THE IMPORTANCE OF THE FEDERAL NUTRITION PROGRAMS FOR INFANTS AND TODDLERS

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Poverty, food insecurity, and poor nutrition have serious detrimental impacts on the health, development, and well-being of infants and young children in the short and long terms.[1] One essential strategy to address these issues is connecting vulnerable young children and their families to the federal nutrition programs, specifically the Supplemental Nutrition Assistance Program (SNAP, formerly called "food stamps"), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Child and Adult Care Food Program (CACFP). These profoundly important programs support healthy growth and development during the early childhood period and beyond. The programs are especially important to the 19.9 percent of U.S. children 0 to 3 years of age who live in poverty.[2] Infants and toddlers living in poverty — particularly Black and Hispanic children who experience disproportionately higher rates of poverty than White children — face multiple risks and challenges during the critical early childhood window.

This paper will provide a brief overview of the importance of early nutrition; briefly summarize the harmful impacts of food insecurity on infants and young children; and highlight research demonstrating the effective role of the federal nutrition programs during early childhood in improving food and economic security, dietary intake, health, and development.

Early Nutrition is Critical for a Healthy Start in Life

It is widely accepted that the early childhood period sets the foundation for physical, social, and emotional health, as well as establishes dietary patterns and food preferences that can last a lifetime. This period also is a time of rapid brain growth with more than 1 million new neural connections being formed every second.[3] These neural connections are stimulated and strengthened when infants and toddlers have **nurturing relationships, early learning experiences, and good nutrition.**[4]

While good nutrition supports healthy growth and development, poor nutrition in early childhood can negatively impact child health and development in the short and long terms and hinder adult achievement and productivity.[5, 6] And unfortunately, too many infants and toddlers consume diets that fall short of key nutrients.[7] This includes iron, for example, a micronutrient critical for brain development. Inadequate dietary intake during early childhood can lead to iron deficiency anemia, which is associated with socioemotional difficulties, poor motor development, and cognitive impairments that can be long-lasting.[8] Nutrient inadequacies and deficiencies are a concern for this population, and so too is the overconsumption of calories, sugar, salt, and saturated fat, which can contribute to rapid weight gain and the establishment of preferences for foods of poor nutritional quality.[9, 10, 11, 12] In short, poor nutrition in early childhood — including the prenatal period — can have substantial, long-lasting impacts, especially for the developing brain.

Food Insecurity has Harmful Impacts on the Health and Well-Being of Young Children

Adequate calories and nutrients are required to support healthy growth and development, but food insecurity can compromise this. Food insecurity is a term defined by the U.S. Department of Agriculture (USDA) that indicates that the availability of nutritionally adequate and safe food, or the ability to acquire such food, is limited or uncertain for a household.

Food insecurity is a significant public health concern, especially among young children, given the high prevalence and negative consequences for nutrition, health, and well-being. USDA estimates that 1 in 6 U.S. households with children under 6 years of age experienced food insecurity in 2017.[13] In about half of these households, one child or more was food insecure.* Research shows that certain households with children face higher rates of food insecurity, including those headed by a single female, Black or Hispanic, and households with incomes under 185 percent of the federal poverty line.[14]

While food insecurity has direct and indirect consequences across the lifespan, food insecurity — and even marginal food security (a less severe level of food insecurity)[15, 16] — is especially detrimental to the health, development, and well-being of children.[17, 18, 19, 20] For instance, young children in food-insecure households are more likely to have poorer overall health, iron deficiency anemia, and developmental problems, and to have been hospitalized, compared to young children in food-secure households.[21, 22] These and other consequences have short-term implications, but food insecurity also can put young children at a disadvantage later in childhood, and beyond, in terms of unfavorable health and education outcomes. For example, living in a food-insecure household at 2 years of age is a strong predictor of low academic scores and high problem behaviors at kindergarten entry.[23]

Research also links food insecurity in households with young children to unfavorable outcomes related to family health and well-being, including increased maternal depressive symptoms and parental arguing.[24] These findings are not surprising given the incredible stress and pressure facing low-income parents who struggle to feed their families.[25] Furthermore, because of limited financial resources, families who are food insecure may use coping strategies to stretch budgets that are harmful for health and nutrition, such as diluting or rationing infant formula[26] or making trade-offs between food and other basic necessities (e.g., housing, medicine).[27]

The Federal Nutrition Programs Support Strong Physical Health and Nutrition During Early Childhood

There is considerable evidence about the effective role that participation in the federal nutrition programs plays in reducing food insecurity and poverty, and in providing the nutrients children need for growth, development, and overall health. This is especially true for SNAP, WIC, and CACFP, which are critical nutrition and health supports for vulnerable infants and young children.

