Diabetes type 2

Summary

- Type 2 diabetes is more common in people who don't do enough physical activity, and who are overweight or obese.
- Type 2 diabetes can often be prevented or delayed with early lifestyle changes, however there is no cure.
- Common symptoms include being more thirsty than usual, passing more urine, feeling tired and lethargic, slow-healing wounds, itching and skin infections and blurred vision.
- People with pre-diabetes can reduce their risk of developing diabetes by increasing their physical activity, eating healthily and losing weight (if they are overweight).

Diabetes is a condition where there is too much glucose (a type of sugar) in the blood. The body uses glucose as its main source of energy. Glucose comes from foods that contain carbohydrates, such as potatoes, bread, pasta, rice, fruit and milk. After food is digested, the glucose is released and absorbed into the bloodstream.

The glucose in the bloodstream needs to move into body tissues so that cells can use it for energy. Excess glucose is stored in the liver, or converted to fat and stored in other body tissues.

Insulin is a hormone made by the pancreas, which is a gland located just below the stomach. Insulin opens the doors (the glucose channels) that let glucose move from the blood into the body cells. It also allows glucose to be stored in the liver and other tissues. This is part of a process known as glucose metabolism.

There are two main types of diabetes – type 1 and type 2. Type 1 diabetes is an autoimmune condition where the body's immune cells attack the insulin-producing cells. As a result, people with type 1 diabetes cannot produce insulin and need insulin injections to survive.

Type 2 diabetes is the most common form of diabetes, and affects 85 to 90 per cent of all people with diabetes. While it usually affects mature adults, younger people are also now being diagnosed in greater numbers, as rates of obesity and people being overweight increase. Type 2 diabetes used to be called non-insulin dependent diabetes or mature onset diabetes.

Gestational diabetes (GDM) is diabetes that occurs in and is diagnosed during pregnancy. Gestational diabetes usually goes away after the baby is born. However, women with GDM are at higher risk of getting type 2 diabetes later in life.

Around 7.4 per cent of Australians aged 25 years or older have diabetes. The risk of diabetes increases with age: from 2.5 per cent in people aged between 35 and 45 years to 23.6 per cent in those over 75. Aboriginal people have one of the highest rates of type 2 diabetes in the world.

Type 2 diabetes is sometimes described as a 'lifestyle disease', because it is more common in people who don't do enough physical activity, and who are overweight or obese. It is strongly associated with high blood pressure, high cholesterol and an 'apple' body shape, where excess weight is carried around the waist. Type 2 diabetes often runs in families.

With type 2 diabetes, the cells don't respond to insulin properly (insulin resistance) and the pancreas does not produce enough insulin for the body's increased needs. If the insulin cannot do its job, the glucose channels do not open properly. Glucose builds up in the blood instead of getting into cells for energy.

High blood glucose levels over time can cause damage to various parts of the body. These are referred to as diabetes complications.

Research shows that type 2 diabetes can often be prevented or delayed with early lifestyle changes. However,

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there is no cure for type 2 diabetes.

**Symptoms of type 2 diabetes**

Type 2 diabetes often has no symptoms. About half of those people who have type 2 diabetes have not yet been diagnosed. Even if symptoms are present, they are often not recognised or are attributed to other reasons, such as being busy or ‘getting older’.

In many cases, blood glucose levels can be very high by the time a person sees their doctor. Common symptoms include:

- being more thirsty than usual
- passing more urine
- feeling tired and lethargic
- slow-healing wounds
- itching and skin infections
- blurred vision.

**Risk factors for type 2 diabetes**

While there is no single cause of type 2 diabetes, there are well-known risk factors. Those most at risk of developing type 2 diabetes include:

- people with pre-diabetes
- Aboriginal and Torres Strait Islander people aged 35 and over
- people aged 35 and over who are Pacific Islanders, Maori, Asian (including the Indian subcontinent, or of Chinese origin) Middle Eastern, North African or Southern European
- people aged 45 and over who are obese or overweight, have high blood pressure or have a first-degree relative with type 2 diabetes
- all people with cardiovascular disease such as heart attack, angina, stroke, or narrowed blood vessels
- women with polycystic ovary syndrome (PCOS) who are overweight
- women who have had gestational diabetes
- people aged 55 or over
- people with a first-degree relative with type 2 diabetes
- people taking certain antipsychotic medication or corticosteroid medication.

Lifestyle risk factors for type 2 diabetes include:

- being overweight or obese, especially around the waist
- low levels of physical activity, including more than two hours of television watching per day
- unhealthy eating habits, such as regularly choosing high-fat, high-sugar, high-salt or low-fibre foods
- cigarette smoking.

You can assess your risk of developing type 2 diabetes by completing the [Australian type 2 diabetes risk test](http://betterhealth.vic.gov.au).

