

Frequently asked questions in response to ABC Catalyst report about cholesterol and medications

Quick links to the evidence available:

- The **Heart Foundation's** guideline for the management of primary prevention (pre-heart attack/disease diagnosis) can be found on the Heart Foundation's website.
<http://www.heartfoundation.org.au/information-for-professionals/Clinical-Information/Pages/absolute-risk.aspx>
- The **Heart Foundation's** guide for the management of secondary prevention (post-heart attack/disease diagnosis) can also be found on the Heart Foundation's website.
<http://www.heartfoundation.org.au/information-for-professionals/Clinical-Information/Pages/coronary-heart-disease.aspx>

Q. Why does the Heart Foundation recommend statins for secondary prevention, and in some cases, primary prevention?

A. The highest level of evidence identifies that the cholesterol lowering drugs, statins, can assist in reducing major events such as heart attacks. They are particularly effective for people who have heart disease.

Statins are some of the most studied therapeutic agents in the history of modern medicine and have proven success in reducing heart attacks and strokes in those who have already had cardiac events and those who are at high risk.

One of the Heart Foundation's goals is to ensure risk factors are well managed and cardiovascular disease is appropriately treated.

Q. How is a person's risk calculated to decide whether they need medication?

A. An individual's likelihood of developing heart disease and/or having a cardiovascular event (such as a heart attack) depends on a number of factors, some of which they can modify and some of which they cannot.

Risk factors include:

- Smoking
- High blood pressure
- High cholesterol
- Being overweight or obese (based on waist circumference and body mass index)
- Poor nutrition

- Physical inactivity
- Excessive alcohol intake
- Age
- Gender
- Family history
- Diabetes
- Social isolation and lack of social support
- Depression

Absolute risk is the numerical probability of a cardiovascular event (such as a heart attack) occurring within a five-year period. It reflects a person's overall risk of cardiovascular disease (CVD), as opposed to considering risk factors, such as high cholesterol or high blood pressure, in isolation.

Q. What is secondary prevention and when are statins indicated?

A. Secondary prevention is about reducing the risk of a second heart attack among people who have already had a heart attack, or who have established heart disease. Statins are one of the cornerstone treatments in the prevention of further coronary events among this patient group.

Q. In healthy people, what should your cholesterol be?

A. A number of cholesterol measurements are used; you need to visit your GP to have these checked with a blood test. Ideally, total cholesterol should be <4 mmol/L. Low-density lipoprotein cholesterol, also known as LDL cholesterol or unhealthy cholesterol, should be <2 mmol/L. A measure of healthy cholesterol is high-density lipoprotein or HDL cholesterol and this should be >1 mmol/L. We can also measure triglycerides, another type of cholesterol that is unhealthy. Ideally this should be below 2 mmol/L. Non-HDL cholesterol can be measured instead of LDL and triglycerides and may be more effective among diabetic patients. The ideal reading for non-HDL cholesterol is <2.5 mmol/L.

Q. What should my cholesterol be if I've had a heart attack or been diagnosed with heart disease?

A. If you have developed heart disease, it is important to try to achieve the following cholesterol targets:

- LDL cholesterol <1.8 mmol/L
- HDL cholesterol >1 mmol/L
- Triglycerides <2 mmol/L
- Non-HDL cholesterol <2.5 mmol/L

Q. How does high cholesterol lead to heart disease?

A. High levels of cholesterol circulating in your blood lead to build ups in the walls of your blood vessels. This process is called atherosclerosis. Plaques of cholesterol can get larger and they become calcified and hard. The arteries may become narrowed and blood flow to the heart is slowed down or blocked entirely.

If enough blood and oxygen cannot reach your heart due to a narrowed vessel, you may experience chest pain.

Coupled with high blood pressure, a portion of the plaque can become loosened and break off, risking getting lodged elsewhere in the heart and preventing blood flowing through. If the blood supply to a segment of the heart is completely restricted by a blockage, the result is a heart attack.

Q. What are the benefits of treating cholesterol?

A. Very large, multi-centre trials including more than 170,000 people have shown fewer major coronary events among people taking statins to lower their LDL cholesterol.

It was found that statin therapy can safely reduce the 5-year incidence of major coronary events, coronary revascularisation, and stroke by about one fifth per mmol/L reduction in LDL cholesterol. This was found to be largely irrespective of the initial lipid profile or other presenting characteristics.

- Benefit is seen *with every 1.0 mmol/L reduction* in LDL-cholesterol
 - Major coronary events reduced by a quarter (24%)
 - 1 in 5 coronary deaths are prevented (i.e. 20% reduction)
 - Death from any-cause is reduced by 10%
 - Coronary artery surgery and coronary angioplasty is reduced by a quarter (25%) and nearly a third (28%) respectively.

Q. What are the more and less common side effects of statins?

A. The most common side effect is muscle aches and pains which occurs in about 1 in 200 patients. This can be improved by reducing the dose or switching to a different medication which should be discussed with your doctor. Other rarer, more serious side effects are liver and kidney damage. These occur far less, about once in every 500 to 800 patients who take a statin. Fortunately these side effects can be reversed once the medicine is ceased. While there are side effects to all medications, the benefits of taking them far outweigh the risks.

