



Type 1 Diabetes

Type 1 diabetes (also known as juvenile or insulin-dependent diabetes), is a life-long autoimmune disease that affects over 140,000 children and adults in Australia.

What Is Diabetes?

Diabetes is a serious, chronic metabolic disease that destroys the body's ability to manufacture insulin – a hormone necessary for the body to convert food into energy. There are two main types of diabetes:

Type 1 diabetes is a life-long autoimmune disease. It usually begins in childhood or early adulthood, although it can occur at any age. It can strike infants as young as 8 weeks old. People with type 1 diabetes must take up to 6 insulin injections every day for the rest of their lives, just to stay alive.

Type 2 diabetes (also known as non-insulin dependent or adult onset diabetes) generally occurs in people over 45. It can usually be managed through diet, exercise and weight control, but oral medication or insulin may be required in some cases.

What Causes Type 1 Diabetes?

In type 1 diabetes, the immune system mistakenly turns on itself, destroying the beta cells within the pancreas and removing the body's ability to produce the hormone insulin. Insulin allows the body to process sugar to create energy. In untreated diabetes, the body literally starves because it cannot process food.

Symptoms of type 1 diabetes appear rapidly in days or weeks. Warning signs include extreme thirst, frequent urination, constant hunger, blurred vision, sudden weight loss, nausea, vomiting, infections and extreme tiredness. If not diagnosed and treated, a person can lapse into a life-threatening coma.

Some 80% of people diagnosed with type 1 diabetes have no family history of the disease. While there is a genetic tendency towards diabetes, it is not inevitable. The disease appears to be triggered by environmental influences, however the exact factors which



trigger the autoimmune mechanism that ultimately leads to type 1 diabetes remain unclear.

Incidence & Prevalence

- Nearly 1 million people in Australia suffer from diabetes. Around 140,000 of these have type 1 diabetes.
- One of the most common chronic diseases in children, it occurs more frequently than cancer, cystic fibrosis, multiple sclerosis and muscular dystrophy.
- Most newly diagnosed cases are in people less than 15 years old.
- In 2004 there were 1856 Australians diagnosed with type 1 diabetes
- Incidence is increasing at 3.2% a year.
- The incidence of type 1 diabetes has almost doubled in Australia over the past five years. We now have one of the highest rates in the world.
- In Australia, around 95% of the diabetes found in children is type 1.

Insulin is Not a Cure!

Many people believe that insulin is a cure for diabetes. While insulin allows a person to stay alive, it does not cure diabetes nor does it prevent its eventual and devastating effects, including kidney failure, blindness, nerve damage, amputations, heart attack and stroke.

Complications of Diabetes

On the outside, people with type 1 diabetes look healthy. However, diabetes ravages almost every organ in the body. A majority of people who have had type 1 diabetes for 20 years will suffer from health problems, which include:

Kidney Disease

- Diabetes is the leading cause of kidney failure. Over 40% of people with type 1 diabetes develop severe kidney disease by the age of 50.
- People with type 1 diabetes are 4 times more likely to have kidney disease than people without it.

Diabetic Eye Disease

- Diabetes is the leading cause of blindness and visual impairment in people aged 20-69 years.
- Prevalence of eye disease increases dramatically with duration of diabetes.
- People with diabetes are 5 times more likely to become blind, 6 times more likely to have cataracts and 4 times more likely to have glaucoma 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.
- They are 2-4 times more likely to have heart disease or a stroke.
- Heart disease is present in 75% of diabetes-related deaths.

Nerve Damage

- About 60-70% of people with diabetes have mild to severe forms of nervous system damage.
- 30% of men with diabetes suffer from impotence.



Amputation

- Diabetes is the most common cause of amputation that is not the result of an accident. It is responsible for 60% of non traumatic amputations.
- Approximately 1 in every 100 people with diabetes has had an amputation

Reduced Quality of Life

- People with diabetes have a 20-35% lower quality of life than people without the disease.
- They are more susceptible to many other illnesses and once ill, generally have a worse prognosis than people without the disease.

Shortened Life, Death

- Life expectancy is shortened on average by 15 years.
- Diabetes is the sixth leading cause of death in Australia and is the underlying or associated cause of death in 8% of deaths in Australia.
- These alarming problems occur in spite of modern medical and pharmaceutical technology to treat and manage diabetes. Young people with diabetes suffer most as they have a lifetime of the disease and all the problems it creates.

Treating Type 1 Diabetes

The goal of diabetes management is to keep blood glucose levels as close to the normal range as possible, as this reduces the risk of developing complications. In reality, this is difficult to achieve.

To stay alive, people with type 1 diabetes must take multiple insulin injections daily and test their blood sugar by pricking their fingers for

blood four or more times each day. While trying to balance insulin injections with food intake and exercise, people with type 1 diabetes must be constantly prepared for potential hypoglycaemic (low blood sugar) and hyperglycaemic (high blood sugar) reactions, which can be life threatening.

A person with type 1 diabetes endures over 14,500 injections and over 20,000 blood glucose tests in 10 years with the disease.

Life with type 1 diabetes is not normal

Insulin injections and blood tests are a daily fact of life. What people with type 1 diabetes eat, or fail to eat, is always a concern, as is their level of physical exertion.

Children have to adjust everything they do. Simple things – like a birthday party, playing sport or a school excursion – require careful planning. It places a tremendous burden on patients and their families and exacts a high psychological and emotional toll.

They face the knowledge that even the best care cannot prevent eventual, serious complications. Long before they get old they are forced to face the possibility of their own mortality.

Diabetes Costs Us All

In both human and economic terms, diabetes is one of our country's most costly diseases. Despite its prevalence, seriousness and great human and financial cost, research has been under-funded.

Although people with type 1 diabetes comprise only 10% of the diabetic population, they



account for 42% of the overall cost of diabetes to Australia. A person with diabetes incurs medical costs between two and five times greater than a person without diabetes, and much of this expense is borne by the community.

Diabetes is estimated to cost the Australian community billions of dollars per year. In contrast, the combined investment in diabetes research each year is estimated at around \$35 million.

As the disease usually affects people at a young age, there is a life-long burden on individuals and their families, imposed by the demands of disease management, care for deteriorating health and the tragedy of a shortened life span.