

Managing Type 2 Diabetes

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You've been diagnosed with type 2 diabetes. What's next?

A diagnosis of type 2 diabetes can come as a big shock. It can also be an emotional time as you question how significantly your daily life will change. You might wonder how it will affect your relationships and work or if it will stop you doing the things you love.

Living with diabetes isn't always easy but it's vital to manage your condition to prevent serious complications in the future. Research shows it's possible to go into remission, stop or slow the progression of type 2 diabetes by making lifestyle changes and using safe, effective medication.

At Bupa, we know a diabetes diagnosis can feel overwhelming. It's a lot to get your head around and with so much information out there, it's hard to know which advice to trust.

We've put together this guide to help explain:

- What diabetes is
- The range of treatments available for type 2 diabetes
- Practical tips and information on how to manage type 2 diabetes

It may also be a useful resource for your family and friends who want to understand more about type 2 diabetes and how they can support you.

We're more than just a health insurer. We're a health and care company, committed to helping people live longer, healthier, happier lives. We offer a broad range of services, including health insurance, dental, optical, aged care and retirement, and community wellbeing initiatives, to improve the health of all Australians.



What is diabetes?

Diabetes is considered the biggest health challenge in the country. It affects about 1 in 20 Australians, almost 1.3 million people, with another 500,000 believed to have diabetes without knowing it. This doesn't include gestational diabetes.

When you have diabetes you have too much glucose (a form of sugar derived from carbohydrates) in your bloodstream, caused by problems with the hormone insulin. Insulin is made in the pancreas and it helps move glucose from the food you've eaten into your cells where it can be used as energy. If you don't have enough insulin, or if your body can't use it properly, glucose can build up in the blood rather than enter the cells. This may cause unpleasant symptoms and lead to serious health problems.

Types of diabetes

There are 3 main types of diabetes: type 1 diabetes, type 2 diabetes and gestational diabetes. Type 2 diabetes is the most common, making up 85 to 90 per cent of all cases.



Type 2 diabetes

You develop type 2 diabetes because your body becomes resistant to the insulin you produce and gradually loses its ability to produce enough insulin. When you have insulin resistance the cells in your liver, fat and muscles don't respond well to insulin which means blood glucose can't easily enter your cells. In response, your pancreas pumps out more insulin to keep your blood glucose levels within a normal range.

Initially you won't have any symptoms of insulin resistance as your blood glucose levels are within a normal range, but over time your pancreas can't keep up with the increased production of insulin. The insulin-producing cells wear themselves out and your blood glucose levels rise.

Although more common in people over 45, type 2 diabetes can also affect younger people, even children. Many people with type 2 diabetes have no or very mild symptoms that go unnoticed for years. It's often only discovered accidentally at a routine blood test that shows higher than normal levels of glucose in the blood.

Risk factors for type 2 diabetes include those listed below.

You're more at risk if you:

- have a family history of type 2 diabetes
- are carrying excess weight (especially around the waist)
- have low levels of physical activity
- smoke
- drink alcohol excessively
- are of Aboriginal, Torres Strait Islander, Maori, Pacific Islander, Asian (including Indian sub continent), Middle Eastern or North African background
- are over 45
- have high blood pressure or have had a heart attack or stroke
- have polycystic ovary syndrome (PCOS)
- have had gestational diabetes
- are taking certain types of medications (such as antipsychotic or steroid medications)
- have impaired glucose tolerance or impaired fasting glucose (also called pre-diabetes).

What is pre-diabetes?

Put simply pre-diabetes is a major warning sign that you're on track to developing type 2 diabetes. It's when your blood glucose levels are too high, but not high enough to be diagnosed as diabetes.

Pre-diabetes doesn't have any symptoms and is likely to be detected only if your doctor checks your blood glucose levels. An estimated 16 out of every 100 Australian adults have pre-diabetes, which is a risk factor for developing type 2 diabetes and cardiovascular disease. If you have pre-diabetes, the good news is that lifestyle changes such as eating healthy foods and becoming more active can lower your risk of developing type 2 diabetes by 58%.



Am I at risk?

To predict your risk of developing type 2 diabetes in the next 5 years, you can use the calculator on the Diabetes Australia website (www.diabetesaustralia.com.au/risk-calculator).

If the results show you have an increased risk of developing type 2 diabetes, or you think you may have diabetes, see your GP for further testing.

Other types of diabetes

Type 1 diabetes is a chronic condition where your body is unable to make insulin. This happens because the cells in the pancreas that produce insulin are destroyed by the body's immune system. About 1 in 10 Australians living with diabetes have type 1 diabetes, which is usually diagnosed in childhood or adolescence.

Symptoms can include excessive thirst, frequent urination, weight loss, and ketones (an acid produced when your body uses up fat) in the urine. The causes of type 1 diabetes are unknown, but it has a strong link to family history of diabetes, and it's possible it may be triggered by a virus or another autoimmune disease.

Gestational diabetes is a type of diabetes that develops in the mother during pregnancy and affects about 12-14% of pregnant women. Gestational diabetes often goes away after the baby is born, but it can come back with subsequent pregnancies, and it increases the mother's risk for developing type 2 diabetes.

Diagnosing type 2 diabetes

A blood test can measure the level of glucose in your blood and tell you if you are at risk of or have type 2 diabetes. There are 3 types of tests that can diagnose type 2 diabetes:

- 1 **HbA1c (glycated haemoglobin)** is a non-fasting blood test which measures the glucose levels in the blood over the past few months. If your result is 48 mmol/mol (6.5%) or higher, you probably have diabetes. This will be confirmed with a repeat test or another type of test.
- 2 **Fasting blood glucose (FBG)**, is as the name suggests, a test taken after you haven't eaten for at least 8 hours. If your blood sugar level is above 7.0 mmol/L, it's likely you have diabetes, but this will be confirmed with a repeat test.
- 3 **Oral glucose tolerance tests (OGTT)** measure how your blood glucose level changes over time after you have a sugary drink and have fasted overnight. Generally, diabetes is likely if your blood sugar level is over 11.1 mmol/L 2 hours after you've had the sugary drink, as this suggests that your body's insulin has not worked effectively to remove the glucose from your blood and bring your levels back down to an ideal range.



