



Alcohol and Chronic Disease Prevention

Position Statement

Key Messages

- The Australian Chronic Disease Prevention Alliance recommends that people limit or avoid drinking alcohol to reduce their risk of developing chronic disease.
- People who choose to drink alcohol should drink only within the National Health and Medical Research Council guidelines for alcohol consumption which recommend that healthy Australians should have no more than two standard alcoholic drinks (defined as containing 10g of alcohol) per day.
- There is no evidence to suggest that non-drinkers should start to drink alcohol for any possible health benefit.
- Alcohol consumption, especially at high levels, can increase the risk of developing a range of chronic diseases including cardiovascular disease, type 2 diabetes and chronic kidney disease. Alcohol is a cause of cancer and consumption at any level increases cancer risk.
- Alcohol consumption may also contribute to the development of other major chronic disease risk factors such as high blood pressure and obesity and overweight.
- Drinking red wine or other types of alcoholic drinks for the prevention or treatment of cardiovascular disease is not recommended. Any potential cardiovascular benefits from alcohol can be gained through lifestyle factors such as healthy eating and regular physical activity. There is no evidence of any protective effect of alcohol for cancer.
- People with existing chronic conditions, especially type 2 diabetes, hypertension and chronic heart failure should take precautions when drinking alcohol and should discuss alcohol consumption with their doctor or their credentialed diabetes educator.

Alcohol consumption and chronic disease risk

Background

Alcohol consumption, especially at high levels, can increase the risk of developing a range of chronic diseases including, cardiovascular disease, type 2 diabetes and chronic kidney disease. Alcohol is a cause of cancer and consumption at any level increases cancer risk.

Alcohol consumption may also contribute to other major chronic disease risk factors such as high blood pressure and overweight and obesity.

While low to moderate levels of alcohol consumption (1-2 standard drinks per day) may provide some protection against cardiovascular disease and diabetes in middle aged and older people, particularly older women, higher consumption levels increase the risks. There is no evidence of any protective effect of alcohol for cancer.

Cancer

The International Agency for Research on Cancer has recognised alcohol as a group 1 carcinogen (the highest rating for cancer causing substances)(1;2) .

The most recent major report by the World Cancer Research Fund concluded that there was convincing evidence that alcohol causes cancer of the mouth, pharynx, larynx, oesophagus, colorectum (in men) and breast. It also found that alcohol probably causes colorectal cancer in women and liver cancer (3).

Any level of alcohol consumption can increase the risk of developing an alcohol-related cancer. The level of risk increases in line with the level of alcohol consumption (2). The increase in cancer risk is seen across all types of alcoholic beverages (3).

It is estimated that 5,070 new cases of cancer (or 5% of all cancers) in Australia in 2005 were attributable to long-term chronic alcohol use (4).

Smoking and alcohol together have a synergistic effect on upper gastrointestinal and aero-digestive cancer risk, meaning the combined effects greatly exceed the risk from either one alone.(5) It has been estimated that over 75% of cancers of the upper aero-digestive tract in developed countries can be attributed to this synergistic effect of alcohol and smoking (6).

Heart Disease

The potential benefit of light to moderate alcohol consumption on cardiovascular disease is the subject of ongoing scientific debate.

A number of population studies of alcohol consumption, including a 2011 meta-analysis, have indicated that low to moderate consumption of alcohol (1-2 standard drinks per day) may reduce the risk of cardiovascular disease for middle-aged and older people, with regular moderate drinking with meals offering the greatest benefit (7;7-15). It has been suggested that specific beverages, such as wine and especially red wine, may be of particular benefit (8;9;16). Where evidence suggests a potential cardiovascular benefit most if not all of the benefit is achieved with 1-2 standard drinks per day: higher consumption levels do not increase the benefits and are associated with a greater risk of stroke (7).

Other research has challenged the findings and methodologies of these studies, showing no evidence of a protective effect or suggesting that the protective effect may have been overestimated (17-19). Possible errors identified include the misclassification as non-drinkers of former drinkers who might have stopped drinking for reasons such as ill-health or becoming older, and who might reasonably be assumed to be more likely to have coronary disease(17;20). In addition the protective effect suggested for wine consumption may be the result of confounding factors such as an association between wine consumption and better eating patterns and healthy behaviours (17;20-22).

While the potential benefit of light to moderate alcohol consumption on cardiovascular disease is the subject of ongoing scientific debate, the adverse effects of higher consumption levels (both episodic and long-term) are well documented (23). Alcohol can raise blood pressure and increase the risk of arrhythmias, cardiomyopathy, some types of cardiac failure and other circulatory problems (18). Heavy and binge drinking also increase both the short- and long- term risk of heart attack (23).

Stroke

Excessive alcohol consumption is clearly associated with an increased risk of stroke (7;24;25). Evidence relating to moderate alcohol consumption on stroke is less consistent although some evidence indicates low levels of consumption (1-2 standard drinks per day) may reduce the risk, particularly for ischaemic stroke (23;24;26-29).

There is evidence linking heavy drinking with stroke in younger adults, as well as a link between long-term heavy drinking and stroke (23). Binge drinking is also associated with an increased risk of stroke (23;28;30).

In addition, there is clear evidence of a link between alcohol consumption and high blood pressure (hypertension), which is a major risk factor for stroke (12).

Diabetes

The relationship between alcohol consumption and the risk of developing type 2 diabetes is unclear (18;31).

Heavy alcohol consumption appears to be a risk factor for developing type 2 diabetes but low to moderate alcohol intake increases insulin sensitivity and may reduce the risk of type 2 diabetes (32-37).