Q. Statins work by lowering my LDL cholesterol, so how can I increase my HDL cholesterol?

A. There are no drugs currently available to raise HDL cholesterol. The most effective way to increase HDL cholesterol as well as lower your overall risk of developing heart disease is with physical activity.

The Heart Foundation recommends at least 30 minutes of moderate-intensity physical activity on five or more days a week. Moderate-intensity activities include walking, cycling and swimming.

Q. How many people have high cholesterol in Australia?

A. The following results are from the Australian Bureau of Statistics [Australian Health Survey Biomedical Results for Chronic Diseases, 2011-12](#) released in August 2013. They show 5.6 million Australian adults (32.8%) have unmanaged high cholesterol.ⁱ The survey also showed:

- A further 3.3 million Australians at risk of having high cholesterol with readings between 5 mmol/l to 5.5mmol/l
- There are 1.3 million Australian adults with both unmanaged high cholesterol and unmanaged high blood pressure
- That 46.1% of Australians aged 45 to 64 have high cholesterol
- High cholesterol is higher among smokers (38.1%), people overweight/obese (37.3%), those with high blood pressure (40.8%) and those living in rural areas (36.7%)
- The prevalence of high cholesterol among adults is highest in Tasmania (39.4%), South Australia (35.0%), and Western Australia (34.7%).

Q. If I swap one food with another, how much will I reduce my cholesterol by?

A. Unfortunately there is no specific information, or chart that allows us to reliably say how much we can reduce a persons cholesterol by swapping from one type of food (eg. pastries, cakes, sweet biscuits) to leaner foods such as oat snacks.

In general what we can say, if you are over the age of 45, and you reduce your cholesterol by 2 points (2 mmol/L), then you halve the risk of having a major heart event or stroke over the next 5 years.

Q. What about plant sterol enriched foods – can they help lower my cholesterol?

A. Plant sterols and cholesterol have a similar chemical structure. Due to their similarity, plant sterols and cholesterol compete for absorption in the small intestine, so the plant sterols actually stop the cholesterol from being absorbed.

Q. What is the Heart Foundation doing about the cost of statins?

A. Statins are a very effective way of reducing the risk of having a heart attack. However, Australia currently pays around five times the average price paid for statins in other member countries of the Organisation for Economic Co-operation

and Development (OECD). For instance, compared to the wholesale price that the New Zealand government pays for statins, the cost to Australia represents a difference of \$100million a year.

The most important issue is to ensure that the Australians who need this medication are prescribed it and those who are less at risk and don't require it are not. There are too many Australians who have had a heart attack that are not on this lifesaving medication.

The Heart Foundation has previously called for the Federal Government to negotiate a more efficient wholesale price, which would mean more savings for the Government. These savings could be reinvested into the treatment and prevention of heart disease.

Q. How adherent are patients to their statins?

A. Adherence to prescribed therapies in chronic disease is a major problem. Almost 50% of people with high cholesterol levels have been prescribed or directed to take cholesterol medications. Among patients prescribed a statin, approximately half will stop taking them within six months of starting the treatment. Unfortunately, it is also known that poor adherence to a medicine regimen, including a statin, after a heart attack results in a two to sixfold increase in the risk of death within a year of the event.

Q. Does the Heart Foundation receive funding from pharmaceutical companies?

A. The Heart Foundation convenes a Pharmaceutical Roundtable (the Roundtable), which brings together members of leading pharmaceutical companies to help improve the cardiovascular health of Australians.

These companies pay a membership fee which is invested into research and projects. The roundtable members can provide ideas and input the development of new evidence based consumer health education and prevention projects together with the Heart Foundation, with a particular focus on Quality Use of Medicines (QUM) and adherence to medications.

The projects and research are then completed independently of the pharmaceutical companies with the assistance of external experts.

Q. How and why does the Heart Foundation support Research?

A. The Heart Foundation believes a strong cardiovascular research community is critical to providing optimal understanding of heart health and therefore proud to fund world class research. In 2013 we were able to direct \$13.5 million in funding to support 195 researcher awards. Since the Heart Foundation's establishment in 1959 it has invested the equivalent of \$370 million towards outstanding cardiovascular

research, which has allowed the Heart Foundation to be instrumental in fostering advances such as the development of the pacemaker, the introduction of heart transplant surgery and the national Triple Zero '000' hotline for emergencies.

The Heart Foundation Research Program supports high quality research into the causes, diagnosis, treatment, management and prevention of cardiovascular disease, including heart disease, stroke and blood vessel disease.

In determining which research to support, the Heart Foundation oversees a rigorous peer review process involving assessment by independent, external reviewers. All funding decisions are scrutinised by an external committee to ensure that all aspects of the peer review process are consistent, transparent and ethical.

The Heart Foundation is a charity supported by the community. We receive some financial support from commercial and health industry partners, however the peer review system, management and operation remain completely independent of any external influence.

All researchers who publish material on their studies are required to declare any conflicts of interest, including funding sources, that might influence the delivery and outcomes of their work.

As an evidence based organisation, the Heart Foundation's recommendations are based on the best available scientific evidence and research from around the world, and not just that funded by the Heart Foundation.

ⁱ High cholesterol is over 5.5mmol/l.