Making Sense of Australia's Alcohol Guidelines

AN NCETA WORKFORCE DEVELOPMENT TOOL

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The question of how much alcohol should be consumed is an important one, but it is one that is harder to answer than it might seem at first glance. This document attempts to provide clear, simple information to health and human services workers about the new alcohol guidelines released by the National Health and Medical Research Council (NHMRC) in February 2009. It addresses some common questions about the guidelines and suggests ways that they might be used in day-to-day practice. It is also important for the new guidelines to be seen in the context of the current push toward the development of a new low risk drinking culture in Australia.

The New Alcohol Guidelines

The new alcohol guidelines released by NHMRC in February 2009 comprise the following 4 guidelines.

Guideline 1. Reducing the risk of alcohol-related harm over a lifetime

For healthy men and women, drinking no more than **2 standard drinks on any day** reduces the lifetime risk of harm from alcohol-related disease or injury.

Guideline 2. Reducing the risk of injury on a single occasion of drinking

For healthy men and women, drinking no more than **4 standard drinks on a single occasion** reduces the risk of alcohol-related injury arising from that occasion.

Guideline 3. Children and young people under 18 years of age

For children and young people under 18 years of age, not drinking is the safest option.

  A. Parents and carers should be advised that children under 15 years of age are at the greatest risk of harm from drinking and that for this age group, not drinking is especially important.

  B. For young people aged 15-17 years, the safest option is to delay the initiation of drinking for as long as possible.

Guideline 4. Pregnancy and breastfeeding

Maternal alcohol consumption can harm the developing fetus or breastfeeding baby.

  A. For women who are pregnant or planning a pregnancy, not drinking is the safest option.

  B. For women who are breastfeeding, not drinking is the safest option.

This document provides explanatory information about the new NHMRC alcohol guidelines and, where relevant, contrasts them with the previous guidelines. It aims to assist health and human services workers to understand their content and orientation. It may also assist them to operationalise the guidelines and make it easier for health workers and others to apply the new guidelines in their day-to-day practice.

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The question of how much alcohol is too much is one that has plagued mankind for centuries. Similarly, advice on alcohol limits and the effects of over imbibing are not new. In 4th Century BC, the Greek writer Eubulus describes Dionysos (aka Bacchus) as providing the following counsel regarding the consequences of alcohol consumption:

"Three kraters [cups] do I mix for the temperate:
one to health,
the second to love and pleasure,
the third to sleep.

When this bowl is drunk the wise guests go home.
The fourth bowl is no longer ours but belongs to hubris,
the fifth to uproar,
the sixth to prancing about,
the seventh to black eyes,
the eigth brings the police,
the ninth belongs to vomiting,
and the tenth to insanity and the hurling of furniture".[2]

Although there is a large body of research on the impact of alcohol on health and wellbeing, it was not until the mid-1990's that systematic efforts were directed at pulling together the available research evidence. It was also during this time that systematic reviews started to become common practice.

*K*ey terms used in the guidelines

For the purposes of the guidelines, the following definitions were used:

Risk – a person's risk of experiencing an adverse health outcome is the probability of the person developing that outcome in a specified time period

Lifetime risk – the accumulated risk from drinking either on many drinking occasions, or on a regular (eg daily) basis over a lifetime.

Relative risk – the risk of harm in drinkers relative to the risk of harm in non-drinkers. Note that the relative risk on its own does not give any information about the absolute risk of harm

Absolute risk – the actual risk of injury or disease from drinking

Harm – adverse health outcomes; in this context harm includes disease and/or injury resulting from consumption of alcohol

Standard drink – the Australian standard drink contains 10g of alcohol

Drinking occasion/single occasion – a sequence of drinks taken without the blood alcohol concentration reaching zero in between.

Regular drinking – repeated drinking occasions over a period of time – eg drinking daily, or every weekend, over many years

Harmful drinking – drinking at levels that are likely to cause significant injury or ill health

Immediate effects – the effects of drinking either during or after an occasion of drinking, lasting until the blood alcohol concentration returns to zero

Cumulative effects – the effects of many drinking occasions over time.