*USDA measures food insecurity at the household level. In some food-insecure households with children, the children are themselves food insecure. In other food-insecure households with children, only the adults are food insecure, yet, even then, harm can trickle down to the children.

Supplemental Nutrition Assistance Program (SNAP)

SNAP serves as the first line of the nation's public policy defense against hunger and undernutrition, as well as an effective anti-poverty initiative. Over 39 million Americans participate in SNAP in a given month,[28] and researchers estimate that half of all of American children will receive SNAP at some point during childhood.[29] The program has a substantial reach and also touches a large proportion of young children and their families. According to an analysis by the Food Research & Action Center, 29.8 percent of children 0 to 3 years of age lived in a household that participated in SNAP at some point over the period of 2012 to 2016.[30]

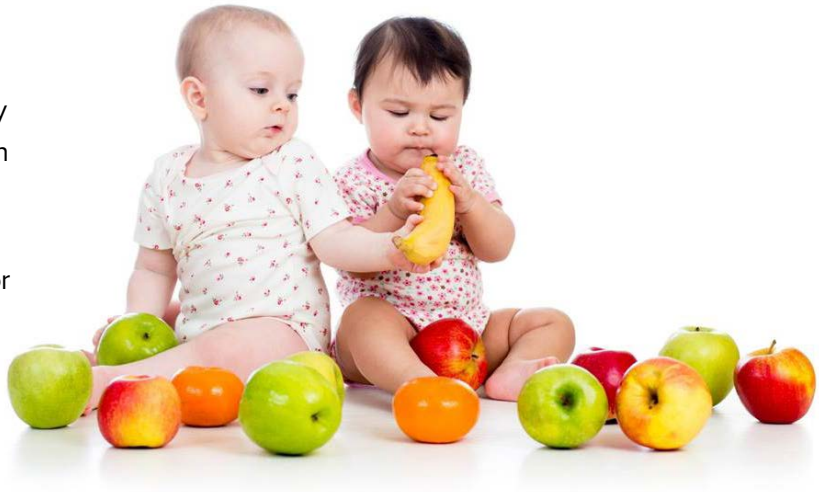
The monthly benefits provided by SNAP enhance the food-purchasing power of eligible low-income families. In addition, research demonstrates the effectiveness of SNAP in alleviating poverty, reducing food insecurity, and improving the health, nutrition, and well-being of children, adults, and seniors.* The selected studies below illustrate some of the short- and long-term impacts of program participation during childhood generally and in the early childhood period.

- Nationally, 3.4 million people — including more than 1.4 million children — were lifted above the **poverty** line by SNAP in 2017 under the alternative poverty computation that counts government benefits as income, based on Census Bureau data on poverty and income in the U.S.[31] However, these estimates understate SNAP's anti-poverty effects due to the underreporting of program participation in Census surveys. According to leading economists and poverty scholars, "SNAP is our nation's most effective anti-poverty program for the nonelderly when adjusted for underreporting, one that is especially good at reducing extreme poverty — by over 50 percent — and also especially effective for poor families with children."[32]

- Children in households that participated in SNAP for six months are approximately one-third less likely to be **food insecure** than children in households recently approved for SNAP but not yet receiving it, based on a national sample of SNAP households with children.[33]

- Access to SNAP *in utero* and in early childhood (through the age of 5) reduces the incidence of **metabolic syndrome** (obesity, hypertension, diabetes, heart disease, heart attack) in adulthood, reduces the risk of **stunting**, and, for women, increases reports of being in **good health** in adulthood.[34] Program access during these critical time periods in early life also increases economic self-sufficiency later in life for women in terms of increased **educational attainment, earnings, and income**, and reduces poverty and public assistance program participation in adulthood.

