



Wine consumption and heart health

A large amount of research has been conducted on the effects of alcohol (and specifically wine) consumption on the risk of cardiovascular disease. This column provides responses to some of the more common questions in this area.

WHAT IS THE IMPACT OF CARDIOVASCULAR DISEASE?

Cardiovascular disease (CVD), which includes high blood pressure, heart attacks, coronary heart disease, heart failure and stroke, represents a major public health and financial burden worldwide despite knowledge of modifiable risk factors and accessibility of therapies.

It is the leading cause of death in developed countries and its incidence is increasing in developing countries.

In Australia, CVD currently accounts for approximately 33% of deaths, 18% of the overall burden of disease and 12% of total health expenditure.

WHAT IS THE EFFECT OF ALCOHOL CONSUMPTION ON CVD RISK?

The National Health and Medical Research Council's (NHMRC) *Guidelines to reduce health risks from drinking alcohol* of 2009 state that "The effect of alcohol on the cardiovascular system is complex. The body of evidence suggests that most of the potential cardiovascular benefit of alcohol may be achieved by drinking within the levels recommended in Guideline 1. For example, it has been reported that the benefits can be achieved with an intake of half a standard drink per day. It should also be noted that the potential cardiovascular benefits from alcohol can also be gained from other means, such as exercise or modifying the diet."

Guideline 1, which refers to reducing the risk of alcohol-related harm over a lifetime, states that "the lifetime risk of harm from drinking alcohol increases with the amount consumed. For healthy men and women, drinking no more than two standard drinks on any day reduces the lifetime risk of harm from alcohol-related disease or injury".

The relationship between the consumption of alcoholic beverages and CVD has now been studied for at least 50 years at both the individual and population levels.

From more than 200 population studies undertaken in the last 40 years, it has been repeatedly concluded that the relationship between the consumption of alcoholic beverages and the risk of CVD is j-shaped.

While dietary risk factors for CVD include heavy amounts of alcohol (both regular and occasional), light to moderate amounts of alcoholic beverages reduce the risk of overall CVD compared to both heavier consumption and abstinence.

ARE THERE SPECIFIC EFFECTS FOR WINE?

From the small number of comparative studies, the reduction in risk for overall CVD may be greater for wine than for beer and spirits. Further research is required to verify this. When summarised, the studies show conclusively that consumption of 10 to 20 g alcohol or one to two standard drinks per day as wine reduces the relative risk of overall CVD in the general population by approximately 25 to 30%.

The reduced risk of overall CVD is observed for healthy males and females aged from approximately 40 to 50 years, continuing past approximately 75 years of age. It is also observed for those individuals with pre-existing CVD conditions such as heart attack and ischaemic stroke (physical blockage of blood flow,

from a blood clot to an area of the brain, causing brain cells in the area to die).

The reduction in risk of CVD is not, however, uniformly observed for each CVD condition. A reduction in risk is observed for coronary heart disease and heart attacks, as well as for heart failure, peripheral vascular disease, and high blood pressure in women. The risk of atrial fibrillation (a common cardiac arrhythmia), haemorrhagic stroke (ruptured and bleeding brain artery) and high blood pressure in men is not, however, reduced with light to moderate wine consumption and may increase incrementally with each glass of wine.

Light to moderate wine consumption is considered to be 10 to 20 g alcohol/day (1 to 2 standard drinks/day). When wine consumption increases to more than 20 g alcohol/day, the risk of any adverse effects increases. The pattern of wine consumption is also important, with episodic heavy drinking (binge drinking) appearing to modify or negate the cardioprotective effects of wine consumption on coronary heart disease. Such drinking patterns are also associated with increased risk of sudden death and haemorrhagic stroke.

WHAT HAPPENS TO THE HEART WHEN YOU DRINK?

The following table summarises the typical physiological effects of light to moderate versus heavy wine consumption. These effects are also influenced by age, gender and genetic factors.

Effects of light to moderate wine drinking

- Reduction of fat deposits in arteries (atherosclerosis), which protects against heart attacks and ischaemic strokes;
- Protection against forming a blood clot, which protects against heart attacks and ischaemic strokes;
- Promotion of breaking down of blood clots, which protects against heart attacks and ischaemic strokes; and
- Decreased risk of high blood pressure in women.

Effects of heavy and excessive wine drinking

- Increased risk of heart muscle disease. This disease enlarges the heart muscle or makes it thicker and more rigid than normal and scar tissue may replace the muscle tissue. The disease can make the heart less able to pump blood through the body. It can also cause disturbed heart rhythms or heart failure where the heart can't pump enough blood throughout the body, and sudden cardiac death;
- Increased risk of a changed or disturbed sequence of electrical impulses causing changed or disturbed heart rate or rhythms, which can cause the heart to pump less effectively and possibly result in sudden cardiac death;
- Increased risk of haemorrhagic stroke; and
- Increased risk of high blood pressure which can cause heart failure where the heart can't pump enough blood throughout the body.

For more information about effects of wine consumption on human health, please contact the AWRI helpdesk on 08 8313 6600 or helpdesk@awri.com.au.