Australia first set authoritative guidelines in relation to the consumption of alcohol in the late 1980's. The first guidelines were based on a descriptive review of the literature. The most recent guidelines developed by the National Health and Medical Research Council (NHMRC) were released in February 2009 and were based on a combination of systematic and descriptive literature reviews and innovative statistical modelling. A copy of the full guideline document, titled 'Australian Guidelines To Reduce Health Risks From Drinking Alcohol'[3] can be obtained from www.nhmrc.gov.au

*W*hat's Different About the New Alcohol Guidelines

The new NHMRC alcohol guidelines are substantially different from those that preceded them in several important respects. From a health and human services workers'[4] perspective, questions arise regarding:

· what needs to be understood about the new guidelines

· how the guidelines and their content differ from previous understandings and

· how to construct alcohol-related advice for clients, patients and colleagues.

The new guidelines differ from the previous ones in relation to:

1. **RISK:** different concepts and models are used

2. **GENDER:** there is no longer the immediate gender differentiation in the guideline levels for low risk drinking

3. **AGE:** with specific emphasis on the needs of very young people (especially those under 15 years of age)

4. **PREGNANCY:** greater emphasis is placed on reducing alcohol-related risks associated with drinking in pregnancy

5. **TERMINOLOGY:** differences between 2001 and 2009

6. **HEALTH BENEFITS:** any purported health benefits from alcohol are not included in the calculations of risk.

Each area of divergence is outlined below in further detail.

1. The concept of RISK

The 2009 guidelines are predicated on the concept of risk. Guideline 1. goes beyond an examination of the immediate risk of injury or disease and is based on calculations of the cumulative risk of incurring an alcohol-related chronic disease or injury over one's lifetime. The estimate of lifetime risk as indicated in Guideline 1. is held to be a "liberal estimate" (p40), even in light of the caveats noted. The concept of risk applied is one that is linear and continuous, in contrast to the categorical use of the terms 'risky' and 'high risk' applied in the previous guidelines.

When calculating the risk curves, relevant data were aggregated to form a generalised picture. The report notes that:

"The model used to estimate lifetime risk of alcohol-related harm…is extrapolated from population event-related data, [and] it does not take into account individual variability (e.g. body weight) and does not necessarily include all relevant factors." (p40)

[2] Ball D, Williamson R, Witton J. In celebration of sensible drinking. *Drugs: Education, Prevention & Policy* 2007;14(2):97-102.
[3] The page references noted in this document and figures 1–6 refer to the NHMRC report Australian Guidelines To Reduce Health Risks From Drinking Alcohol.
[4] This document is written specifically for these groups of workers as a workforce development resource and, as such, it is not designed for the general public.

The report further states that:

"…there is a range of potential harms from alcohol consumption and the risk curve for each is different" and that *"almost all the risk curves have no apparent threshold and they may vary with the circumstances of drinking and characteristics of the drinker." (p40)*

The level of acceptable risk used in the guidelines is set at the risk of dying from an alcohol-related disease or injury of 1 in 100 (i.e. one death for every 100 people). That is, 1 in 100 deaths are predicted for lifetime consumption levels above 2 drinks per day (p36).

The lifetime risk curves related to different drinking patterns for injury for males and females are shown in figures 1–4 below.
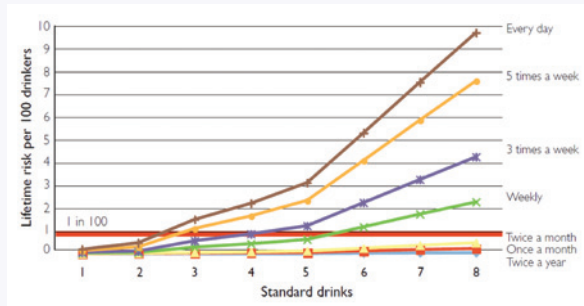

Figure 1. Lifetime risk of death from alcohol-related injury per 100 male drinkers, by number of standard drinks per occasion and frequency of occasions
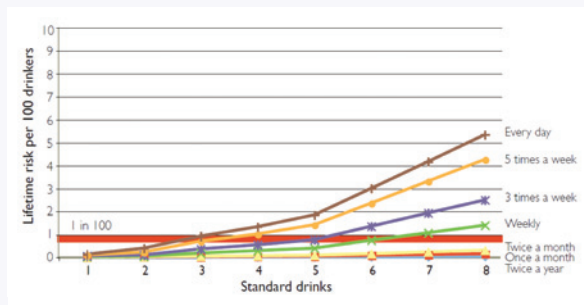

