

Diabetes

What is diabetes?

Diabetes is a condition where the level of sugar in the blood is not controlled properly. This sugar takes the form of glucose. When a food containing carbohydrates is eaten, the body converts the carbohydrate to glucose during digestion. Diabetes occurs when the system which controls the amount of glucose in the blood no longer works effectively. Too much sugar ends up in the blood, and not enough gets into other cells in the body for them to use it for energy.

A hormone called insulin (made by the pancreas) is responsible for transferring the glucose from the bloodstream into the body cells. When a person develops diabetes, the body produces either no insulin, or the insulin that is produced cannot transfer glucose from the blood into the body cells. The body instead tries to reduce the amount of glucose in the bloodstream by passing it out in the urine. The following symptoms are likely if blood glucose levels are too high:

- passing large amounts of urine
- being extremely thirsty and drinking lots of fluids
- being tired
- blurred vision
- frequent skin infections and slow healing

Normal blood glucose levels range between 3.5 to 8.0 mmol/L. A doctor can diagnose diabetes by doing some simple tests. For example, having a random blood glucose level greater than 11.1 mmol/L or a fasting level greater than 7.0 mmol/L indicates diabetes. Once diabetes has been diagnosed it is present for life, even if the person has good blood glucose control.

Diabetes control is important to prevent long term complications such as:

- heart and circulation problems
- infections
- kidney disease
- eye problems
- nerve damage to the lower limbs

Type 1 and Type 2 diabetes

The two main types of diabetes are called Type 1 diabetes and Type 2 diabetes.

Type 1 diabetes	Type 2 diabetes
Affects less than 1% of all Australians	Affects 7.5% of all Australians over the age of 25 years
Usually develops in people younger than 30 years of age	Commonly occurs in people over 40 years of age who are overweight and/or have a family history of type 2 diabetes
The pancreas produces no insulin	The body is unable to use insulin properly (insulin resistance) and the pancreas may not make enough insulin

Gestational diabetes

Gestational diabetes occurs in around 5% of all pregnant women, usually occurring between 24 and 28 weeks of pregnancy. A variety of hormones are produced by the placenta at this time which may block the effect of insulin. This insulin resistance, results in increased blood glucose levels in the mother and the baby. In the majority of women with gestational diabetes, the diabetes will disappear after the baby is born. However, nearly half of women who have gestational diabetes will go on to develop Type 2 diabetes later in life.

Healthy eating tips for people with diabetes

A healthy diet used in the treatment of diabetes is similar to that which is recommended for all Australians. The following guidelines may also be useful to help prevent the onset of diabetes in those with a family history of the condition:

- 1) Eat plenty of wholegrain breads and cereals, vegetables, legumes and fruits, preferably those with a lower glycaemic index (see overleaf for further information)
- 2) Eat regular meals and healthy snacks over the day, especially if taking insulin or medication
- 3) Have a moderate total fat intake and limit saturated fat (choose lean meats and low fat dairy foods, limit fried takeaway foods, pastries and biscuits)



- 4) Use added sugars in moderation
- 5) Maintain or aim to reduce weight to within the healthy weight range
- 6) Limit alcohol intake

Consult an Accredited Practising Dietitian for individual meal plans, or personal advice on controlling diabetes.

Ways to help control the various types of diabetes

- Follow healthy eating guidelines
- Exercise regularly
- Avoid smoking

For people with Type 1 diabetes daily insulin injections are necessary, however people with Type 2 diabetes may be able to control blood glucose levels with oral medication. Women with gestational diabetes only require insulin injections if blood glucose levels remain high.

The glycaemic index

The glycaemic index is a useful tool to help control blood glucose levels in people with diabetes. The carbohydrates in food are digested and absorbed at different rates. The glycaemic index (GI) is a way of ranking carbohydrate-containing foods from 0-100 based on whether they raise blood glucose levels a lot, moderately or a little. Carbohydrate-containing foods that are digested rapidly produce a dramatic rise in the blood glucose level and are said to have a high glycaemic index (high GI foods). Foods with a GI above 70 are classified as high GI foods. Carbohydrate foods that are digested more slowly produce a more gradual rise in blood glucose levels and thus have a lower glycaemic index (low GI foods). Foods with a GI below 55 fit into this category.

Foods with a low GI help to control blood glucose levels in people with diabetes and should be consumed daily at breakfast, lunch and dinner. Low GI foods can also help to delay hunger and assist with weight loss in overweight people.

Low GI food choices:

- milk and dairy foods – reduced or low fat varieties of milk and dairy foods are the best choices for people with diabetes
- bread – wholegrain or fruit loaf or pumpernickel
- breakfast cereals – traditional porridge, natural muesli or high fibre varieties
- pasta – all varieties
- some varieties of rice – ‘Basmati’ and ‘Doongara’ varieties are moderate to low GI
- cereals, such as barley, buckwheat and vermicelli
- legumes, such as baked beans, kidney beans and soy beans
- fruit, such as apples, oranges and stone fruits. Choose firm bananas rather than very ripe bananas
- vegetables – most vegetables contain minimal carbohydrate and can be eaten freely (other than potatoes and parsnip that have a high GI)

The role of dairy foods and diabetes

As mentioned previously, dairy foods have a low glycaemic index. Not only are they an ideal food for people with diabetes but research suggests that, as part of a healthy lifestyle, they may help to reduce the risk of developing diabetes.

Dairy foods, such as milk, cheese and yogurt, provide a range of essential nutrients including;

- protein
- carbohydrate
- vitamins (A, B12, and riboflavin)
- minerals (calcium, phosphorus, magnesium, potassium and zinc)

It is important that people with diabetes do not miss out on these nutrients and the other benefits that dairy foods provide. Three serves* of reduced or low fat dairy foods each day provide the recommended dietary intake for calcium, as part of the unique package of more than 10 essential nutrients that dairy contains.

*One serve is equal to one glass (250ml) of milk, a tub (200g) of yogurt, or 2 slices (40g) of cheese