However, alcohol consumption can increase the chance of developing major risk factors for type 2 diabetes such as high blood pressure(18) and overweight and obesity.

People with existing diabetes should take special precautions when drinking alcohol as alcohol consumption can interfere with good glycaemic control and increase the risk of hypoglycaemia (18;35).

Chronic kidney disease

Evidence of the link between alcohol consumption and the risk of developing chronic kidney disease is limited and inconsistent. A number of studies show that moderate alcohol consumption does not affect or may reduce the risk of developing chronic kidney disease (38-40). Other studies show moderate to heavy alcohol consumption increases the risk of developing chronic kidney disease (41-43).

Excessive alcohol consumption may add to the risk of developing chronic kidney disease if other risk factors are present. One study showed that heavy drinking (more than four standard serves of alcohol per day) and smoking independently doubled the risk of developing chronic kidney disease but together increased the risk fivefold (42).

Excessive alcohol consumption can also contribute to the risk of developing high blood pressure, cardiovascular disease, type 2 diabetes and liver disease, which are major risk factors for developing kidney disease. Alcohol is also high in kilojoules and may lead to weight gain which is another major risk factor for kidney disease.

High blood pressure

High blood pressure (hypertension) is a major risk factor in the development of cardiovascular disease, including stroke, type 2 diabetes and kidney disease (23).

There is clear evidence of a link between alcohol consumption and high blood pressure. Heavy drinking raises blood pressure while reducing alcohol consumption decreases blood pressure (23).

Nutrition and obesity and overweight.

Excess body weight is a major risk factor for the development of chronic disease. It accounts for 55% of the burden of disease associated with type 2 diabetes, 20% of the burden of cardiovascular disease and 4% of the cancer disease burden (44).

Alcohol has a high kilojoule (energy) content but little nutritional value. If these “empty kilojoules” are consumed in addition to normal energy requirements they are likely to lead to weight gain over time, or, if consumed instead of normal energy requirements, to poor nutrition (45).

Alcohol also impairs the body’s ability to utilize nutrients by inhibiting the breakdown of nutrients, impairing nutrient absorption and impeding transport of some nutrients into the blood (46;47). As a result excess alcohol consumption can result in a number of conditions caused by nutritional deficiencies such as Wernicke-Korsakoff syndrome, folate deficiency, vitamin A depletion and pellagra (45).

Experimental evidence suggests that kilojoules from alcohol consumption contribute to weight gain by adding extra kilojoules to the diet, by increasing appetite and by suppressing the conversion of fat and carbohydrate to energy (45).

However, epidemiological data on the link between alcohol consumption and obesity and overweight are not conclusive (45). While a number of studies confirm a link between alcohol intake and increased risk of obesity and overweight (48-51), some show no link or an inverse relationship (52;53). Drinking patterns and gender appear to be important with a number of studies indicating a greater risk of weight gain and especially abdominal obesity in men who consume alcohol but an inverse relationship between obesity and heavy drinking in women (48;50;54;55). The inconclusive epidemiological data are likely to be explained by complex confounding factors, including quantity and patterns of alcohol consumption, individual genetic variability and lifestyle factors (45;56).

Impact of alcohol consumption in Australia

Excessive alcohol consumption is a major contributor to both social and health-related costs in Australia. In 2004-05 the total costs of alcohol to Australia, including loss of life, lost productivity, health care costs, road accident-related costs and crime-related costs were estimated at \$15.3 billion (57).

Alcohol harm was estimated to be responsible for 3% of the total burden of disease and injury in Australia in 2003, with a net impact of 2%, taking into account the possible benefits in relation to cardiovascular disease. Alcohol was also responsible for the greatest amount of burden in males under the age of 45 (44).

Although most Australians aged 14 years and over drink alcohol at levels considered a low risk to their health in the long term, one in five Australians aged 14 years and over drink at levels that put them at risk of harm from alcohol-related disease or injury over their lifetime (58). Men are twice as likely as women to drink at these risky levels and risky drinking is highest in people aged 18-29 years (58).

In addition, about one in 6 of Australians aged 14 years or older put themselves at risk of an alcohol-related injury from a single drinking occasion (binge drinking) at least once a week (58).

Alcohol consumption among Australian secondary school students aged 12-17 years is common and increases with age: 10% of 12-year-olds were current drinkers in 2005 increasing to 49% among 17-year-olds. Of those classified as current drinkers, the proportion drinking at harmful levels increased from 26% in 1999 to 31% in 2005 (59).

Aboriginal and Torres Strait Islander people are more likely to abstain from alcohol than the general population. However, those who do drink are around 1.5 times more likely to drink at high-risk levels than non-Indigenous people (60) and deaths from alcohol-attributable conditions are around two and a half times greater for Aboriginal and Torres Strait Islander people than for the general population (61).

Further information

Related ACPDA Position Statements available from www.cancer.org.au/acdpa

- *Alcohol Pricing and Taxation*
- *Marketing and Promotion of Alcohol*
- *Health information and warning labels on alcohol*
- *Alcohol Supply*

Cancer: <http://www.cancer.org.au/policy/positionstatements/alcohol.htm>

Heart disease: <http://www.heartfoundation.org.au/SiteCollectionDocuments/Antioxidants-Summary-Evidence.pdf>

Stroke: <http://www.strokefoundation.com.au>

Diabetes: <http://www.diabetesaustralia.com.au>

Kidney disease: <http://www.kidney.org.au/>

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