



Pharmaceutical
Society of Australia



Diabetes

Type 1

Diabetes causes high blood glucose levels and serious changes in metabolism. A person with type 1 diabetes needs daily insulin injections to stay alive, as their pancreas cannot make insulin, the hormone that enables body cells to use glucose (a type of sugar) for energy.

Glucose (from our food) is our bodies' main fuel. In type 1 diabetes, body cells cannot metabolise glucose because the insulin-making cells in the pancreas are destroyed by the body's own immune system. The trigger for this is not known. Type 1 diabetes leads to an abnormally high blood glucose level.

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

Signs and symptoms

Symptoms usually appear suddenly and can be life-threatening. They are due to high blood glucose levels (hyperglycaemia) and changes in metabolism and include:

- Feeling excessively thirsty
- Passing more urine
- Tiredness
- Excessive hunger
- Weight loss
- Blurred vision.

Long term effects

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

- Eye damage – diabetic retinopathy can cause vision impairment and blindness
- Kidney damage
- Heart disease
- Stroke
- Nerve pain or numbness (neuropathy)
- Slow healing wounds (e.g., leg and foot ulcers)
- Erectile dysfunction (male impotence).

Strict control of blood glucose levels can limit these complications.

Treatment

Treatment aims to keep blood glucose levels as close to normal as possible (4-8 mmol/L). It involves balancing insulin doses with healthy eating and physical activity. At present insulin must be injected, although other ways of giving insulin (e.g., nasal spray) are being investigated.

A range of insulin products are available. They have different durations of action (e.g., short, intermediate or long-acting) and different injection devices. The variety of products allows insulin therapy to be tailored to suit different people and different lifestyles.

For good blood glucose control, insulin doses must be adjusted according to blood glucose levels, which depend on food intake, physical activity and general health. People with type 1 diabetes can measure their blood glucose levels with a home blood glucose monitor.

Hypoglycaemia

Hypoglycaemia means a low blood glucose level. Causes of hypoglycaemia include:

- Delayed or missed meals
- Not eating enough carbohydrate
- Unplanned or strenuous exercise
- Drinking alcohol without adequate food
- Too much insulin.

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

- Shaking, weakness, dizziness
- Hunger
- Sweating
- Fast heart beat
- Numbness or tingling around lips
- Unusual behaviour (e.g., irritability, drowsiness, confusion)

- Blurred vision
- Headache
- Slurred speech
- Loss of consciousness.

A 'hypo' needs immediate treatment. If hypoglycaemic, a diabetic needs to have:

- Quick-acting carbohydrate (glucose) (e.g., ½ glass soft drink or fruit juice, 3 teaspoons sugar or honey, 6-7 jelly beans), then
- Longer-acting carbohydrate within 20 minutes (e.g., a meal, fruit, yoghurt, milk).

Note: If a diabetic with hypoglycaemia is unable to swallow do not give them anything by mouth. Follow first aid procedures and phone 000 for an ambulance.

Ketoacidosis

If a person with diabetes does not get enough insulin their blood glucose level rises, their metabolism changes and 'ketones' accumulate in their blood and urine. This can lead to a life-threatening condition called ketoacidosis. Sickness and stress can increase insulin requirements, so people with diabetes need to monitor their blood glucose and ketone levels frequently when unwell. Some home blood glucose monitors can measure blood ketones.

The National Diabetes Services Scheme (NDSS)

The NDSS is an Australian Government initiative administered by Diabetes Australia that provides diabetic equipment at subsidised prices. Diabetics must be registered with NDSS by their doctor or a credentialed Diabetes Educator (CDE). Some pharmacies act as NDSS agents and stock the subsidised equipment.

Self care

- Follow the product instructions for use and storage of your insulin.
- Follow the use and maintenance instructions for your home blood glucose monitor.
- Monitor your blood glucose levels regularly.
- Eat regular, healthy meals, including fruit, vegetables and wholegrains. Limit 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.

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- Limit alcohol and eat carbohydrate foods when drinking.
- Don't smoke – it contributes to diabetic complications.
- Have regular checks for blood 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 sugar level is above 4mmol/L before driving a motor vehicle.
- Develop a 'sick day plan' with your doctor and follow it when unwell.
- Link up with the diabetes team in your area. Diabetic teams include doctors, diabetic educators, dietitians, podiatrists and pharmacists.
- Join Diabetes Australia and the NDSS.
- Wear identification that says you have diabetes.

Related fact cards

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- *Exercise and the Heart*
- *Fat and Cholesterol*
- *High Blood Pressure*
- *Oral Health*
- *Smoking series*
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- *Vision Impairment*
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For more information

Baker IDI Heart and Diabetes Institute – www.bakeridi.edu.au

Diabetes Australia – phone 1300 136 588 or website www.diabetesaustralia.com.au

Hands on Insulin – website www.handsoninsulin.com.au

HEALTHInsite – website www.healthinsite.gov.au

Consumer Medicine Information (CMI) leaflets – your pharmacist can advise on availability.

NPS Medicines Line – phone 1300 888 763 Monday to Friday, 9am to 6pm EST.

The Poisons Information Centre – in case of poisoning phone 131 126.

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

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