Figure 2. Lifetime risk of death from alcohol-related injury per 100 female drinkers, by number of standard drinks per occasion and frequency of occasions
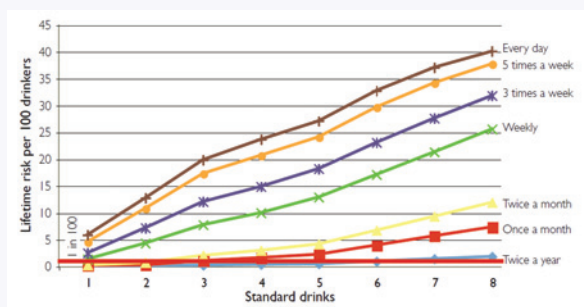

Figure 3. Lifetime risk of hospitalisation from alcohol-related injury per 100 male drinkers, by number of standard drinks per occasion and frequency of occasions
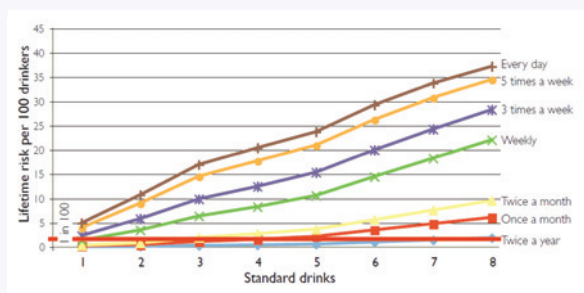

Figure 4. Lifetime risk of hospitalisation from alcohol-related injury per 100 female drinkers, by number of standard drinks per occasion and frequency of occasions

Additional factors also increase risk of alcohol-related harm. These include situations where consumption of alcohol is likely to endanger life; for example, mixing alcohol with activities such as driving, operating machinery or supervising children. When people are given advice on drinking levels and patterns they should also be advised that, in addition to personal health considerations, their drinking can adversely affect others.

2. GENDER

One of the more important changes in the current guidelines pivots around the issue of gender. There are several key factors in relation to gender. It remains irrefutable that women have a greater physiological vulnerability to alcohol than men. This occurs for several reasons including their usually smaller physical stature, higher body fat to water ratio, hormonal and other chemical differences. There are also gender differences in relation to risk taking behaviours. Men in general engage in more risk taking behaviours than do women; this is especially the case when alcohol has been consumed. While women have a greater physiological vulnerability to the negative effects of alcohol, men counter balance this by their propensity to engage in risky behaviours when they have been drinking. This is reflected in alcohol-related injury data. At comparatively low levels of consumption no gender difference is apparent. As consumption levels increase gender differences become increasingly apparent. See Figure 5.

The guideline report states:

*" At…(two standard drinks or less on any day), there is little difference in the risk of alcohol-related harm, for men and women over a lifetime. At higher levels of consumption, the risk of alcohol-related disease increases more quickly for **women** and the risk of alcohol-related **injury** increases more quickly for men." (p39)*
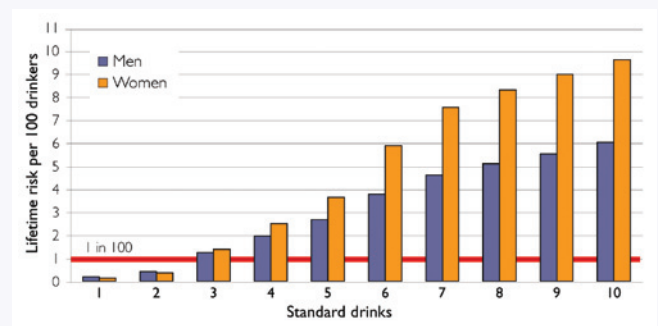

Figure 5. Lifetime risk of death from alcohol-related disease per 100 drinkers, by number of standard drinks per occasion, Australia 2002
Source: Rehm et al (2008)

Important public health messages in the new guidelines are that:

1. women still manifest higher levels of risk associated with alcohol as consumption increases

2. women are not being advised to drink as much as men.

3. AGE

The new guidelines place particular emphasis on alcohol and young people. New data highlights the elevated risk of harm that young people under the age of 15 are susceptible to, and hence they are strongly advised to not drink alcohol. Similarly, those aged 15-17 years are also at elevated risk of alcohol-related harm and caution is advised in relation to their use of alcohol. Data that supports advice in relation to young people comes from various sources. Recent epidemiological data shows the highest risk of alcohol-related injury is experienced by those under 15 years of age, followed by those aged 15-17 years.

