Heart disease and food

Summary
- Diet is an important risk factor in coronary heart disease.
- Food-related risk factors include obesity, high blood pressure, uncontrolled diabetes and a diet high in saturated fats.
- A low-saturated fat, high-fibre, high plant food diet can substantially reduce the risk of developing heart disease.

Heart disease is the leading cause of death in Australia, causing nearly 15 per cent of all deaths in 2011.

Food is directly involved in many of the risk factors for coronary heart disease. Paying attention to what you eat is one of the most important preventative measures you can take.

Characteristics of heart disease
Coronary heart disease is characterised by a narrowing of the arteries (atherosclerosis). Fatty deposits, or plaques, cling to the artery walls and can clog the arteries, making it more likely that a blood clot will form.

A heart attack occurs when a blood clot blocks one of the arteries of the heart. This prevents the flow of blood, cuts off the oxygen supply to the heart and damages or kills the heart cells.

Risk factors for heart disease
A number of factors are associated with the build-up of fatty deposits in the coronary arteries, including cigarette smoking, lack of physical activity and a family history of the disease.

Other risk factors include:
- **Type of fat eaten** – saturated and trans fats increase blood cholesterol and heart attack rates. Polyunsaturated and monounsaturated fats lower the risk of heart attacks.
- **Obesity** – many overweight and obese people have diets high in fat, particularly saturated fat. A person who carries the bulk of their body fat around their stomach (an ‘apple’ shaped body) is at greater risk of heart disease than someone whose body fat tends to settle around their bottom, hips and thighs (a ‘pear’ shaped body).
- **High blood pressure (hypertension)** – blood pressure is the amount of pressure within the arteries (blood vessels that carry blood around the body). High blood pressure, or hypertension, means that the pressure in the arteries is higher than normal. This may be because the arteries are less elastic, there is more blood volume, or more blood is being pumped out of the heart.

Uncontrolled diabetes and impaired glucose tolerance
In healthy people, insulin keeps the blood sugar level relatively constant. However, for those vulnerable to type 2 diabetes, the body gradually loses its sensitivity to insulin. This leads to chronically elevated blood sugar levels, also known as impaired glucose tolerance.

Uncontrolled diabetes can damage the artery walls and contribute to coronary heart disease. People who are obese are more likely to develop type 2 diabetes than people of normal weight. Australian Aboriginal and Torres Strait Islander peoples have much higher rates of diabetes than other Australians, even at lower body weights.

Cholesterol levels and dietary fats
Cholesterol is a fat that is crucial to many metabolic functions and is an essential part of all the body’s cell membranes. Cholesterol is produced in the body from the food we eat and is produced in the liver.
Blood lipids (fats) that contain cholesterol include low density lipoprotein (LDL) and high density lipoprotein (HDL). LDL cholesterol can lead to plaque forming on arteries. HDL cholesterol helps the body to remove cholesterol from the body and makes it harder for plaque to form in the arteries.

Saturated and trans fats in the diet tend to increase LDL cholesterol in the blood. Common sources of saturated fats include animal products (butter, meat fat, beef, lamb, chicken skin and full cream dairy foods), and processed foods like pastries and biscuits.

Trans fatty acids and saturated fats, such as elaidic acid, are formed when monounsaturated or polyunsaturated vegetable oils are hydrogenated and hardened to form margarines. This applies particularly to the harder vegetable fat and shortening used by the food industry in products such as cakes and biscuits.

Most monounsaturated and polyunsaturated table margarines sold in Australia have very low levels of trans fatty acids. The small amounts present in table margarines are not significant and do not negate the benefits of substituting these margarines for saturated fats like butter. Trans fatty acids also occur naturally in some meats, butter and dairy products. These trans fats tend to increase the LDL cholesterol.

Foods that help prevent heart disease
There is no 'magic' food to decrease the risk of developing heart disease. You need to eat a healthy diet and have plenty of exercise. High-salt diets increase blood pressure and the risk of heart attack and stroke.

Most of us consume more than ten times the amount of salt we need to meet our sodium requirements (salt contains sodium and chloride). However, there is evidence that plant foods – especially wholegrain cereals, legumes, nuts, fruits and vegetables – may decrease the risk of heart disease.