Managing type 2 diabetes

To prevent long-term complications from type 2 diabetes and ensure a good quality of life, it's important to manage your condition. This generally involves:

- relieving symptoms and preventing the short-term effects of fluctuating blood glucose levels
- keeping blood glucose levels as close to an ideal range as possible
- reducing risk factors to help prevent or manage chronic complications.

A typical diabetes management plan to help achieve these, includes:

- monitoring and managing your blood glucose levels, HbA1c, blood pressure, kidney function and cholesterol levels
- regularly getting your eyes and feet checked for potential complications
- having a healthy eating plan, regular exercise and other healthy lifestyle habits
- knowing what to do if there are any significant changes in blood glucose levels
- taking medication and/or using insulin if required.

We all come from different walks of life, so it's vital your diabetes management plan is tailored to your unique needs, lifestyle and life stage.

It should also consider your age, cultural background, objectives and priorities, mental wellbeing and other health conditions.



Your diabetes management team

Because diabetes can affect every part of the body, it's important you are supported by a team of specialised health professionals. That often includes a:

- **General Practitioner (GP)** – a doctor who is usually your first point of contact helping to co-ordinate your care, referring you to specialists if needed
- **Diabetes educator** – helps you to understand and manage your diabetes, particularly in the early days after a diagnosis
- **Dietitian** – works with you to develop a healthy eating plan to suit your lifestyle and health needs
- **Endocrinologist** – a specialist doctor working with your GP to help with complex problems related to diabetes
- **Pharmacist** – provides information and advice on any medications you may be taking, including those prescribed by your doctors as well as over-the-counter medications and vitamins/supplements
- **Optometrist/ophthalmologist** – eye health professionals who regularly check your eyes for any signs of damage to help reduce the risk of complications
- **Podiatrist** – regularly checks your feet and lower limbs for problems, particularly nerve and circulation damage.

Your doctor may also suggest you see other healthcare professionals to help manage your diabetes, including those specialising in oral health, mental health, and exercise.



The National Diabetes Services Scheme (NDSS)

If you've been diagnosed with diabetes you are eligible to register with the National Diabetes Services Scheme (NDSS). It's free to register and provides subsidised products (including blood glucose testing strips and insulin syringes) through local pharmacies. You can also access education and support services to help you understand and self-manage your diabetes. Find out more at www.ndss.com.au

Monitoring and managing your blood glucose levels

When it comes to diabetes treatment the aim is to keep your blood glucose levels as close to your recommended target range as possible. If they fluctuate too much it can affect your long-term health.

Because you can't always tell if your blood glucose is too high or too low you may need to regularly monitor and record it to see how different factors – like illness, stress, diet, or exercise – affect it. So, it's important to work with your doctor to find the best way to manage your diabetes.

When you start anything new it can take a while to get into the routine of it. Your doctor or diabetes educator can recommend a schedule for checking your blood glucose level.

You may need to check your blood glucose levels more frequently, for instance, if:

- you use insulin
- you're stressed or sick
- you've changed your eating habits, activity levels or medication, or
- you're experiencing symptoms of low or high blood glucose levels.

Always keep a record of your readings to take with you to appointments. You can keep a written record or may prefer to use a digital tool or app.



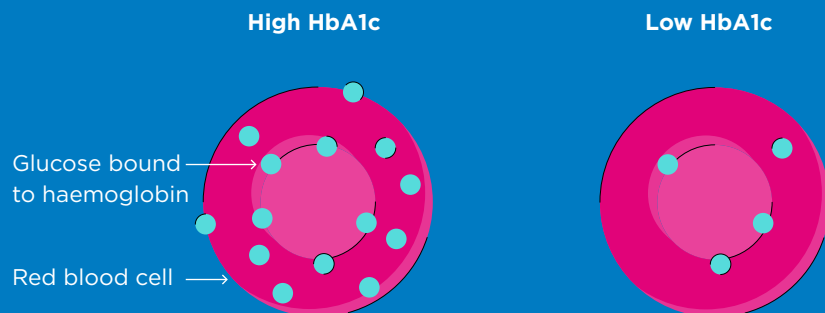


What is HbA1c?

Checking your blood glucose only gives you a snapshot of your glucose level at that moment and it's possible for blood glucose to vary from day to day. That's why your doctor is also likely to test your HbA1c levels every 3-6 months, as this test gives your doctor an overall picture of your average blood glucose levels over the previous few months.

HbA1c refers to glycated haemoglobin. This develops when haemoglobin, a protein in your red blood cells that carries oxygen around your body, joins with glucose in the blood – a process called glycation. The amount of HbA1c formed is directly related to the amount of glucose in your blood, and because red blood cells live for up to 4 months, the HbA1c test indicates blood glucose levels over this time.

Current guidelines recommend that you should aim for an HbA1c that is 53 mmol/mol (7.0%) or lower. But this target may be higher or lower, depending on your individual circumstance and the medications you're taking. The closer your HbA1c level is to the target, the more successful your chance of reducing or preventing complications.



Hyperglycaemia

Hyperglycaemia is the medical term for when your blood glucose levels are too high. If your blood glucose is often too high, it can cause damage to your nerves, blood vessels and other body organs.

While optimal blood glucose levels are between 4.0–8.0mmol/L, generally the target blood glucose levels for people living with type 2 diabetes are:

- 4.0–7.0 mmol/L fasting or before meals
- 5.0–10.0 mmol/L 2 hours after starting meals.

These targets ranges can vary with age, how long you've had diabetes, and the type of medication you're taking, so it's important to talk to your healthcare team about what target range is best for you.

Reasons for high blood glucose levels include:

- changing your eating patterns, such as eating a lot of food high in carbohydrates
- being less active than usual
- sickness, infection or emotional stress.
- skipping or forgetting your diabetes medication or insulin
- medication that has expired
- medication that's no longer right for you (based on your diet and activity levels)
- other medications such as corticosteroids (often used to treat arthritis or asthma).

