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Review of the Australian Alcohol Guidelines: Health risks and benefits (2001)

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Introduction

The National Health and Medical Research Council (NHMRC) is Australia's leading expert body promoting the development and maintenance of public and individual health standards. In February 2006, it announced that the Australian Alcohol Guidelines: health risks and benefits, which were published in 2001, were to be revised. The recommendations were developed by the NHMRC in collaboration with the Population Health Division of the Department of Health and Ageing with funding from the National Alcohol Strategy. Under the normal five-year publications review process, 2006/07 is an appropriate time for their revision. The Guidelines have a three-fold purpose:

- to enable Australians to make informed choices about their drinking and health;
- to enable health professionals to provide evidence-based advice on drinking and health; and
- to promote individual and population health, and minimise harm from alcohol.

While at least 33 countries have a public health policy on alcohol and corresponding guidelines, Australia has the most comprehensive policy and guidelines of any country.

Evolution of the NHMRC recommendations

The first NHMRC recommendations regarding responsible drinking behaviour were published in 1987. Is there a safe level of daily consumption of alcohol for men and women? The recommendations were primarily based on the risk of damage by alcohol on the body's organs and tissues, and the risk of death in the longer term, where 'safe' was related to an acceptable level of risk. They were developed in response to a significant increase in the incidence of alcohol-related diseases, injuries and problems impacting on the individual and the general community. The recommendations defined 'safe', 'hazardous' and 'harmful' drinking levels, which are allied to levels of risk of alcohol-related harm. For example, two to four standard drinks per day or 14 per week were considered 'hazardous' for women and more than four standard drinks per day or 28 per week were considered 'harmful' for women, while four to six standard drinks per day or 28-42 per week were considered 'hazardous' for men and more than six standard drinks per day or 42 per week were considered 'harmful' for men. A standard drink is 10 g alcohol. Women's organs and tissues are more susceptible to the toxic effects of alcohol and its metabolite, acetaldehyde (Saunders et al. 1981, The Gut Foundation 1984, Gavalier 1982, Corti 1988, Mumenthaler et al. 1999) and there are also physiological gender differences in body size and the distribution of fat and water, as well as in alcohol metabolism (Marshall et al. 1983, Tanaka 1999, Li et al. 2000, Baraona et al. 2001, Ramchandani et al. 2001). Several epidemiological studies also suggest that there is an increased risk of breast cancer for women with increasing alcohol consumption (Tjonneland et al. 2007). The defined levels in the NHMRC 1987 recommendations were, however, based on a variety of scientific and social opinions rather than on a detailed review of the epidemiological research. These recommendations were then revised in 1992.

In 1996, a meta-analysis was undertaken of 16 cohort studies which examined the relationship between the level of consumption and all-cause mortality, and a further 132 epidemiological studies were examined for 10 specific alcohol-associated causes of death, such as cardiovascular disease. The meta-analysis determined that the relative risks of mortality as defined in the recommendations were consistent with available epidemiological evidence (Holman et al. 1995, 1996). The meta-analysis also determined that a pattern of usual alcohol consumption consistent with the recommendations for 'safe' drinking levels would confer a mortality risk similar to or less than that observed in abstainers for people aged 35 years or older. Above 'safe' drinking levels, the mortality risk increases – this J-shaped relationship between the amount of alcohol consumed and risk of cardiovascular disease

and mortality from all-causes was first described by Klatsky et al. in 1974. The decreased risk of approximately 20–50% seen with safe drinking levels is observed for both men and women (Stampfer et al. 1988, Klatsky et al. 1992, Rehm and Sempos 1995, Klatsky 1996) irrespective of ethnicity and geography. It is first observed when risk factors for cardiovascular disease begin to influence medium and long-term health, that is, at approximately age 35 years for men and approximately age 50 years for women and generally continues in men until approximately 75 years of age but continues in women past 75 years of age (Thun et al. 1997, Simons et al. 2000).

Australia's 2001 Guidelines

In 1999, the NHMRC subsequently revised their 1987 and 1992 recommendations, as more material became available concerning the importance of drinking patterns and individual risk factors associated with the safe consumption of alcohol by men and women. Indeed, the 2001 Guidelines are based on a detailed review of epidemiological and scientific research on alcohol and health (Single et al. 1999). They are built on those of 1987 and 1992 regarding responsible drinking behaviour, and attempt to address when, where and under what circumstances hazardous consumption and associated high risk is likely to occur. As there are various alcohol consumption patterns, a single measure of mean daily intake is likely to hide patterns of consumption that are particularly harmful, such as binge drinking. Consequently, 'safe' consumption has now been defined in terms of both daily and weekly amounts, which considers both the amount and pattern of consumption associated with risk of harm. Indeed, it has been shown that specific occasions of heavy consumption, usually by people who generally consume moderate amounts of alcohol in low risk ways, result in most alcohol-related harm (Single and Rohl 1997).

Furthermore, the 2001 Guidelines reflect the results of the 1996 meta-analysis undertaken that determined the relative risks of mortality as a J-shaped curve. The recommendations now define a general level of alcohol consumption at which there is minimal risk of harm in the longer-term, such as liver cirrhosis, but where there might also be some longer-term health benefits, such as a reduced risk of cardiovascular disease, for a proportion of the population. They also now define a daily level of alcohol above which the short-term risk of harm, such as accidents, significantly increases. This balanced approach and attitude to alcohol consumption is emphasised by the overall opening message of the 2001 Guidelines: "alcohol is widely used and enjoyed throughout our society, and for many people it forms part of a generally healthy lifestyle that includes a good diet and exercise".

