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. Insulin lowers blood glucose levels by moving glucose from the blood into the muscle cells. It also helps glucose to be stored in the liver and in other tissues.

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.

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.

In Australia, type 2 diabetes affects 85 to 90 per cent of all people with diabetes with over 1 million people registered as having the condition. It usually affects people over the age of 40, however, younger people are being diagnosed in greater numbers. Aboriginal and Torres Strait Islander people are at higher risk for developing type 2 diabetes and also gestational 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.

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

**Symptoms of type 2 diabetes**

High blood glucose levels often cause signs and symptoms. Common signs and symptoms include:

- being more thirsty than usual
- passing more urine
- feeling tired and lethargic
- slow-healing wounds
- recurring infection

- blurred vision.

Some people may have no symptoms and as a result diagnosis may be delayed. Sometimes, even if symptoms are present, they may not be recognised or may just be thought to be due to getting older.

**Risk factors for type 2 diabetes**

There are genetic and environmental risk factors for developing type 2 diabetes.

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 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, 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
- high blood pressure and cholesterol.

You can assess your risk of developing type 2 diabetes by completing the **Australian type 2 diabetes risk test**.

If you are at risk of developing type 2 diabetes, it is strongly recommended that you have a laboratory blood glucose test (not using a portable blood glucose meter) ordered by your doctor to check if you have diabetes. Don’t wait for symptoms to develop, as these may not appear until blood glucose levels are quite high.

**Diagnosis of diabetes**

There are four types of blood tests 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. You need to fast for at least eight hours, but no more than 16 hours, before having this test. 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 OGTT 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.

If a blood test shows results in the diabetes range but you show 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).

Diabetes can be delayed or prevented in some people with pre-diabetes by:
• increasing physical activity
• following a healthy eating plan developed by a dietitian
• losing 5–10 per cent of their body weight, if they are overweight.

Talk to your doctor about how you can reduce your risk of developing diabetes.

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 6–10mmol/L two hours after meals. Blood glucose targets are individualised. Check with your doctor or diabetes educator about the targets recommended for you.

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 GP (doctor)
- Your diabetes specialist
- Diabetes healthcare team
- Diabetes Victoria Tel. 1300 437 386
- beyondblue Tel. 1300 22 4636
- Lifeline Tel. 13 11 14