

# Diabetes type 1

**Diabetes is a health condition where the body has difficulty converting glucose (sugar) into energy. In type 1 diabetes, the body's own immune system breaks down the cells in the pancreas that produce insulin. A person with type 1 diabetes needs daily insulin injections to stay alive.**

Glucose is the main source of energy for our body cells. It is a type of sugar that comes from the carbohydrates in food. In type 1 diabetes, body cells cannot use glucose because the cells in the pancreas that make insulin (a hormone that helps our body cells use glucose) have been destroyed by the body's own immune system. Without insulin, a person with type 1 diabetes will develop high blood glucose levels. They depend on daily insulin injections to replace the insulin their body cannot produce.

Type 1 diabetes used to be called 'insulin-dependent diabetes mellitus' or 'juvenile diabetes'. It usually develops in children or young adults, but it can occur at any age.

## Signs and symptoms

Symptoms usually develop quickly over a few days or weeks, and can be life-threatening. They are due to high blood glucose levels (hyperglycaemia) and changes in the way the body uses food for energy (metabolism).

Symptoms include:

- feeling very thirsty
- passing more urine
- always feeling tired
- weight loss
- always feeling hungry
- blurred vision
- frequent infections (e.g. thrush, cystitis).



## Long term effects

Over time diabetes can damage blood vessels and nerves, leading to complications including:

- eye damage (retinopathy), which can cause vision impairment and blindness
- kidney damage (nephropathy)
- heart disease
- stroke
- nerve pain or numbness (neuropathy)
- slow healing wounds (e.g. leg and foot ulcers)
- erectile dysfunction (male impotence).

To limit the symptoms and long-term effects of type 1 diabetes, treatment usually aims to keep blood glucose levels

before meals within the target range of 4–8 mmol/L.

## Treatment

Treatment aims to keep blood glucose levels as close to the target range as possible by balancing insulin doses with healthy eating and physical activity. Insulin is replaced through injections or via an insulin pump to control blood sugar levels.

Different types of insulin products are available. They differ in how quickly the insulin works and how long it lasts (e.g. rapid-, short-, intermediate-, or long-acting insulin). Different types of injection devices are also available.

The range of insulin products allows insulin

therapy to be tailored to suit different people and different lifestyles.

Insulin doses must be adjusted according to blood glucose levels, which depend on food intake, physical activity and general health. Some medicines can

also affect blood glucose levels.

People with type 1 diabetes need to measure their blood glucose levels every day using a blood glucose meter.

## Hypoglycaemia (low blood sugar)

Hypoglycaemia occurs if you have too little glucose (sugar) in your blood (below 4 mmol/L). Causes of hypoglycaemia include:

- delayed or missed meals
- not eating enough carbohydrate
- unplanned or strenuous exercise
- drinking alcohol without eating enough food

- too much insulin.

The symptoms of hypoglycaemia (called a 'hypo') are different for different people. They include:

- shaking, weakness, dizziness
- sweating
- fast heartbeat
- hunger
- numbness or tingling around the lips
- headache
- unusual behaviour (e.g. irritable, drowsy, confused)
- blurred vision
- slurred speech
- loss of consciousness.

A 'hypo' needs immediate treatment.

A person with diabetes who has hypoglycaemia needs to have:

- quick-acting carbohydrate (glucose)

(e.g.  $\frac{1}{2}$  glass soft drink or fruit juice (not 'diet' drinks), 3 teaspoons

sugar or honey, 6–7 jelly beans), **then**

- longer-acting carbohydrate within 20 minutes (e.g. a meal, fruit, yoghurt, milk, muesli bar).

**Note:** If a person with diabetes is unconscious or unable to swallow, do not

give them anything by mouth. Give first aid and phone 000 for an ambulance.

## Ketoacidosis

If a person with type 1 diabetes does not get enough insulin their blood glucose level rises, their metabolism changes and acids called 'ketones' build up in their blood and urine. This can lead to a life-threatening condition called ketoacidosis. Sickness and stress can increase insulin needs, so people with diabetes must monitor their blood glucose and ketone levels frequently when unwell.

## National Diabetes Services Scheme (NDSS)

The NDSS is an Australian Government program that subsidises the cost of some diabetes equipment. To access the NDSS you must complete a NDSS registration form, have it signed by a doctor or credentialed diabetes educator (CDE), and send it to your state or territory diabetes organisation. Many pharmacies are NDSS access points where you can lodge NDSS forms and buy the subsidised equipment.

## Self care

- Follow the product instructions for use and storage of your insulin.
- Follow the use and care instructions for your blood glucose meter.
- Monitor your blood glucose regularly levels

- Have a healthy diet. Eat a variety of vegetables, fruits, wholegrain/ wholemeal foods, protein-rich foods (e.g. nuts, lean meats, fish, eggs, beans) and low-fat dairy foods every day. Limit or avoid foods high in fat, sugar or salt.

- Exercise at a moderate level for at least 30 minutes on all or most days of the week.

- Limit alcohol intake to no more than 10 standard drinks per week, with no more than 4 standard drinks on any one day. Eat carbohydrate foods when drinking.
- Don't smoke. Smoking increases the complications of diabetes.
- Have regular checks for your pressure, cholesterol, eyes and kidneys.
- Take extra care of your feet and have them checked regularly by a doctor or podiatrist.
- Always have some quick-acting carbohydrate (glucose) with you.
  - Ask your doctor about glucagon injection for a severe 'hypo'.
- Teach your friends, family and co-workers how to recognise and treat a 'hypo'.
- Check that your blood glucose level is always above 5 mmol/L while driving a motor vehicle.
- Make a 'sick day plan' with your doctor and follow it when unwell.
- Link up with the diabetes team in your area. Diabetes teams include doctors, diabetes educators, dietitians, podiatrists and pharmacists.
- Join Diabetes Australia and NDSS.
- Wear identification (e.g. a *MedicAlert* bracelet) that says you have diabetes.

## Important

Type 1 diabetes can be managed with daily insulin, a healthy diet and regular physical activity. It is important to monitor your blood glucose levels several times a day. Blood glucose levels that are too low or too high can be a medical emergency. Ask your doctor or pharmacist for advice.

## Related fact

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## For more information

**Baker IDI Heart and Diabetes Institute Website:**  
[www.bakeridi.edu.au](http://www.bakeridi.edu.au)

### Diabetes Australia

Phone: 1300 136 588  
Website:

[www.diabetesaustralia.com.au](http://www.diabetesaustralia.com.au)

### Healthdirect Australia

Phone: 1800 022 222  
Website: [www.healthdirect.gov.au](http://www.healthdirect.gov.au)

### NPS MedicineWise

#### Medicines Information Line

Phone: 1300 MEDICINE (1300 633 424)  
Website: [www.nps.org.au](http://www.nps.org.au)

### Consumer Medicine Information

#### (CMI)

Your pharmacist can advise on CMI leaflets.

### Poisons Information Centre

In case of poisoning phone 13 11 26 from anywhere in Australia.

*Pharmacists are medicines experts. Ask a pharmacist for advice when choosing a medicine.*

## Your Self Care Pharmacy: