

heart disease & diabetes

People with type 2 diabetes often have 'abnormal' levels of blood fats (cholesterol and triglycerides). Not only are the blood fat levels different to those of a person without diabetes, the cholesterol also tends to 'behave' differently.

Diabetes is diagnosed when the levels of glucose in the blood are too high. Glucose (a form of sugar) is the main source of energy for the body. It comes mainly from foods containing carbohydrates but can also be made by the liver. Insulin, a hormone produced by the pancreas, circulates in the blood. Insulin helps lower blood glucose levels by moving glucose from the bloodstream into the cells. Once glucose is inside the cells, it can be used for energy.

Diabetes develops when:

- > The pancreas is unable to make insulin (eg: type 1 diabetes)
- > There is insufficient insulin produced and in many cases the insulin is unable to work effectively (eg: type 2 diabetes)

In all types of diabetes, glucose levels build up in the blood, which may then lead to health problems.

How does diabetes relate to heart disease?

People with diabetes are 3 to 4 times more likely to develop cardiovascular disease (including heart attack and stroke) than those who do not have diabetes.

The LDL (bad) cholesterol particles in people with diabetes are often more dense and therefore more likely to cause blockage of the blood vessels than the type of LDL cholesterol particles found in a person who does not have diabetes. This abnormal cholesterol in diabetes is a contributing factor in the up to six-fold increase in atherosclerosis that people with diabetes experience.

Over time, there is a build-up of fatty material on the blood vessel walls (called atherosclerosis) that restricts blood flow. This may lead to blockage of the major vessels supplying blood to the heart and brain, causing a heart attack or stroke.



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What is the risk of this happening to me?

- Around 75% of people with diabetes die from cardiovascular disease, including heart attack and stroke.
- People with diabetes are up to six times more likely to suffer from atherosclerosis than people without diabetes.
- People who have pre-diabetes also have an increased risk of heart disease. Pre-diabetes (impaired glucose tolerance [IGT] or impaired fasting glucose [IFG]) is a condition where blood glucose levels are elevated above normal but have not yet reached the levels at which diabetes would be diagnosed.

How would I know if I had heart disease?

Often people do not know they have heart disease until they develop symptoms like chest pain, shortness of breath, dizziness or excessive fatigue when walking or exercising. Some warning symptoms may be arm or jaw discomfort, indigestion, weakness or nausea. If you think you are having a heart attack, phone 000 immediately.

People with diabetes may have minimal symptoms of heart disease such as mild or atypical/unusual chest pain, or no symptoms at all. However, as having diabetes puts you at risk of heart disease even if you have 'normal' looking cholesterol and no symptoms, talk to your doctor about other risk factors you may have. These can include high blood pressure, excess weight or smoking, all of which may increase the likelihood of you having or developing heart disease. Your doctor will be able to assess these issues in association with your diabetes and offer advice about how to reduce your risk.

How can I reduce my risk of heart disease?

If you have diabetes, the following can help reduce your risk of developing heart disease:

• **Be physically active**

Regular physical activity combined with weight loss can prevent or delay the onset of type 2 diabetes, reduce blood pressure and help to reduce the risk of a heart attack and stroke. It is likely that any type of physical activity of equivalent intensity and duration – whether sports, household work, gardening or work-related physical activity – will help. Aim to do at least 30 minutes of moderate intensity physical activity on most, if not all, days of the week. Moderate intensity is when your breathing increases noticeably – a 'little bit of puff'. If you have had diabetes for some years or have been physically inactive for a while, check with your doctor before beginning a physical activity program.

• **If you are overweight, try to lose weight**

Being overweight, especially around the middle, is a major risk factor for heart disease, and is strongly linked to type 2 diabetes. Even a 5% weight loss (eg: a loss of 5kg in a 100kg person) reduces the risk of heart disease.

- **Don't smoke**

Smoking is a very important risk factor for sudden cardiac death, and smokers have double the risk of heart disease compared with non-smokers. Stopping smoking can be a difficult task however there are many programs to help you. Call Quitline on 137 848 and also talk to your doctor about other available options.