Often there are no signs or symptoms of hyperglycaemia, but they can include:

- excessive thirst
- dry, itchy skin
- frequent urination
- pain and tingling in legs and feet
- tiredness
- headaches
- vision problems, e.g. blurring
- increased susceptibility to infections like thrush.

The occasional high blood glucose level is generally not a problem but talk to your GP and/or diabetes educator about what to do if you regularly have hyperglycaemia.

Hypoglycaemia

Hypoglycaemia (often called a 'hypo') occurs when blood glucose levels fall below 4.0 mmol/L.

Reasons for low blood glucose levels include:

- not having enough food or waiting too long between meals or snacks, especially if you're taking diabetes medication or insulin
- exercising without eating enough carbohydrates to fuel your activity
- adjusting your diabetes medication or the dose
- drinking too much alcohol and drinking on an empty stomach.

If your blood glucose is too low, you might feel tired, find it hard to concentrate and have difficulty with everyday activities like driving.

Other signs and symptoms of hypoglycaemia include:

- light-headedness or dizziness
- sweating
- shaking
- hunger
- numbness of the lips and/or fingers
- irritability
- not being able to think clearly
- fainting.

If you have any of these symptoms, try to check your blood glucose immediately. It's important you know what to do if you suspect you have hypoglycaemia.



It's important to treat hypoglycaemia quickly to avoid severe symptoms. In serious cases it can lead to fitting, loss of consciousness and even death.

How to treat a hypo

Step 1: If your blood glucose is low, it's important to eat or drink something containing glucose that will be absorbed quickly to help bring your blood glucose levels back to normal. These are called 'quick-acting carbohydrates' or 'hypo foods' and typically contain about 15 grams of carbohydrates.

Wait 10-15 minutes and then re-check your blood glucose level. If it's still low, eat another hypo food then wait another 10-15 minutes before checking your blood glucose level again. If it has still not returned to normal, call your doctor straight away for further instructions.

Make sure your family, friends and co-workers know you have diabetes and can recognise hypos and where your hypo foods are kept. This way they can help you if you experience hypoglycaemia.



Always have some quick-acting carbs handy at home, in your car, and at work, such as:

- Glucose tablets equivalent to 15 grams of carbohydrate
- 6 or 7 jellybeans
- Half a can of regular soft drink (not diet or sugar free)
- 3 teaspoons of sugar or honey
- Half a glass of fruit juice.

Step 2: If your blood glucose returns to normal after eating, stop drinking and eating hypo foods even if you still feel some symptoms of low blood glucose, and start planning ahead for your next meal.

- If your next meal is within 20 minutes: wait and eat your meal at the normal time.
- If your next meal is more than 20 minutes away: eat a small snack of longer-acting carbohydrate, then eat your meal at the normal time.

Longer-acting carbohydrates are more slowly absorbed by your body and help regulate your blood glucose levels over time. These include:

- a sandwich, preferably wholegrain
- a glass of milk or soy milk
- a piece of fruit
- 2 or 3 dried apricots, figs or other dried fruit
- a tub of natural low-fat yogurt
- 6 small dry biscuits with cheese.

If a person with type 2 diabetes is unable to swallow, feels drowsy or is unconscious, this is an emergency. Call 000 for an ambulance and do not give them any food or drink.



Managing diabetes with lifestyle

Having type 2 diabetes doesn't mean you'll automatically need medication. You can often manage your diabetes initially by monitoring your blood glucose levels and making lifestyle changes.

Research shows losing weight is the most important treatment for people living with type 2 diabetes. Weight loss reduces your risk of serious diabetes complications and in some cases may also help you go into remission.

'Remission' means that your blood sugar levels are below the diabetes range (HbA1C below 48mmol/mol or 6.5%) for at least three months, without the need for diabetes medication.

But we know losing weight is easier said than done. The best way to start making sustainable changes is to tweak your diet and add more movement into your day.

Diet and nutrition

Healthy eating for people with diabetes is pretty much the same as for those without the condition. The major difference is people with diabetes need to be careful with carbohydrates.

While technically there are no foods that are completely off the table, eating things that are high in sugar or highly processed carbohydrates will make it harder to manage your blood sugar, and will likely lead to weight gain.

The Australian Dietary Guidelines (www.eatforhealth.gov.au) recommend which foods to eat regularly, portion sizes and what's best avoided. The general rule to healthy eating is to eat a wide variety of nutritious foods each day.

Carbohydrates and the Glycaemic Index

If you have type 2 diabetes you need to be mindful of foods that contain carbohydrates because they affect how your blood glucose levels rise after a meal. One consideration is the portion size, as too large a serving can mean too large a rise in blood glucose. It's best to have regular and portion-controlled meals to spread your carbohydrate intake evenly throughout the day.

Another thing to think about is a measure called the Glycaemic Index (GI). This is a score given to carbohydrate foods based on how they impact your glucose levels. Low GI is scored as 55 or less, mid GI is 56-69 and high GI is 70 or above.

High GI foods can cause a spike in your blood sugar levels followed by a crash, whereas your body breaks down lower GI foods more slowly, releasing glucose gradually into the bloodstream over a longer period of time. This slows the rise in blood glucose levels and helps you feel fuller for longer, which can help you maintain a healthy weight. You'll find examples of high and low GI foods in the table below.



Shopping for low GI foods

It's not always easy to tell if a food is high or low GI. Take oats, for instance. There are three different types of oats, rolled (traditional), steel cut and quick-cooking (or instant). These all have the same nutrients but not the same GI. The difference? Their processing. Quick-cooking oats are more finely milled which means they are digested much more quickly, raising your blood glucose at a faster rate. Rolled oats fall somewhere in between steel cut and quick-cooking, with a GI of 53.

When you are shopping, look for the GI Symbol, which shows which products have a low GI. You can also go to www.gisymbol.com for tips on eating low GI, planning low GI meals, plus a useful low GI shopping list.

