misleading. The slogan had been the centerpiece of the company's \$300-million marketing campaign. The ruling bars Papa John's from claiming in future promotions that its pizzas are superior unless the claim can be scientifically substantiated. The judge also concluded that claims of superior

sauce and superior dough and other attacks on Pizza Hut's quality were false and deceptive. In addition to issuing an injunction, the judge assessed damages of \$467,619.75. Papa John is appealing the verdict and has filed a suit questioning Pizza Hut's slogan: "Best Pizza Under One Roof" and contending that Pizza Hut unlawfully appropriated images of the Papa John's founder in its own attack ads.

'VITAMIN O' SNUFFED

Rose Creek Health Products, Inc., The Staff of Life, Inc., and their president Donald L. Smyth have agreed to pay \$375,000 in redress to settle Federal Trade Commission charges that they made false and unsubstantiated health claims in advertising a purported nutritional supplement called "Vitamin O." The ads claimed that "Vitamin O" could treat or prevent serious diseases such as cancer, heart disease, and lung disease by enriching the bloodstream with supplemental oxygen. As part

of the settlement, the defendants are prohibited from making unsubstantiated claims that that "Vitamin O" or any food, drug, or dietary supplement they market has any health benefit.

ADS FOR CHILDREN'S SUPPLEMENTS

The Federal Trade Commission has warned against misleading claims in ads for supplement products intended for children. Regarding claims that the product is a "scientific breakthrough," "miraculous cure," "exclusive product," "secret ingredient," or "ancient remedy," an agency official suggested that parents ask themselves, "If a product is so amazing, why would I be reading about it for the first time in an ad?"

HERBAL CIGARETTES NOT SAFER

Santa Fe Natural Tobacco Company, Inc., and Alternative Cigarettes, Inc., based in Buffalo, New York, have agreed

to settle FTC charges that ads for their cigarettes were deceptive. Santa Fe markets Natural American Spirit tobacco cigarettes and has also sold tobacco-free herbal cigarettes. Alternative Cigarettes markets Pure and Gold tobacco cigarettes, as well as Herbal Gold and Magic herbal cigarettes. Both companies alleged that their tobacco-containing cigarettes were safer than other cigarettes because they contained no additives. Alternative Cigarettes implied that smoking its herbal cigarettes did not pose the health risks associated with tobacco cigarettes. The companies have agreed to disclose prominently in future ads that make a "no additives" claim: "No additives in our tobacco does *not* mean a safer cigarette." Both companies have also agreed to disclose prominently on packages and in ads for herbal cigarettes: "Herbal cigarettes are dangerous to your health. They produce tar and carbon monoxide." **NF**

[continued from page 27]

as a significant source of potassium when part of a healthy regimen, including proper diet and exercise. However, a subsequent ad stated that grapefruit juice was "high in potassium with no sodium: a combination that, along with proper diet and exercise, can help control blood pressure." This was still misleading because drinking normal quantities of grapefruit juice is unlikely to lower blood pressure.

In 1993, the department distributed a

booklet containing several pages of misleading information about vitamin C. Among other things, the booklet suggested that vitamin C "may offer remarkable protection against heart disease" and "can help prevent tuberculosis." (The latter claim was attributed to "Dr. Irwin Stone," but did not indicate that Stone's doctoral credential was a Ph.D. from nonaccredited Donsbach University.) The booklet also claimed that vitamin C must be ingested daily because it cannot be stored in the body. This claim was false,

because the body normally stores about a month's supply.

FDA regulations state that health claims on food labels must be "complete, truthful, and not misleading." The Federal Trade Commission has a similar policy for advertising. The Florida Citrus Commission's claims about orange and grapefruit juice have certainly not met this standard. But the remarkable thing about them is not their content but the fact the Florida Department of Citrus is a government agency! **NF**

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Labeling Trans Fatty Acids

The FDA tries to sort it all out

On November 17, 1999, the FDA published a proposed rule that would require the amount of trans fatty acids in food, including dietary supplements, to be included in the amount and percentage Daily Value declared in the nutritional labeling of saturated fats. When trans fatty acids are present, the declaration of saturated fatty acids would be required to contain a symbol that refers to a footnote stating the number of grams of trans fatty acids per serving. Trans fatty acids would be subject to the same limits as saturated fats for the purposes of nutrient content claims, health claims, or disclosure and disqualifying levels. The FDA also proposed to define the nutrient content claim for "trans fat free."