People at risk need to have a laboratory blood glucose test (not using a portable blood glucose meter) ordered by their doctor to check if they have diabetes. It is important not to wait for symptoms to develop, as these may not appear until the blood glucose is quite high.

**Diagnosis of diabetes**

There are four types of blood test for diabetes:

- fasting glucose blood test
- oral glucose tolerance test
- random blood glucose test
- glycosylated haemoglobin (HbA1c) test.
The **fasting blood glucose test** is the most common diagnostic test for diabetes. For this **test**, blood glucose levels are checked after fasting for at least eight hours but no more than 16 hours. You can drink water during this time, but should strictly avoid any other type of drink.

If your fasting blood glucose level is in the diabetes range but you have no symptoms of diabetes, it is recommended that a further test is done to confirm diabetes. Your doctor may recommend a test known as an oral glucose tolerance test (OGTT).

The OGGT test involves:
- fasting overnight
- a fasting blood glucose test
- a 75 gram glucose drink
- blood glucose tests at one and two hours after the drink.

A random blood glucose test does not require fasting and can be performed at any time of the day.

The HbA1c test gives an average of your blood glucose levels over the past 10–12 weeks. You do not need to fast for it.

Where a blood test shows results in the diabetes range but the person shows no symptoms of diabetes, a second pathology test is needed to confirm a diagnosis of diabetes.

**Accuracy of diabetes test results**

Depending on the test used, the level of blood glucose can be affected by many factors including:
- eating or drinking
- taking medications that are known to raise blood glucose levels, such as oral contraceptives, some diuretics (water pills) and corticosteroids
- physical illness or surgery that may temporarily alter blood glucose.

If you think any of the above may have influenced your result, then it is important to discuss this further with your doctor.

If you don't have diabetes, but your glucose levels are higher than normal, this is called pre-diabetes and it includes one or both of:
- impaired fasting glucose – IFG (fasting blood glucose level is raised)
- impaired glucose tolerance – IGT (blood glucose level is raised after the glucose drink but not high enough to be diabetes).

If pre-diabetes is detected, at this stage diabetes can be delayed or prevented in some people. People with pre-diabetes can reduce their risk of developing diabetes by:
- increasing their physical activity
- seeing a dietitian to develop a healthy eating plan
- losing 5–10 per cent of their body weight, if overweight.

**Management of type 2 diabetes**

The aim of diabetes treatment is to keep you as well as possible, and reduce the risk of damage to various parts of your body that can happen over time.

**Managing blood glucose levels**

Maintain blood glucose levels within the recommended range. You can help keep your blood glucose levels as near as possible to normal by:
- eating healthily
- achieving and maintaining a healthy weight
- doing regular physical activity, including sitting less.
Glucose-lowering medications, and insulin, may also be needed to manage blood glucose levels.

If you are taking diabetes tablets or insulin, the recommended blood glucose levels are 6–8 mmol/L before meals, and 6–10 mmol/L two hours after meals. Keeping your blood glucose levels within the target range can help prevent long-term problems that can affect your heart, blood vessels, eyes, kidneys and nerves.

Managing blood pressure and cholesterol
Keeping your blood pressure and cholesterol within the recommended range is very important to help prevent long-term problems, especially to your heart, blood vessels and kidneys.

Regular diabetes checks of your eyes, feet (blood supply and nerves), heart, blood pressure, kidneys and long-term blood glucose (HbA1C) are an important part of diabetes management. Your doctor and diabetes educator will help you arrange these tests.

Your diabetes healthcare team
A lifelong condition like diabetes is best managed with the support of a diabetes healthcare team. You are the most important member of your diabetes team. Other members are your doctor, diabetes educator, dietitian and podiatrist.

Depending on your needs, the team may also include an endocrinologist (diabetes specialist) and other medical specialists such as a kidney specialist, exercise physiologist and counsellor.

Self-care of diabetes
Suggestions to manage your diabetes include:

- Link up with a diabetes team in your area. Your doctor might need to refer you, but this isn't always necessary. Call Diabetes Victoria (Tel. 1300 437 386) to find health professionals in your local area.
- Check your blood glucose levels regularly, as recommended by your doctor or diabetes educator.
- Use any medication strictly as prescribed. Don't make changes to your diabetes medication without talking to your doctor about it first.
- Be physically active as often as you can and sit less. Work out ways that you can keep this going.
- Have a healthy eating plan. Choose healthy foods as well as suitable amounts.
- Keep a positive mental attitude. Seek advice from your doctor, or other organisations such as beyondblue (Tel. 1300 22 4636) or Lifeline (Tel. 13 11 14) if you are anxious or depressed.
- See your doctor if you feel unwell.
- Consider joining a support group.

Where to get help
- Your doctor
- Your diabetes specialist
- Diabetes healthcare team
  - Diabetes Victoria Tel. 1300 437 386
  - beyondblue Tel. 1300 22 4636
  - Lifeline Tel. 13 11 14
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