Making the swap: Examples of High and Low GI foods

Replace high GI	With low GI
Soft white bread Bagels Turkish bread Light and airy wholemeal bread Rice crackers/rice cakes	Grain and seed breads Authentic sourdough bread White corn tortillas Dense, high fibre wholegrain bread Wholegrain high fibre/grain crackers
Refined puffed cereal Refined flaked cereal Quick/instant oats	Traditional or steel cut porridge oats Muesli Wholegrain high fibre cereals
Jasmine rice Arborio rice Medium grain white and brown rice Instant couscous	Low GI white and brown rice Basmati rice Pearl couscous Quinoa Pearl barley
White potatoes – mashed, chips, French fries	Carisma™ or low carb white potato Sweet potato Butternut pumpkin Beans and lentils
Potato gnocchi Rice and corn pasta Dried rice noodles/instant noodles	Durum wheat pasta (cooked 'al dente') Soba, udon, hokkien noodles Fresh rice noodles
Soft drinks, cordials, energy drinks Rice milk, oat milk	Reduced or low fat milk, soy, almond milk Reduced or low fat yoghurt drink

Eating carbohydrates as part of a balanced mix, with protein and/or healthy fats, can also slow down the impact of the carbohydrates on your blood sugar.

Before making changes to your diet it's important to talk to your diabetes team first, so you can understand how this may impact your blood glucose levels and your overall management plan. An Accredited Practising Dietitian (APD) can talk to you about the foods you enjoy eating and how to make healthy swaps to lower GI options.

Is a low-carb diet good for diabetes?

Because carbohydrate-containing foods can raise blood glucose levels more than other foods, it's easy to think you should heavily restrict them if you have diabetes.

Low-carb eating can work for some people with diabetes, but not for all. Generally, the best choice is to simply eat a regular, healthy diet that includes low GI carbohydrates in appropriate portions as part of balanced meals, distributed throughout the day.

If you'd like to try a low-carb diet, it's important to speak to an Accredited Practising Dietitian with experience in diabetes management. Any eating plan must be safe, enjoyable, nutritious, and not pose a risk to your heart or kidneys by being too high in saturated fat and salt.

Is sugar off the menu if you have diabetes?

Many people think consuming lots of sugar causes diabetes, but it's not that simple. Too much sugar can complicate diabetes management, but sugar alone doesn't cause diabetes and you don't need to avoid it altogether.

If you have diabetes, you can have some sugar in your diet (i.e. a teaspoon of sugar in your tea or an occasional slice of cake). But it's best to limit foods and drinks that are high in added sugar because they can contribute to large increases in blood glucose levels as well as difficulties maintaining a healthy weight.

Don't confuse naturally occurring sugar and added sugar. You'll find naturally occurring sugar in milk and in fruits and vegetables. These sugars are not considered harmful as they are in foods that contain many other useful nutrients such as fibre, vitamins and minerals.

Added sugars are those that are added to a food by the manufacturer or the person preparing it, and it's these sugars that carry health risks when eaten in large amounts.





How can I tell if a food is high in sugar?

Many highly processed foods on the supermarket shelf are high in added sugar. And spotting added sugar on food labels or the nutrition information panel (NIP) can take a bit of getting used to.

If you want to compare products and choose the one lowest in sugar, try looking at the 'Per 100g' column of the label. It's best to avoid foods with more than 15g of sugar per 100g.

It's also important to check whether sugar (or other names for sugar such as fructose, dextrose and other words ending in 'ose') is high on the ingredient list. If it's among the first few ingredients, it's probably high in added sugar.

Dried fruit is another ingredient that can increase the sugar content of the food, particularly in products like breakfast cereals and muesli bars, but this isn't as harmful as other forms of added sugar.

What should I drink when I have diabetes?

Tap water is the best drink to keep you hydrated. It's kilojoule free, won't affect your blood glucose levels and is good for your kidneys. Other good choices are herbal tea, soda water and plain mineral water. If you'd like a sweet drink opt for those labelled 'diet' or 'no sugar' as this means the drink is sweetened with artificial sweeteners. These don't cause a spike to blood sugar levels and won't contribute to unwanted weight gain.

Do gut bacteria have a role in diabetes?

Your gut is home to hundreds of species of microorganisms such as bacteria, fungi and viruses. Scientists believe this gut microbiome has a role to play in chronic diseases, including type 2 diabetes. Studies have found that some strains of bacteria are linked to an increased risk of developing type 2 diabetes. Other research shows there are certain bacteria which may protect against insulin resistance, improve glucose control and reduce inflammation, which is commonly seen in diabetes.

This area of research is in its early stages. Until we know more and are able to prescribe specific bacterial strains for type 2 diabetes the best thing to do is support a healthy and diverse gut microbiota. One way to do this is eating a diet high in dietary fibre. Dietary fibre from plant foods such as wholegrains, legumes, fruit and vegetables 'feed' the beneficial gut microbiota of the large intestine, allowing them to thrive. Fermented foods such as yogurt, kefir, miso and sauerkraut contain live active cultures which can also benefit the gut.

Keeping physically active

Being physically active ticks a lot of boxes for diabetes management. It improves how well our bodies respond to insulin (insulin sensitivity) and blood glucose control and helps you reach and maintain a healthy weight. When you're exercising your muscles usually burn glucose for energy. This means that during exercise your blood glucose levels decrease, while also helping improve your body's ability to manage glucose levels in the long-run. Because your glucose levels decrease during exercise, it's worth checking your blood glucose levels beforehand, to lower your risk of having a hypo.

How much is enough?

Try to be active every day. That doesn't mean you have to join a gym or take up running (although it's great if you can manage it). Even moderate-intensity aerobic exercise like brisk walking for at least 30 minutes a day has huge health benefits. You can divide this into 3 lots of 10 minutes if that's easier. Garden, clean your home, ride a bike, play with the children, walk the dog — all movement counts.