The Basics

Dietary fats are composed of fatty acids and glycerol. Dietary fatty acids consist of carbon chains of various lengths and a terminal carboxyl group. The carbon atoms in these chains are connected by single or double bonds. Hydrogen atoms are attached to the noncarboxyl carbons. A saturated fatty acid has no double bonds between the carbon atoms in the chain. An unsaturated fatty acid may contain one or more double bonds between carbon atoms and, therefore, two fewer hydrogen atoms per double bond. A fatty acid with a single double bond is called a monounsaturated fatty acid. A fatty acid with two or more double bonds is called a polyunsaturated fatty acid. Most naturally occurring dietary unsaturated fatty acids are in a "cis" configuration (i.e., the two hydrogen bonds attached to two carbons are on the same side of the molecule at the double bond which gives the molecule a "bend" at the site of the double bond). These bent molecules cannot pack easily together, so fats of these molecules are more often in a liquid form. In a trans configuration, the hydrogen atoms attached to the carbon atoms at a double bond are not on the same side of the double bond. ("Trans"

means "across" in Latin.) This arrangement stabilizes the molecule in a relatively straight contour. The FDA is proposing to define trans fatty acids as "unsaturated fatty acids that contain one or more . . . double bonds in a trans configuration."

Trans fatty acids are primarily the result of hydrogenation, a process by which hydrogen atoms are added to unsaturated sites on the carbon chains, thereby reducing the number of double bonds. In partial hydrogenation, some double bonds remain but may be moved in their positions on the carbon chain and changed from a cis to trans configuration. Hydrogenation increases the melting point, shelf life, and flavor stability of unsaturated fatty acids. Through hydrogenation, oils (fats in liquid form), such as soybean, safflower, and cottonseed, which are rich in unsaturated fatty acids, are converted to semisolids and solids that are useful in margarines and vegetable shortenings. Hydrogenation also occurs in the digestive tract of ruminant animals, but the resultant trans fatty acids comprise only a small percentage of the total fatty acids of such products.

The partial hydrogenation process was developed in the 1930s and has been in widespread commercial use since the 1940s. Dietary fats containing hydrogenated fatty acids, such as those used in margarine, have gradually greatly displaced animal fats, such as butter and lard, in the average American diet. About two-thirds of the dietary fat consumed in the 1940s was of animal origin. The balance was reversed by the 1960s, with two-thirds coming from fats of vegetable origin. This trend resulted in a decrease in the intake of saturated fat and an increase in the intake of polyunsaturated and trans fatty acids.

The American Heart Association has recommended that naturally occurring unhydrogenated oil should be used when possible. Attempts should be made to substitute unhydrogenated oil for hydrogenated or saturated fat in processed foods. Softer margarines should be substituted for harder margarines and cooking fats.

ASCN/AIN Labeling Recommendations

In 1996, a task force of the American Society for Clinical Nutrition/American Institute of Nutrition (ASCN/AIN) recommended that:

- Trans fatty acids should be added to or included with saturated fatty acids on labels.
- Trans fatty acids should be a separate class on labels.
- There should be a threshold proportion of trans fatty acids for health claims. This proportion (g/portion), if exceeded, will preclude use of a low-fat, low-saturated fat descriptor or health claim on the label.
- Fatty acids should be classified as cholesterol-raising and cholesterol-lowering. The task force indicated that its proposal ignored differences in individual responsiveness to each fatty acid as well as their possible effects on risk factors in chronic diseases other than cardiovascular ones. The FDA's proposed rule noted that more recent studies have strengthened the link between trans fatty acids and coronary heart disease (CHD).

FDA Analysis

The FDA has concluded that consuming trans fatty acids (rather than cis-monounsaturated or polyunsaturated fat) can raise the level of low-density lipoproteins (LDL), which is a major risk factor for CHD. Although interventional studies are too short in duration to provide direct evidence of the incidence of CHD, they provide evidence for an effect of dietary trans fatty acids on LDL. Epidemiologic studies have consistently found associations between estimated dietary intake of trans fatty acids and the incidence of CHD. The available studies do not provide a definitive answer to the question of whether trans fatty acids have an effect on LDL and CHD risk equivalent to saturated fats on a gram-for-gram basis. They also do not provide information about mechanisms responsible for the observed increases in LDL. However, the repeated and consistent findings under a variety of conditions are strong evidence of a relationship between consumption of higher levels of trans fatty acids and increased risk of CHD. **NF**