National Drug Strategy Household Survey data (NDSHS) for the workforce also indicate younger workers to be at highest risk for engaging in heavier levels of drinking. Further, very recent research in relation to the impact of alcohol on the developing brain also indicates the need for delayed alcohol initiation. Australians consume alcohol at earlier and earlier ages[6] and early initiation can be associated with negative consequences in both the short and longer term.
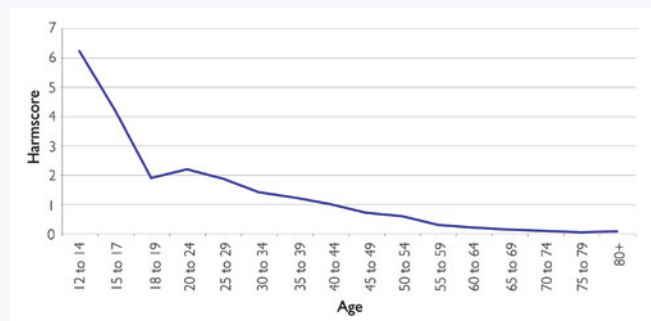

Figure 6. Harm per volume for drinkers drinking less than three standard drinks per session
Note: Ratio with 40–44 as base

4. PREGNANCY

The new guidelines advise that the safest option for a woman who is pregnant, planning to become pregnant or who is breastfeeding is to not drink alcohol at all. The 2001 guidelines advised that women 'may consider not drinking at all' and 'should never become intoxicated'. The previous guidelines also advised pregnant women who choose to drink to not consume more than seven standard drinks over a week and no more than two on any one day. The current guidelines are substantially more cautious in their advice.

5. TERMINOLOGY

Various terms have been employed to describe different levels of harm and potential risk associated with alcohol. Such terms included 'light', 'moderate' and 'heavy' alcohol use, sometimes with a quantifier and other times without. Other terms have included 'hazardous' and 'harmful'. The 2001 guidelines referred to 'low risk', 'risky' and 'high risk' drinking in the short and long term.

2001 NHMRC Guideline Terminology		2009 NHMRC Guideline Terminology
Short term harm	➔	Immediate effects
Long term harm	➔	Lifetime risk or Cumulative effects

In the current guidelines no such terms are used; and neither are definitive cut points used in relation to levels of use other than 2 drinks per day and 4 drinks per single occasion, which represent the points at which risk increases substantially for lifetime or immediate effects.

In this sense, the term 'risk' is used as an objective indicator to be interpreted and applied with the judgment of the health professional and the individual themselves.

	2001 Levels			2009 Levels	
	Low Risk	Risky	High Risk		
Short term Males	<6	7-10	>11	Single occasion Males & Females	4
Short term Females	<4	5-6	7+		
Long term Males	<4	5-6	7+	Lifetime risk Males & Females	2
Long term Females	<2	3-4	5+		

Lack of differential cut points and clearly defined risk categories has several implications.

· **In a clinical context**, the clinician will be required to exercise greater judgment about what constitutes risk for a given client/patient.

· **In health promotion terms,** the public health message is simpler at one level, but also more complex when attempting to individualise and tailor the message in regard to personal risk.

· **In relation to research,** having two or potentially three risk categories (i.e. < 2, 3-4, more than 4 drinks per day or on a given occasion) to apply consistently across different studies presents a challenge. Discussion among researchers is required to achieve consensus on appropriate cut points.

Although there has been a change in the terminology used in the guidelines between 2001 and 2009, there is no change in the health and behavioural issues of concern as shown in the table below.

Short term or immediate effects	Long term or cumulative effects
Intoxication, nausea, injury, blackouts, assaults/violence, disinhibition, delayed reaction time, Impaired balance, co-ordination and loss of fine motor skills, impaired respiration at high BAC with the possibility of unconsciousness and death	Cardiovascular disease, cancers (various), diabetes, nutrition-related conditions, risks to the unborn child, liver disease, cognitive impairment (incl. brain damage)

Note also that the term 'binge drinking' is not used in the guidelines as it is considered to be non-specific, pejorative and unhelpful.

6. HEALTH BENEFITS

Some calculations of the harms or risks associated with alcohol have included a discount for the purported health benefits of alcohol. For example, the number of cases of heart disease associated with heavy alcohol use have been offset by the estimated number of heart attacks that might have been reduced by moderate use of alcohol. However, any purported benefit of alcohol has not been included in the calculations developed to inform the current guidelines.

[6] Roche AM, Freeman T. The decreasing age of alcohol initiation in Australia. (under editorial review). Contact NCETA for details.