Build some muscle

Strength training also helps you manage your glucose levels as it helps build more lean muscle. This acts as a 'dam', a place where glucose can be stored in the form of glycogen. As well as storing glucose, having more lean muscle mass improves the insulin sensitivity of your body's cells, meaning they can more easily take up and use blood glucose. Strength training exercises use your body weight to work against a resistance and include lifting weights or using resistance bands, heavy gardening, climbing stairs, hill walking, push-ups, sit-ups and squats, yoga (depending on the style) and Pilates. Aim for 2 sessions of strength training every week.

Preparing to be active

Talk to your GP before starting a new exercise program, especially if you haven't been particularly active, are pregnant, overweight, on medication, have heart disease or a family history of heart disease or any other major health concerns.

And take care of your feet as people with diabetes can experience complications due to damage to the feet. Inspect your feet before and after exercise, pick activities that cause less stress to your feet, and make sure you wear well-fitting shoes suited to the activity.

Manage your weight

If you're overweight or obese, see a dietitian for help with an achievable weight loss program as it's one of the best ways to manage the condition. Losing 5 to 10 per cent of your body weight can help you improve blood glucose management.

Reducing excess weight can also help lower your blood pressure and cholesterol levels and staying within your ideal weight range lowers your risk of complications.

Quit smoking

Smoking increases your risk of developing type 2 diabetes. Cutting back or quitting can help prevent diabetes complications including heart disease, stroke, kidney disease, nerve damage, foot problems and eye problems. If you've tried to quit smoking before without success, don't be too hard on yourself. Sometimes it takes multiple attempts.

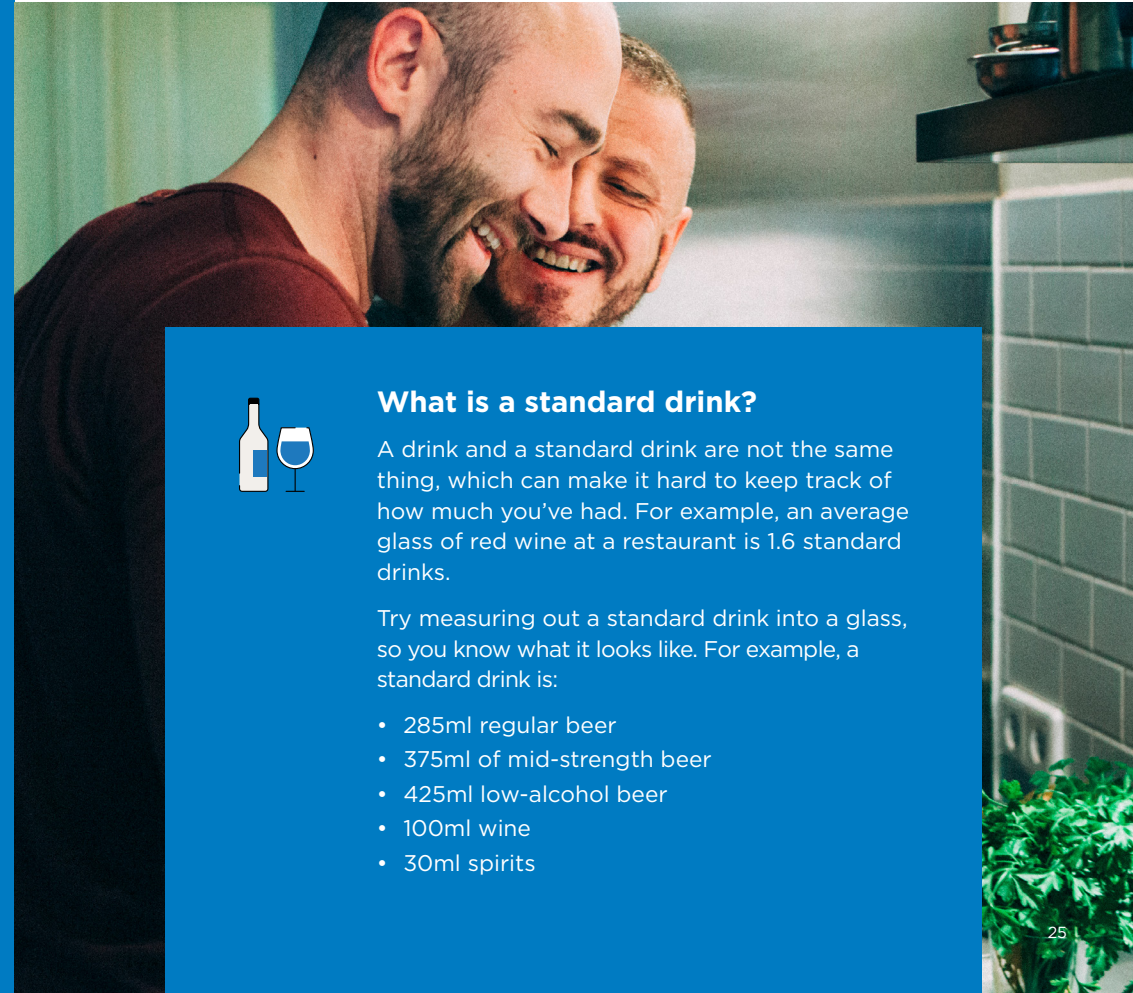
Talk to your doctor or pharmacist about ways to make giving up smoking a reality.

Moderate your alcohol intake

When you have type 2 diabetes you don't need to avoid alcohol altogether, but you do need to be careful how much you drink. Alcohol can significantly impact your blood sugar levels in the short and long term, as well as impacting your overall health. It's also high in kilojoules and is often served with mixers that can also be high in sugar and may raise blood glucose levels. Excessive drinking also increases your risk of high blood pressure and heart disease.

If you are taking insulin or certain diabetes medications you're at risk of alcohol-related hypoglycaemia, which can occur while drinking alcohol and for many hours afterwards. If you enjoy a drink, here are some ways to reduce your risk of hypoglycaemia:

- talk to your doctor about how much you can safely drink and whether you should check your blood glucose levels when you're drinking
- keep to recommended levels (no more than 10 standard drinks a week, and no more than 4 on any one day)
- avoid sweet wines, beers and pre-mixed drinks, and choose sugar-free mixers where possible
- don't drink alcohol on an empty stomach, and
- make sure you have a meal containing carbohydrate foods (such as rice, potato, pasta or bread) before drinking alcohol.