The foods that best protect against heart disease include:

- **oily fish** – such as mackerel, sardines, tuna and salmon which contain omega-3 fatty acids. This type of fat has been shown to decrease triglycerides and increase HDL-cholesterol levels, improves blood vessel elasticity and thins the blood, making it less likely to clot and block blood flow
- **some vegetables oils** – such as corn, soy and safflower, which contain omega-6 fatty acids, and those containing omega-3 fatty acids such as canola and olive oil. All of these can help to lower LDL cholesterol when used instead of saturated fats such as butter
- **fruit and vegetables** – antioxidants in fruit and vegetables offer protection against heart disease. Fruit and vegetables are also important sources of folate, which helps lower the blood levels of the amino acid homocysteine, which appears to be linked to an increased risk of heart disease
- **fibre** – wholegrain cereals and fruit and vegetables
- **unrefined carbohydrate sources with a low glycaemic index** – foods such as wholegrain breads and breakfast cereals, legumes, certain types of rice and pasta are important for people prone to diabetes because they help keep blood sugar levels in check
- **legumes and soy** – soy protein has been shown to lower LDL cholesterol levels, especially if blood cholesterol levels are high
- **nuts and seeds** – they should be eaten in small quantities, as they are high in kilojoules
- **tea** – some evidence suggests that the antioxidants in tea can help prevent the build-up of fatty deposits in the arteries. The antioxidants may also act as an anti-blood clotting agent and improve blood vessel dilation to allow increased blood flow
- **alcohol** – it is thought that a moderate intake of alcohol may have some potential health benefits. For example, some types of alcohol (such as red wine) may contain protective factors like antioxidants, although this is still being researched. Alcohol also increases the HDL ('good') cholesterol and this helps clear cholesterol from the body. However, a high intake of alcohol increases blood pressure and also tends to increase triglycerides (a type of fat) in the blood, increasing the risk of heart disease. Current guidelines for alcohol intake in Australia recommend no more than two standard drinks per day for men and one for women to reduce the risks of harm related to alcohol
- **foods containing vitamin E** – some studies indicate that vitamin E acts as an antioxidant, helping to protect

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against ‘bad’ cholesterol. Good sources of vitamin E include avocados, dark green vegetables, vegetable oils and wholegrain products. It is better to eat foods containing vitamin E rather than take supplements, which do not have the same protective effects

- **garlic** – a compound in fresh garlic called alliin has been found in some studies to lower blood cholesterol
- **foods enriched with plant sterols** – a daily intake of 2–3 g of phytosterols/stanols lowers LDL cholesterol levels by approximately ten per cent in healthy people and in those with high cholesterol and those with diabetes. This intake can be achieved by the consumption of two to three serves of phytosterol-enriched foods like margarine spreads, reduced-fat yoghurts, milk and breakfast cereals.

**Help reduce your risk of heart disease**
To substantially reduce your risk of developing coronary heart disease:

- Avoid fried fast food and processed foods containing vegetable shortening.
- Choose a variety of oils (extra virgin olive oil, canola, peanut) and foods containing natural fats (nuts, seeds, avocado, olives, soy, fish).
- Switch to low-fat or non-fat dairy products.
- Increase the amount and variety of plant foods consumed – eat more unrefined vegetables, fruits and wholegrain cereals. Reduce intake of refined sources of carbohydrates with higher glycaemic indices.
- Include legumes (like baked beans, soybeans, lentils and tofu) in your diet.
- Have a handful of a variety of raw, unsalted nuts on most days of the week, especially walnuts and almonds.
- Eat oily fish at least once per week.
- If you drink alcohol, have no more than two drinks per day.
- Trim all visible fat from meat.
- Remove poultry skin and eat only the meat.
- Avoid added salt at the table and cooking and salty foods. Check the sodium content of foods and choose the lowest sodium products.

**Include physical activity**
Exercise is vital to reduce your risk of heart disease. Walking at least 30 minutes each day at a vigorous pace (at least 4 km per hour) reduces heart disease risk by 30 per cent. How do you measure how briskly you are walking?

Rule of thumb – walk as fast as you can, so you can still talk but not sing.

If you are over 40, have a heart condition or haven’t exercised for a long time, see your doctor before you start any exercise program.

**Where to get help**

- Your doctor
- Dietitians Association of Australia Tel. 1800 812 942