- Children under the age of 4 in food-insecure households who receive SNAP benefits are less likely to be **overweight, at developmental risk, and in fair or poor health**, compared to children in food-insecure households who are not receiving SNAP benefits.[35, 36] In addition, food-insecure children 3 years of age or younger who participate in SNAP have fewer **hospitalizations** than comparable nonparticipants.[37]



* For more information on the benefits of SNAP, see FRAC's *SNAP and Public Health: The Role of the Supplemental Nutrition Assistance Program in Improving the Health and Well-Being of Americans* at www.frac.org.

- Mothers of children under 4 years of age in food-insecure households receiving SNAP benefits are less likely to experience **maternal depressive symptoms** and less likely to be in fair or poor health, compared to mothers in food-insecure households who are not receiving SNAP benefits.[38, 39]

- Conversely, a loss or reduction in SNAP benefits has detrimental health impacts on children and families. Young children under the age of 4 in families whose SNAP benefits were recently lost or reduced due to an increase in income are more likely to be in **fair or poor health** and at risk for **developmental delays**, compared to young children in families who consistently received SNAP benefits.[40] Families with SNAP benefit loss or reductions also are more likely to **forgo medical care** for the child or other family members due to cost, or to make **health care trade-offs**.[41, 42]

- Families receiving housing subsidies, SNAP, and WIC benefits are 72 percent more likely to be **housing secure** (i.e., defined as living without overcrowding or frequent moves within the last year), compared to those families receiving housing subsidies alone, based on a study of low-income caregivers of children younger than 3 years old.[43]

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)

WIC provides low-income pregnant women, breastfeeding women, non-breastfeeding postpartum mothers, infants, and children up to the age of 5 with nutritious foods, nutrition education and counseling, and referrals to health care and social services. In addition to being income-eligible, applicants must be at nutritional risk (e.g., underweight, overweight, anemic, poor dietary intake) as determined through a nutrition assessment conducted by a health professional. In fiscal year 2017, WIC provided services to approximately 1.7 million women, 1.8 million infants, and 3.8 million children in the average month.[44] In the latest year (2015) for which USDA has published a WIC coverage rate, WIC reached 76.9 percent of eligible infants, but just 44.4 percent of eligible children ages 1 to 4 years old.[45]

A large body of research spanning decades shows that WIC is a profoundly important program with well-documented benefits to the health, development, and well-being of young children and their families, as demonstrated in the selection of studies below.*

- WIC reduces the prevalence of **household food insecurity** by at least 20 percent, based on a national sample of children under the age of 5 who lived in households that were income-eligible for WIC.[46]

- Prenatal WIC participation is associated with improved **birth outcomes**, including lower infant mortality rates (especially for African-Americans)[47] and a lower risk of preterm birth, perinatal death, low birth weight, and neonatal intensive care unit admission.[48, 49]

- Multiple studies link the revised WIC food packages with improvements in **overall dietary quality, healthful food purchases,** and the **consumption of fruits, vegetables, whole-grains, and lower-fat milk**.[50, 51] Research also finds improvements in **infant-feeding practices** in terms of the appropriate introduction of solid foods, as well as increases in **breastfeeding initiation**.

- **Overweight and obesity** rates declined modestly among young children 1 to 4 years of age enrolled in New York state's WIC program within three years of introducing the revised WIC food packages.[52]

*For more information on the benefits of WIC, see FRAC's *Child Nutrition Programs and Public Health: The Role of the Federal Child Nutrition Programs in Improving Health and Well-Being* and FRAC's *WIC is a Critical Economic, Nutrition, and Health Support for Children and Families* at www.frac.org.

Revised WIC Food Packages

Specific WIC food packages are prescribed for different groups of participants (e.g., pregnant women, infants, young children) to supplement their diets based on their nutritional needs. The WIC food packages were revised in 2007 to align the authorized foods with the latest nutrition science and guidance. All WIC state agencies were required to implement the new food packages by October 2009.

Overall, the revised WIC food packages improve the health and nutritional quality of the foods in the program, increase participants' choices, and expand cultural food options. More specifically, the revised packages retain the basic WIC foods, including milk, cheese, eggs, fruit juice, iron-fortified cereal, beans, peanut butter, infant formula, and (for breastfeeding women) tuna. However, the amount of milk, cheese, eggs, fruit juice, and, in some cases, infant formula was reduced in the new packages. In addition, the new packages move to low-fat or non-fat milk; offer fruits, vegetables, and whole-grain bread (with the option to substitute whole-grain tortillas, pasta, rice, or other grains); and allow the substitution of soymilk, tofu, and (in 2015) yogurt for milk and cheese.