What is a standard drink?

A drink and a standard drink are not the same thing, which can make it hard to keep track of how much you've had. For example, an average glass of red wine at a restaurant is 1.6 standard drinks.

Try measuring out a standard drink into a glass, so you know what it looks like. For example, a standard drink is:

- 285ml regular beer
- 375ml of mid-strength beer
- 425ml low-alcohol beer
- 100ml wine
- 30ml spirits

Medications for type 2 diabetes

If you have type 2 diabetes, eating well and exercising regularly are essential for your health in the long run. If your blood glucose is still not well managed after 2-3 months of lifestyle change, your doctor may also recommend adding medication. This can feel like a big life change, but medication can really help you get on top of your diabetes. It's only one part of your management plan and doesn't replace healthy living habits.

Oral medications to lower blood glucose levels, boost your insulin levels, or both, are generally used to treat type 2 diabetes. They may be used on their own, in conjunction with each other, or with insulin.

Common diabetes medications

A variety of medications can be used to treat type 2 diabetes but it's important to find what works for you.

Talk to your doctor or pharmacist before taking anything new. You need to know the best time of day to take the medication, whether you need to take it with food, and what to do if you're unwell. You may have to be careful about mixing your diabetes medication with other medications, complementary medicines including vitamins and supplements, and/or alcohol.

If you have any side effects or have symptoms that might be caused by medication, contact your doctor or pharmacist as soon as possible.

Metformin helps to lower the amount of glucose in the bloodstream. It also reduces the amount of glucose produced by the liver. If you have type 2 diabetes, metformin will usually be the first medication you're offered. Metformin may help with weight loss, reducing the risk of diabetes complications, and lowering levels of bad cholesterol (a risk factor for cardiovascular disease). Possible side effects include stomach problems such as diarrhoea, nausea or vomiting. The advice is to slowly increase the dose to help reduce the side effects.

Sulphonylureas are sometimes recommended when metformin alone isn't enough to bring blood glucose levels within a recommended range or for people who cannot take metformin. Sulphonylureas stimulate the pancreas to release more insulin and may also improve insulin sensitivity. People who take sulphonylureas can be at risk of low blood glucose levels (hypoglycaemia).

Gliptins (DPP-4 inhibitors) work by increasing the amount of insulin released by your pancreas and reducing the amount of glucose produced by the liver. They're not prescribed on their own but are often used in combination with other diabetes medicines.

SGLT2 inhibitors reduce blood glucose levels by removing excess glucose from the blood into the urine. People usually take SGLT2 inhibitors when metformin or sulphonylureas are not enough, or if they can't take them. They may help reduce the risk of heart problems for some, and may help to protect kidney function for those with kidney disease.

GLP-1 (glucagon-like peptide-1) agonists reduce the level of glucose in the blood by increasing the amount of insulin produced and reducing the amount of glucose produced by the liver. They also help to slow the emptying of the stomach so glucose is absorbed more slowly and in turn reducing the appetite. GLP-1 agonists may help to lower the chance of heart problems in some people and also help with weight loss.

They're mostly given as injections under the skin. A health professional can show you how to use them properly.

GIP/GLP-1 agonists lower blood glucose levels, assist in weight loss and reduce the build-up of fat in your liver that can lead to inflammation. It is given as an injection under the skin; your healthcare professional will show you how to do this for yourself.

Thiazolidinediones, also known as **glitazones**, work by helping the body to use insulin better and allowing glucose to be used more efficiently. They also reduce the amount of glucose produced by the liver. People usually take glitazones when metformin or sulphonylureas are not enough, or if they can't take them.

Acarbose is not commonly used but may be a second choice if other medications are unsuitable. It works by slowing the digestion of carbohydrates in the small intestine after a meal, which reduces the absorption of glucose into the bloodstream.

Will I need to use insulin?

The hormone insulin, made by the pancreas, helps to maintain your blood glucose level.

When your blood glucose level goes up after eating, more insulin is released to allow glucose to move from your bloodstream into your cells. Insulin injections are needed when your body doesn't produce enough insulin to maintain blood glucose levels. People with type 1 diabetes always require insulin while people with type 2 diabetes may need insulin if their glucose levels are not managed by other medications, a healthy eating plan and exercise.

Insulin doesn't replace a healthy eating plan and a regular activity program, and you may still need other medications as directed by your doctor.

If you need insulin, you may be able to manage your blood glucose levels with an injection through the skin into the fatty tissue using a syringe or an injection pen, or a pump if you need a very high daily dose of insulin.

How to use insulin

There are several types of insulin. Some work quickly in your body, and others work slowly over 24 hours or more. Depending on your lifestyle and blood glucose targets, your insulin usage may vary. The type and amount of insulin you need can also change over time and when you are unwell, so it's important to regularly review your diabetes care plan with your doctor or other diabetes health professional.

While using insulin may seem difficult and frightening at first, your treating team (diabetes educator, GP and pharmacist) can help you adjust to the new routine. Even with their help, it often takes a while to find the right routine to manage your blood glucose levels and suit your lifestyle. If you're worried or unsure about any of your medications, what they are for or how and when to use each one, don't be afraid to talk to your pharmacist or GP. There's a lot to learn when it comes to diabetes management, and it can be confusing and overwhelming.

Because insulin works to remove excess glucose from the blood, people who use insulin may be more likely to develop low blood glucose levels (hypoglycaemia) if they take too much insulin, or if it's combined with other things that lower blood glucose levels, such as exercising or skipping meals. Talk to your doctor or pharmacist on how best to manage this.

Preventing and managing complications

If it's not managed, type 2 diabetes puts you at risk of a range of health conditions including heart disease, stroke, kidney damage, eye diseases and foot problems.

