

# Type 2 diabetes

Diabetes is a condition that occurs when our body is unable to produce enough insulin or respond properly to the insulin it does produce.

Insulin is a hormone that is produced by special cells (called beta cells) in the pancreas. Insulin helps glucose (sugar) in the blood enter cells in our body, where it is used for energy or stored for later use. Without insulin, glucose just stays in the blood and is useless as an energy source.

High blood glucose levels are called hyperglycemia. Hyperglycemia that persists for long periods of time causes permanent damage to blood vessels, kidneys, nerves, and the eye. It increases the risk of heart disease and stroke, gum disease, foot problems, erectile dysfunction, and infections. But an early diagnosis of diabetes and good treatment can considerably reduce the risk of these problems.

There are three main types of diabetes: type 1 diabetes, type 2 diabetes, and gestational diabetes (this only occurs in pregnant women). This leaflet focuses on type 2 diabetes.

## Risk factors for type 2 diabetes

- Ethnicity: Māori, Pacific Islanders, and South Asian people are at higher risk of developing diabetes
- Excessive weight, especially if most of the weight is around the waist
- A family history of diabetes
- High blood pressure or high cholesterol levels
- Inactivity
- Prediabetes
- Women who have previously had gestational diabetes or given birth to a baby weighing more than 4kg.

For many people, type 2 diabetes can be prevented by making healthy food choices and staying active.

### Symptoms of type 2 diabetes

Symptoms may not be obvious, but may include:

- Feeling thirsty often
- Feeling tired and lacking energy
- Frequent infections or skin infections that take a long time to heal
- Going to the toilet often
- Often feeling hungry
- Poor eyesight or blurred vision

## Diagnosing type 2 diabetes

If your doctor suspects that you may have diabetes, they will order a blood test that measures how good your long-term blood glucose control has been. This is called an HbA1c test and is much more reliable than just measuring the levels of glucose in your blood (although this test may also be done). You do not need to fast for an HbA1c test.

If you have an HbA1c level of at least 50 mmol/mol as well as symptoms of diabetes, then this is considered diagnostic of diabetes. If your test levels are high but you do not have any symptoms, then your doctor may ask you to repeat the test in 3 months before making a diagnosis.

An HbA1c between 41–49 mmol/mol is called ‘pre-diabetes’ and will require repeat testing every 6–12 months.

### Complications of type 2 diabetes

- An increased risk of heart disease and stroke
- Damage to the blood vessels of the eyes: possibly leading to blindness (diabetic retinopathy) if untreated
- Damage to the kidneys: can eventually lead to kidney failure in some people
- Erectile dysfunction
- Increased infections and poor healing of wounds
- Nerve and blood vessel damage particularly in the hands and feet. May cause tingling, pain, numbness or weakness
- Periodontal disease and other oral health problems



## Treating type 2 diabetes

Some people are able to manage or prevent type 2 diabetes by losing weight, exercising, and improving their diet. Weight-loss surgery may be appropriate.

Others require medication that either stimulates the pancreas to produce more insulin or help cells uptake glucose. Oral medication is usually effective initially, although more than half of all people with type 2 diabetes eventually require insulin as the disease progresses. Examples of oral medicines used to treat type 2 diabetes include acarbose, gliclazide, glipizide, metformin, pioglitazone, and vildagliptin.

Your doctor will ensure that any other conditions you may have, such as high blood pressure, high cholesterol, or gout are also being treated properly. Depression is also twice as common in people with type 2 diabetes. Please talk to your doctor if you feel you may be affected (for more information visit [www.depression.org.nz](http://www.depression.org.nz)).

## Home blood glucose testing

This allows you to measure your blood glucose levels at home using a home blood glucose meter, and your first one is free if you meet certain criteria.

These meters only require a small amount of blood (a fingerprick's worth). Make sure you are familiar with how to use the meter; otherwise your pharmacist, doctor, or a diabetes nurse can help you.

Your doctor will decide what is the best blood glucose target for you and how often you should measure your blood glucose levels. For most people with type 2 diabetes, a target HbA1c of 50–55 mmol/mol is recommended.

## Keeping yourself healthy

Making good lifestyle choices can really help you manage your type 2 diabetes. Diabetes is often called a 'silent disease' because even though you may not notice any symptoms, persistently high blood glucose levels cause permanent damage to your body.

Losing weight can sometimes be enough to control type 2 diabetes and it also helps reduce high blood pressure and improve cholesterol levels. Reduce portion sizes at meals, lower your intake of saturated fat, and avoid trans fats. Your diet should be based mainly on vegetables and wholegrain foods. Diabetes NZ has good diet leaflets; call 0800 342 238 or visit [www.diabetes.org.nz](http://www.diabetes.org.nz).

Physical activity is an important part of your diabetes management plan. Start off slowly if you haven't exercised much in the past and talk to your doctor about what exercises are more suitable for you; examples include walking, swimming, and cycling. Set realistic goals and gradually increase the intensity of your exercise.

If you smoke, stop. Smoking can further increase your risk of heart disease and add to other complications of diabetes.

Make sure you know as much about type 2 diabetes as you can – ultimately you are in charge of the day-to-day management of your diabetes. If you have any questions or need more information, talk to your doctor or diabetes nurse/educator.

Regular health checks are essential for people with diabetes in order to reduce the frequency and long-term impact of complications. The following need regular monitoring:

- HbA1c – monitors long-term blood glucose control; tested at least yearly (sometimes every 3 months)
- Lipid (cholesterol) levels – test yearly
- Kidney (renal) function tests – test at least yearly
- Foot checks – every 12 months by a professional; get family members to check more frequently for calluses or ulcers
- Eye checks – every 1-2 years by an optometrist/eye-clinic.

### Coping with type 2 diabetes

- Talk to others (your family/friends or others with diabetes). You are not alone
- See a dietician for help with food choices
- See your diabetes nurse educator or contact a local diabetes group
- Take one step at a time
- See a counsellor or your GP if you are finding it difficult
- Look around for community groups that help support your lifestyle changes, eg, walking or activity groups

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