- **Keep blood fats at target levels**

Problems with the levels of fats in the blood frequently occur in people with type 2 diabetes. Usually in people with diabetes there are more or higher LDL (bad) cholesterol particles that are stickier and are more likely to cause a blockage. In addition, there are usually low levels of HDL (good or protective) cholesterol, and high levels of triglycerides in the blood. Statins (tablets for high cholesterol) have been shown to control blood fats and are important in reducing the risk of heart disease.

- **Manage high blood pressure**

High blood pressure is common in people with diabetes. For people with high blood pressure and diabetes, the risk of heart disease more than doubles and is greater than when either condition is present alone. Maintaining fitness with regular physical activity combined with some weight loss can help reduce high blood pressure. Blood pressure lowering medications, often in combination, are frequently required.

Here are some tips

- **Adopt a healthy eating plan** including a low saturated fat diet. This means minimising fats from animal sources (eg butter, fatty meats, full fat dairy products) as well as the vegetable fats in commercial baked products (eg coconut oil and palm oil). Refer to page 4 and the information sheet *Food Choices for People with Diabetes* for more about healthy eating.
- **Be physically active** and lose some weight: These are important ways to help improve your blood fats.
- **Medications** to lower cholesterol and triglyceride levels may also be required. There are different medications, called statins, cholesterol absorption inhibitors and fibrates, which target different blood fat problems. While statins have been used to treat abnormal blood fats for some years, it is now known that they also reduce the risk of heart disease and death in people at risk (such as people with diabetes) who have normal blood fats. This is achieved mainly because statins reduce LDL cholesterol.
 - > As cardiovascular disease is the leading cause of death in people with diabetes, statins are usually required to manage cholesterol levels to aid in significant reductions in cardiovascular risk.
 - > For best management of blood glucose levels, many people with diabetes require tablets and/or insulin.
 - > Medication is also commonly needed to help lower high blood pressure and often more than one blood pressure lowering agent is required.
 - > Ask your doctor about aspirin – in some cases it is used to help reduce the risk of heart attack.
 - > Always take all medication as prescribed and if you have any questions or concerns, ask your doctor or pharmacist.

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What should I be eating?

General guidelines for people who have diabetes are listed below. For a comprehensive, individualised eating plan, you need to see a dietitian.

- Choose a variety of foods including vegetables, fruit, wholegrain breads and other wholegrain cereals, low fat dairy products, lean meat, skinless chicken and fish.
- Limit saturated fat and reduce overall fat intake to a moderate level.
- Eat high fibre carbohydrate foods which have a lower amount of rapidly absorbed carbohydrate, or what is described as a lower Glycemic Index (GI).
- Be aware that some sugar can be included in a healthy eating plan.
- Eat regular meals and snacks throughout the day, especially if taking insulin or tablets.
- If you drink alcohol, it is generally acceptable to have two standard drinks per day.* It's best to enjoy your drinks with a meal or some carbohydrate-containing food and try to include alcohol-free days. A standard drink is equivalent to 285ml regular beer, 425ml low alcohol beer, 100ml wine, 60ml fortified wine or 30ml spirits.

* NHMRC, Australian Guidelines to Reduce Health Risks from Drinking Alcohol (2009).

To find an accredited practising dietitian (APD) contact:

The Dietitians Association of Australia on 1800 812 942 or www.daa.asn.au.

For more information about diabetes or heart disease contact:

- Your State or Territory Diabetes Organisation on 1300 136 588 or go to their website as listed below.
- National Heart Foundation Heartline on 1300 362 787 or www.heartfoundation.org.au

Would you like to join Australia's leading diabetes organisation?

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For more information phone **1300 136 588** or visit your State/Territory Organisation's website:

ACT	www.diabetes-act.com.au	NSW	www.australiandiabetescouncil.com
NT	www.healthylivingnt.org.au	QLD	www.diabetesqueensland.org.au
SA	www.diabetessa.com.au	TAS	www.diabetestas.com.au
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