Diabetes Annual Cycle of Care

The diabetes annual cycle of care is a checklist for reviewing your diabetes management and general health. This review is available on the Medicare Benefits Schedule (MBS), which means you will receive a Medicare rebate for this service. The annual cycle of care can help find any health problems early and reduce your risk of complications. It includes the following health checks:

Health check	How often?
HbA1c	At least every 6 to 12 months
Blood pressure	At least every 6 months
Foot checks	Every 3-12 months depending on risk
Eye checks	At least every 2 years
Kidney health	Urine and blood test every 12 months
Blood lipids	At least every 12 months
Medication	At least every year
Weight/waist circumference	At least every 6 months
Lifestyle	Review of your healthy eating plan, physical activity, alcohol intake and emotional health at least every 12 months or as needed



Look after your heart and blood vessels

People living with diabetes are 2-4 times more likely to develop heart and blood vessel (cardiovascular) disease, which includes heart attack and stroke. They can also develop heart disease much earlier than people without diabetes. This is because diabetes can change the chemical make-up of some of the substances found in the blood, which can cause blood vessels to narrow or clog up.

That's why it's so important to not only manage your blood glucose levels, but also think about your heart and blood vessel health. This means considering lifestyle factors like smoking, how much alcohol you drink, your weight, and also monitoring your blood pressure and cholesterol levels.

To lower your risk of cardiovascular disease (CVD) your doctor is likely to set individual targets for you.

The general recommendations are:

HbA1c level of no more than 53 mmol/mol (7%)

Not smoking

Blood pressure under 140/90

Weight loss of 5-10% if you are overweight or obese

No more than 10 standard drinks a week, and no more than 4 on any one day

Blood lipid (fat) levels according to recommended targets:

- Total cholesterol < 4.0 mmol/L

- HDL-cholesterol \geq 1.0 mmol/L

- LDL-cholesterol < 2.0 mmol/L (<1.8 mmol/L if you already have CVD)

- Triglycerides < 2.0 mmol/L

If you are at high risk of cardiovascular disease your doctor may prescribe cholesterol and blood pressure lowering medication in addition to lifestyle advice.

Check your kidneys

Good management of blood glucose levels and blood pressure reduces your risk of blood vessel and nerve damage in the kidneys that leads to kidney disease.

Protein in the urine (proteinuria) is an early warning sign of kidney damage, and the presence of a particular component of protein (microalbuminuria) is a sign of high cardiovascular disease risk. So, if you have diabetes it's important to have your urine albumin creatinine ratio (ACR) and your kidney function checked every year. This is usually done through a simple urine and blood test with your GP.

Take care of your feet

Foot problems are a common cause of hospitalisation for people with diabetes. Your feet are at risk because blood vessel and nerve damage lead to a lack of circulation and loss of feeling in the feet, so when a foot injury happens you may not notice it. The untreated injury can then become infected and if it's severe enough you may need hospital treatment and even surgery.

You can prevent this by monitoring and managing your blood glucose levels and checking the condition of your feet daily. Check the tops and bottoms of your feet and in between the toes for any redness, swelling, cuts or pus. If you can't reach or see your feet, use a hand mirror or ask someone else to help. Always report any problems (like foot ulcers, reduced circulation or sensation, or abnormal foot structure) to your GP immediately.

Pay attention, too, to foot hygiene and footwear. Avoid getting shoes that are too tight by buying them in the late afternoon or evening, when feet are usually the most swollen. Your podiatrist can also help you assess if your shoes are right for you and teach you how to look after your feet to reduce the risk of damage.

Even if you don't have foot problems now, it's a good idea to ask your GP or podiatrist to let you know what your risk of developing foot complications is. This will help you know how often you need your foot health checked. It's recommended you have your feet checked by your GP or podiatrist every 3-6 months if you're at intermediate-to-high risk, and every 12 months if you're at low risk. For more information about looking after your feet, including how-to guides and videos visit www.footforward.org.au

Watch out for eye damage

People with diabetes are more likely to develop eye complications, including cataracts (clouding of the eye lens), retinopathy (damage to the blood vessels of the retina), and the most common cause of vision loss in people with diabetes, maculopathy (damage to the macula).

When you're diagnosed with type 2 diabetes, have an initial eye check with an optometrist or ophthalmologist (eye specialist). Then have your eyes checked every 1-2 years, or more often if you have eye problems. About half of people with diabetes in Australia aren't getting their eyes checked, which means eye damage may be identified too late, when treatment is less effective.



KeepSight

If you have diabetes, make sure you sign up to KeepSight, a national diabetes eye screening program designed to make it easier for people to remember to have regular eye checks. Once you've registered, you'll receive reminders and prompts to have regular diabetes eye checks.

Visit www.keepsight.org.au for more information.