In addition to gender, individual risk factors for alcohol-related harm have since been shown to include age, genetic variation in alcohol metabolism and susceptibility to certain diseases and disorders, and health status, as well as the amount of alcohol consumed on any one occasion. Accordingly, there are now recommendations for the consumption of alcohol which recognise variations in risk for specific population groups or specific situations such as: people with a health or social problem that is related to alcohol consumption, or made worse by alcohol consumption (including alcohol dependence); people with a relative who has, or has had, a problem with alcohol consumption; people with a mental health problem (including anxiety or depression) and/or sleep disturbance; people taking medications or other drugs; pregnant women or those planning to become pregnant; young adults; older adults; underage consumers and abstainers; when undertaking activities that involve risk or a degree of skill; and when responsible for private and public drinking environments.

For example, because alcohol in a pregnant woman's blood stream enters that of her unborn child, which might affect the development and growth of the child from conception onwards, the initial recommendation is that pregnant women may consider not drinking alcohol at all. Indeed, it is difficult to identify exactly the lowest level of drinking at which alcohol may cause harm to the child. The limited literature indicates that alcohol consumed by pregnant women averaging less than one drink per day has no measurable impact on children's physical and mental development (O'Leary 2004). Another recent review on the effects of low to moderate prenatal alcohol consumption (up to eight standard drinks/week) on foetal and early infant development has also concluded that there is no convincing evidence of harmful effects at this level (Henderson et al. 2007). The literature indicates, however, that episodes of drinking alcohol by pregnant women above the guideline level considerably increases the risk to the unborn child, including the risk of miscarriage, low birth weight, cognitive defects and congenital abnormalities. Thus, pregnant women, if they choose to drink over a week, should have less than seven standard drinks and, on any one day, no more than two standard drinks spread over at least two hours. The risk is highest in the earlier stages of pregnancy, including the time from conception to the first missed period. As heavy episodes

of drinking maximise that risk, most importantly, pregnant women, or women considering becoming pregnant, should never become intoxicated.

Older people are advised, if they drink alcohol, to consider drinking less than the general guidelines. A given amount of alcohol generally produces a higher blood alcohol concentration in older people because, with age, the body's total water content into which the alcohol diffuses, decreases. Also, balance, coordination and eyesight deteriorate with age and alcohol consumption can accordingly increase the risk of accidents. In addition, many older people take medications that might interact with alcohol (NIAAA 1995, 1998).

Young people aged 18-25 years are advised to only drink alcohol at the level recommended in the general guidelines and are advised not to drink prior to undertaking potentially risky activities such as driving, swimming and boating. While many young people drink at low risk levels, they have the highest alcohol consumption of any population group in Australia. Statistically, this is the group that is at the highest risk in relation to alcohol-related injury, including road trauma, violence, sexual coercion, falls, accidental death (including drowning), and suicide. Furthermore, they should not mix alcohol with other mood altering drugs that may interact with alcohol. Young people aged under 18 years, are advised that they should keep any alcohol drinking to a minimum and not to become intoxicated. If they choose to drink alcohol, then they should be supervised by adults at all times, where a gradual introduction to alcohol is recommended. This is because younger people's ability to cope with the effects of alcohol is influenced by their physical size and stage of development. Younger people generally have a smaller body size (and total body water content) than adults and, as in older people, a given amount of alcohol generally produces a higher blood alcohol concentration. They also lack experience of drinking alcohol and its effects, and so have no yardstick by which to measure their behaviour.

Under revision

Over the past six years, new literature has been published on alcohol consumption patterns, drinking alcohol during and before pregnancy; and associations between alcohol and certain cancers. The literature review and revision of the Guidelines will thus focus on advice to pregnant women; breast, colorectal and other cancers and any association to alcohol consumption; as well as the cardiovascular and other protective effects from moderate alcohol consumption.

Opportunity

A workshop will be conducted at the Thirteenth Australian Wine Industry Technical Conference. It will provide an opportunity for industry members, researchers and other interested parties to discuss and debate the proposed revisions of the NHMRC Australian Alcohol Guidelines of 2001. It will also provide an opportunity for industry to provide constructive comment about the Guidelines as well as the recently reviewed and endorsed National Alcohol Strategy 2006–2009, which will be included in the Australian wine industry submissions.

Thirteenth Australian Wine Industry Technical Conference

Date: Sunday, 29 July 2007

Time: 8:00 am – 12:30 pm

Location: Adelaide Convention Centre

Cost: \$120

To register:

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Definitions

In statistics, a meta-analysis combines the result of several studies that address a set of related research hypotheses.

A cohort study is a study in which subjects who presently have a certain condition and/or receive a particular treatment are followed over time and compared with another group who are not affected by the condition under investigation.

Epidemiology is the study and investigation of the distribution and causes of disease. Epidemiological studies are important for identifying, evaluating and understanding risk factors that may be associated with a disease. Some studies follow people through time, evaluating those exposed to a risk factor and comparing them for disease outcome with similarly matched people who are not exposed. Other study designs look at populations of people at a point in time, and evaluating the disease outcome. Retrospective study designs go back in time and follow persons exposed in a particular activity to evaluate patterns and disease outcome.