- Young children participating in WIC, SNAP, or both programs have lower rates of **failure to thrive, anemia, and nutritional deficiency**, and lower risk of **abuse and neglect**, when compared to low-income nonparticipants.[53]

- Even in the face of family stressors, such as household food insecurity and maternal depressive symptoms, children younger than 36 months who receive WIC, compared to those who do not, are less likely to be in **fair or poor health,** and more likely to meet **well-child criteria**.[54] (For this particular study, children met "well-child" criteria if they were in good or excellent health per parent report, were developing normally, were not overweight or underweight, and had not been hospitalized.)

- Prenatal and early childhood participation in WIC is associated with stronger cognitive development at age 2, and better performance on reading assessments in elementary school, leading researchers to conclude that "these findings suggest that WIC meaningfully contributes to children's educational prospects."[55]

Child and Adult Care Food Program (CACFP)

CACFP provides reimbursement to Head Start programs, family child care, child care centers, afterschool programs, homeless shelters, domestic violence shelters, and senior day care centers for nutritious meals and snacks served to children and seniors. Young children attending CACFP-participating family child homes, child care centers, or Head Start programs can receive up to two meals and a snack per day that meet USDA nutrition standards. In fiscal year 2017, CACFP served 4.4 million children, 2 billion healthy meals and snacks, and distributed over $3 billion in reimbursements to child care providers.[56]

While much of the research on CACFP focuses on program implementation, there are several studies — mostly focused on preschoolers — that evaluate the impact of participation on household food insecurity, the child care food environment, and child nutrition and health, as highlighted below.* (More research is needed on CACFP's impacts for infants and toddlers.) In addition, multiple studies conclude that CACFP plays an important role in improving the quality of child care programs and making them more affordable for low-income families.[57, 58]

- Attending a CACFP-participating child care program is associated with a modest reduction in the risk of **household food insecurity**, according to a study using national data on 4-year-olds.[59]

*For more information on the benefits of CACFP, see FRAC's *Child Nutrition Programs and Public Health: The Role of the Federal Child Nutrition Programs in Improving Health and Well-Being* at www.frac.org.

- Child care sites participating in CACFP, especially Head Start centers, serve more **fruits, vegetables, and low-fat or skim milk**, and fewer **sweetened beverages, sweets, and snack foods** than nonparticipating child care sites.[60, 61]

- Participating in CACFP is associated with greater **fruit, vegetable, and milk consumption** among low-income preschoolers.[62, 63] Children in CACFP centers also consume less **saturated fat and total fat**, likely a result of the provision of low-fat milk by CACFP-participating centers.[64]

- CACFP-participating centers report more **supportive nutrition practices** than nonparticipating centers.[65, 66] (Supportive nutrition practices include offering whole grains daily, teaching about the food groups, and serving foods family style.) For example, 53 percent of CACFP sites report that staff always eat the same foods that the children are offered, compared to 35 percent of non-CACFP sites.

- Child care centers participating in CACFP also have higher-quality **nutrition and physical activity environments** than nonparticipating centers.[67]

- Low-income preschoolers attending CACFP-participating child care centers are slightly less likely to be **obese** than similar children attending nonparticipating centers.[68] Also, preschool children with an unhealthy weight status (i.e., obese, overweight, or underweight) who participate in Head Start have healthier body mass indexes by kindergarten than nonparticipants — children are less obese, less overweight, and less underweight.[69] This may be due, in part, to the program's adherence to CACFP nutrition coverage and guidelines for meals and snacks.

- Toddlers (between 13 months and 3 years old) in subsidized child care whose meals are supplied by their child care provider — and, therefore, highly likely to be participating in CACFP — are less likely to be in **fair or poor health**, less likely to be **hospitalized**, and more likely to be at a **healthy weight** than similar children whose meals are supplied from home.[70]

Conclusion

Young children in this country are experiencing high levels of poverty, food insecurity, and inadequate dietary intake, which can contribute to poor health and development in the short and long terms. Research shows that SNAP, WIC, and CACFP can alleviate these problems during early childhood, and improve overall health and well-being. Strengthening and increasing access to and participation in these critical programs would further their role in supporting the physical health, development, and nutrition of our nation's children.

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