



## What Is Diabetes?

Diabetes is a serious, chronic disease caused by problems with the production and supply of insulin in the body.

Most of the food we eat is turned into glucose, a form of sugar. We use glucose as a source of energy to provide power for the muscles and cells of the body.

In order for our muscles and other tissues to absorb glucose from our blood, we need a hormone called insulin.

Insulin is made in a large gland behind the stomach called the pancreas. It is released by cells within the pancreas called beta cells. When a person has diabetes, either their pancreas does not produce insulin, or their body cannot use its own insulin effectively.

Without insulin, glucose cannot enter the cells of the body. Instead it accumulates in the blood to high levels and is excreted into the urine through the kidneys. This high level of glucose, or “high blood sugar” is called hyperglycaemia.

Diabetes occurs when the body is unable to keep blood glucose levels within the normal range of 3.5-7.8 mmol/l. Chronically high levels of glucose in the blood cause progressive and irreversible damage to many parts of the body. There is no cure.

### Prevalence

Diabetes is Australia’s fastest growing chronic disease, with around 1050 people diagnosed every week. Around 7.5% of the Australian population has some form of diabetes.

It is estimated that there are now over 1 million people with diabetes in Australia. Diabetes is one of the Federal Government’s six national health priority areas.



## Three Different Diseases

As the common feature of diabetes is high blood glucose, it is often mistakenly thought to be a single disease. There are actually several types of diabetes.

### Type 1 Diabetes

Type 1 (also known as juvenile or insulin dependent) diabetes is one of the most common chronic childhood diseases. It constitutes 10%-15% of all people with diabetes in Australia.

Type 1 diabetes is an 'autoimmune' disease, in which the body's immune system destroys the insulin producing islet cells in the pancreas, removing the body's ability to produce insulin.

People with type 1 diabetes must inject insulin several times a day in order to survive. This form of diabetes usually strikes children and young adults, though it can occur at any age.

While the cause of type 1 diabetes is not fully understood, it is believed to be caused by a combination of genetic and environmental factors.

It cannot be prevented, nor can it be managed by diet or other lifestyle choices alone. With around 140,000 people with type 1 diabetes, Australia has one of the highest rates of the disease in the world and its incidence is increasing.

### Type 2 Diabetes

The most common form of the disease is type 2 diabetes. Also known as non-insulin dependent or adult-onset diabetes, it constitutes 85-90% of all diabetes in Australia. There are an estimated 900,000 people with type 2 diabetes, half of which are undiagnosed. Its incidence is increasing dramatically around the world.

Type 2 is a metabolic disorder, associated with obesity, lack of exercise and poor eating habits. Both genetic and environmental factors also contribute to its development. This form of diabetes usually develops in adults over 45 years and is most common in adults over 55 years of age. In type 2 diabetes, the pancreas still produces insulin, but for unknown reasons, either insufficient insulin is produced or the body cannot use the insulin effectively. It usually develops very slowly over years and there may be no obvious symptoms.

### Gestational Diabetes

Gestational diabetes usually develops in the last half of pregnancy and stops after birth. It is estimated to occur in 3%-8% of pregnancies and its incidence is increasing. It is more common in women over 25 years of age, particularly when there is a history of type 2 diabetes, and in women who are overweight. Some racial groups, including Aboriginal and Torres Strait Islanders, have higher incidence of gestational diabetes. It increases the risk of birth complications and significantly increases the risk of developing type 2 diabetes in later life.



## Diabetes Treatment

The main goal of diabetes treatment is to keep blood glucose levels within the normal range. The specific type of treatment depends on the type of diabetes a person has:

People with type 1 diabetes depend on up to 6 insulin injections a day to survive. They must also monitor their blood glucose levels 4-6 times a day while rigorously following a healthy diet and exercising regularly.

Type 2 diabetes is treated with dietary changes, regular exercise and weight control. If blood glucose levels remain high, tablets or in some cases insulin, is used. Gestational diabetes is treated with insulin injections to normalize blood glucose levels during the pregnancy.

## Complications of Diabetes

Over time, high blood glucose levels cause permanent damage to blood vessels and the tissues and organs they supply. It can cause:

**Kidney Disease:** Diabetes is the leading cause of kidney failure in Australia and people with

type 1 diabetes are 4 times more likely to have kidney disease than people without diabetes.

**Cardiovascular Disease:** People with diabetes are 5 times more likely to have heart disease and they develop it at a younger age.

**Blindness:** Diabetes is the leading cause of blindness and visual impairment in adults aged 20-69 years.

**Nerve Damage:** About 60-70% of people with diabetes have mild to severe forms of nerve damage, leading to loss of sensation in hands and feet, leg ulcers and impaired function of organs such as the heart, eye, stomach, bladder and penis.

**Amputation:** Diabetes is the most common cause of amputation that is not the result of an accident.

**Shortened Life:** Life expectancy for people with diabetes is shortened by an average of 15 years.

**Death:** Diabetes is the sixth highest cause of death in Australia.