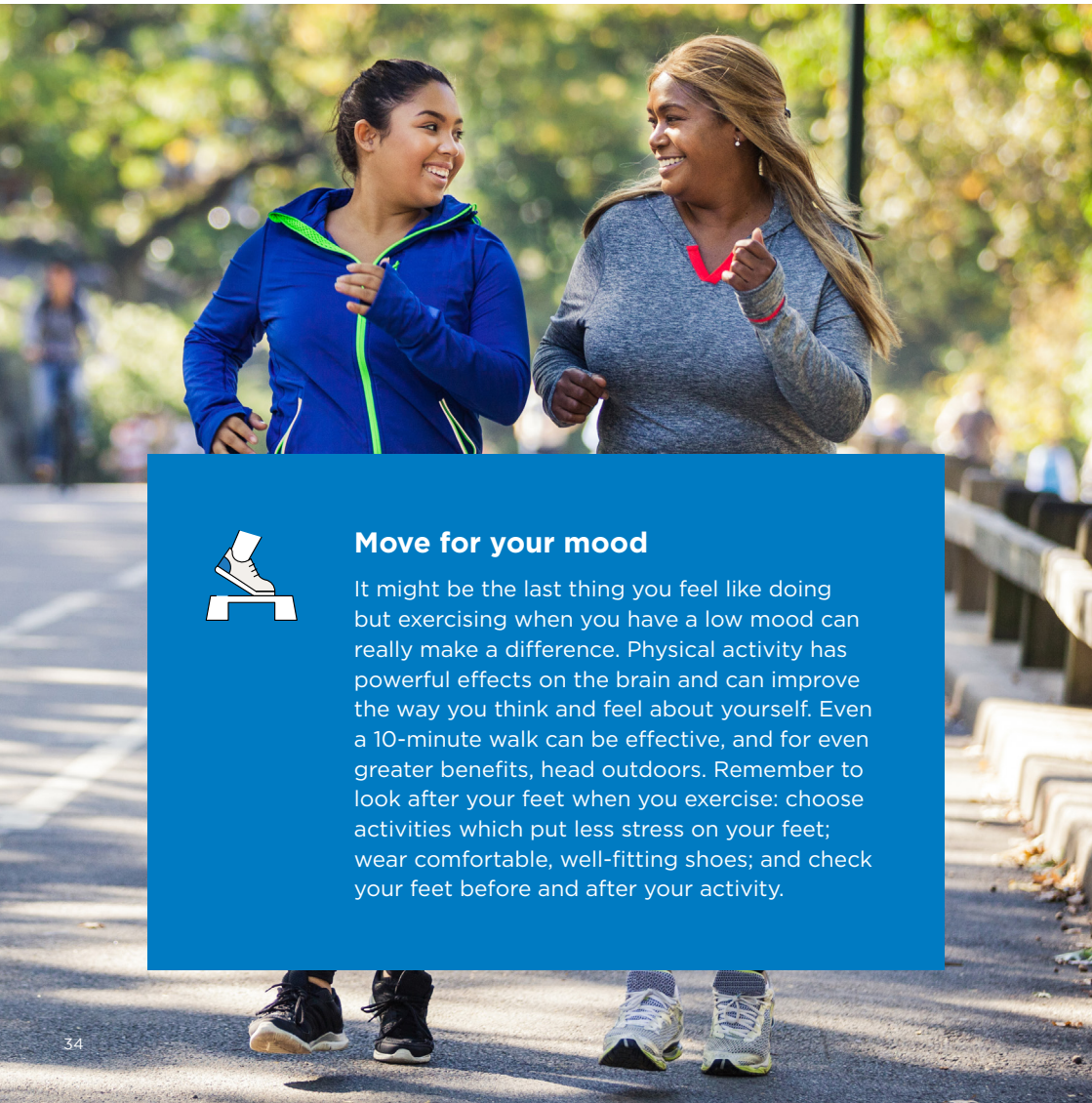
Care for your mental health

Diabetes can be hard to live with, and after your diagnosis you can experience a range of emotions: shock, denial, sadness, fear, frustration and often all of these at the same time. Managing your diabetes can also be tiring and worrying. You'll need to keep to healthy living habits every day including paying attention to your diet and exercise, and in some cases check blood glucose levels and take medication regularly also.

Feeling worried about your diabetes doesn't necessarily mean you have a mental health condition, but if you do, you're not alone. Depression and anxiety are the most common mental health conditions in Australia. If you feel like you're struggling with your mental health, talk to your doctor or diabetes health professional. Talking to a qualified medical professional is often the first step to getting the help you need to care for your mental health and wellbeing.

Share your experiences

Having diabetes can feel isolating if you don't know anyone else living with it. A diabetes peer support group is a group of people with diabetes who regularly get together to share information, experiences and knowledge. Some groups are run face-to-face, others are online. To find out about groups in your area or a suitable online group, visit peersupport.ndss.com.au or call the NDSS helpline on **1800 637 700**.



Move for your mood

It might be the last thing you feel like doing but exercising when you have a low mood can really make a difference. Physical activity has powerful effects on the brain and can improve the way you think and feel about yourself. Even a 10-minute walk can be effective, and for even greater benefits, head outdoors. Remember to look after your feet when you exercise: choose activities which put less stress on your feet; wear comfortable, well-fitting shoes; and check your feet before and after your activity.

Other considerations when managing type 2 diabetes



Sick days

Feeling sick can make it harder to manage your blood glucose and can often lead to increased blood glucose levels. It's important to develop a sick day management plan with your GP, diabetes specialist or diabetes educator. This plan usually includes:

- how often you need to measure your blood glucose levels
- what medicines to take and any dose changes required
- any changes you may need to make to your eating habits
- when to call your GP or get additional help and support.

Driving

If your diabetes is well managed, you'll be able to hold a driver's licence as long as you satisfy certain medical standards. You can check these with the relevant driver licensing authority in your state or territory. The main concern authorities have is the possibility of unexpected 'hypos' when taking glucose-lowering medications, or from complications such as reduced sensation in the feet and vision loss. It's a good idea to check your blood glucose level before driving to make sure it's 5 mmol/L or higher, and to keep quick-acting carbohydrate foods on hand (either in your bag or in the car) in case you experience signs of hypoglycaemia while driving.

Complementary medicines

Complementary medicines like herbs, vitamins, and minerals are often used as well as (to complement) conventional medicine. Many Australians take complementary medicines daily, but before you do take them ask your doctor: Is it safe? Will it work? And will it affect my diabetes or interact with my medication?

Despite being considered natural, complementary medicines aren't always safe. Some herbal products, for example, may increase insulin resistance or blood glucose levels. Make sure your doctors and pharmacist know that you have diabetes and are aware of all the medications – complementary, over-the-counter and prescribed – that you take. This will help you manage your overall health better.

Your family

Diabetes often has a hereditary component, which means it can run in families. Talk to your doctor about whether your family members need to have regular checks to detect the early signs of diabetes. If it can be detected early on there are likely to be fewer complications.

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For more information

For more information and support, contact:

- Your GP, diabetes specialist or diabetes educator
- Diabetes Australia on **1800 177 055** or at **www.diabetesaustralia.com.au**
- NDSS (National Diabetes Services Scheme) on **1800 637 700** or at **www.ndss.com.au**



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9617-04-23

Last updated: June 2023

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