I have heard that drinking red wine lowers the risk of heart disease. Is this correct? What about other alcoholic drinks?

The idea that wine may be helpful in combating heart disease stemmed from the observation that people in the Burgundy area of France, where wine is very popular, experience a lower rate of heart disease than those in Western countries (such as Australia) where wine is not the major alcoholic beverage. This is despite the observation that Burgundians generally eat a diet that is rich in cheese, cream and pâté de foie gras (pâté derived from fatty goose or duck liver), among other foods rich in saturated fat and cholesterol. The phenomenon of a low incidence of heart disease existing in a population where the diet is predominantly high in saturated fat (which normally promotes heart disease) has come to be known as the 'French Paradox'. This observation led to the idea that drinking wine may be protective against heart disease. Subsequent research provided strong circumstantial evidence that drinking wine (especially red wine) in moderate amounts is associated with a significant reduction in the risk of developing heart disease and perhaps other associated diseases.

However, an association doesn't necessarily indicate cause and effect. For example, people who carry matches or a cigarette lighter in their pocket are far more likely to contract lung cancer than those who don't. Of course it is cigarette smoking that leads to lung cancer—carrying a lighter is not the cause of the disease, despite the fact that the association exists. With respect to heart disease in France it may be, for example, that fruit and vegetable consumption (also quite high in France) is the factor that is protective. If so, wine consumption may be merely associated with, but not the cause of, the observed lower rates of heart disease. Similarly, in countries like Australia, the US and the UK, wine drinkers are believed to smoke less, exercise more and generally lead 'healthier' lifestyles than most beer drinkers. It could therefore be that healthy lifestyles associated with wine drinking are protective against heart disease, rather than wine drinking itself.

On the other hand, non-drinkers, who might also be expected to lead a healthy lifestyle, consistently have higher rates of heart disease than moderate drinkers of any type of alcoholic drink. Recent evidence also suggests that non-drinkers have higher rates of diabetes and metabolic syndrome as well, though this may not be the case for those who suffer a stroke. (Metabolic syndrome is diagnosed according to
abnormal blood fat levels, blood glucose concentration, blood pressure and excess body fat levels.)

There are sound theoretical arguments supporting the belief that drinking wine may actually be protective against heart disease. Recent studies have demonstrated the presence of powerful antioxidants in wine. Red wine may be especially beneficial because it has additional antioxidants—not present in white wine—that are derived from the skins of grapes. Different grape antioxidants have different effects. One antioxidant (found only in red wine) increases the level of the good cholesterol (HDL) in the blood, and simultaneously lowers the level of bad cholesterol (LDL). Other antioxidants (present in red and white wine) help to protect LDL in the blood from being oxidised. (Oxidation of LDL is believed to be a critical step in the process leading to heart disease). Still another antioxidant helps to dilate blood vessels, thereby reducing the risk of abnormal blood clotting (the immediate cause of most heart attacks). More recent research seems to indicate that red wine may promote higher levels of the healthy omega-3 fats in the body, which may also add to its beneficial effects.

Even so, several recent studies suggest that ethanol—the alcoholic component of wine, beer and spirits—may be the major factor involved in heart protection. Red wine may have additional benefits, though this notion is not clear at present. In addition, the pattern of alcohol consumption may be important. For example, drinking with meals may confer additional benefit when compared to drinking without food. Abstaining from alcohol consumption for a day or two each week rather than drinking every day seems to provide additional benefit. Although more research is required, the current scientific consensus seems to be that wine, and possibly red wine in particular, is the most 'heart friendly' alcoholic beverage.

However, alcohol consumption has also been shown to affect illness, injury and death in the literature. Accidents (on the road, at home and at work), cancer, liver disease, domestic violence and crime are all influenced by alcohol intake. The question arises: at what level of intake is the protection against heart disease outweighed by increased rates of illness, injury and death from other causes?

It has been observed that the relationship between alcohol consumption and illness/death follows a 'J curve'. That is, those who do not drink alcohol suffer more illness or die younger, on average, than those who have a low-to-moderate alcohol intake. However, as alcohol intake increases, the relative risks of illness and early death rise above those for the non-drinkers. As alcohol intake increases further, rates of illness, death and injury accelerate rapidly.

In some studies, stroke risk appears to increase at alcohol consumption rates below those that protect against heart attack. More than one drink per day may increase stroke risk, especially in men, but having a few days each week without alcohol may reduce this risk, even if average consumption is higher than one drink per day. You can see from this example that sorting out the risks of drinking is complex, and this is why recommended maximum intakes of alcohol consumption are generally conservative.

So how many drinks of alcohol per day would be considered safe? This is a question that is still hotly debated. Of course, if you are going to drive, use machinery or engage in similar potentially dangerous activities, zero alcohol intake beforehand is the only safe level.
The National Health and Medical Research Council (NHMRC) concluded in 2009 that up to two standard drinks* per day is the maximum safe dose for men and women, with a further recommendation that no more than four standard drinks be consumed on any one occasion. The NHMRC also recommends that zero alcohol intake is the safest option for pregnant women, those who are breastfeeding, and for everyone (male or female) under the age of 18.

Even so, breast cancer risk increases from about one standard drink per day, so this should be considered in any overall health risk evaluation.

A bottle of Australian table wine usually contains between seven and eight standard drinks, so the recommended maximum daily intake of wine is about one quarter of a bottle (two small glasses). It should also be pointed out that the probable benefits of low/moderate consumption of wine, while significant, are not massive. If you do not already drink alcohol, or for any reason should not drink alcohol, this FAQ does NOT recommend that you start to do so. The advice here applies only to those people who are, or intend to become, social wine drinkers.

*Definition of a standard drink: One standard drink contains about 10 grams of alcohol. Examples of one standard drink are one 285 mL (10-ounce) glass of normal strength beer; 2 x 285 mL glasses of 2% alcohol beer; 100 mL (small glass) of table wine, 60 mL of port or other fortified wine; 30 mL (one nip) of spirit or liqueur.

**Suggested further reading**

Australian Guidelines to Reduce Health Risks from Drinking Alcohol.


*Disclaimer: This material is provided on the basis that it constitutes advice of a general nature only. It is not intended to replace the advice of a physician or a dietitian.*