

staying well with diabetes

Over time, high blood glucose levels can damage the body's organs. However, the good news is that most diabetes-related complications can be prevented. This information sheet will help you to know the risks and what you can do to reduce your risk or even prevent getting complications at all.

What are the most common complications of diabetes?

- Damage to the big blood vessels (macrovascular/cardiovascular complications) leading to heart attack and stroke.
- Damage to the small blood vessels (microvascular complications) causing problems in the eyes, kidneys, feet and nerves.
- Other parts of the body can be affected by diabetes including the digestive system, skin and immune system. Although not considered a complication, people with diabetes may have more thyroid problems than people without diabetes.

Cardiovascular disease (blood vessel disease, heart attack and stroke) is the leading cause of death in all Australians. However, in diabetes the risk is greater. People with diabetes often have increased cholesterol and blood pressure levels. When these are combined with increased blood glucose levels the risk of cardiovascular disease increases.

Smoking, having a family history of cardiovascular disease and being inactive also increase the risk.

What can happen if big blood vessels are damaged?

Damage to the big blood vessels can lead to heart attack and stroke.

Heart attack – typical symptoms can include:

- squeezing or crushing chest pain going down the arms
- arm or jaw discomfort
- feeling anxious, sweaty, breathless or weak.



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By aiming to keep your blood glucose, HbA1C and blood pressure at recommended levels, not smoking, being physically active, eating healthily, losing weight if you need to and taking the advice of your diabetes team, you can significantly reduce your risk of complications.



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Heart attack – people with diabetes may have different symptoms such as:

- no signs at all, leading to a 'silent' heart attack
- indigestion, bloating and nausea.

Women in general and particularly those with diabetes are more likely to have these and/or other symptoms.

Stroke – symptoms can include:

- feeling dizzy
- feeling confused
- loss of strength or movement of the face, arm and/or leg on one side of the body
- loss of feeling of the face, arm and/or leg on one side of the body
- double or blurred vision
- droopy smile or finding it hard to talk or swallow.

If you think you might be having a heart attack or stroke, dial 000 immediately and if possible, call someone for help.

Blockage of blood vessels feeding the legs – symptoms can include:

- pain in one or both legs when walking (intermittent claudication)
- loss of hair growth, shiny skin on legs
- cold, discoloured feet
- slow-healing skin wounds.

How to reduce the risk of damage to big blood vessels

There are a number of things which can be done to reduce the risk or even prevent damage to the big blood vessels. This can help you to stay well with diabetes.

What you can do to reduce the risk of damage:

- **Test** your blood glucose levels as recommended.
Aim to keep your blood glucose levels between 4–7 mmol/L before meals. Refer to the *Blood Glucose Monitoring* information sheet and talk to your doctor or diabetes educator.
- **Don't smoke.**
If you smoke – stop! If you feel you can't give up smoking on your own, ask for help (call Quitline 137 848).
- **Be physically active.**
Do at least 30 minutes of moderate physical activity on most, if not all, days of the week.
- **Follow a healthy eating plan.**
Talk to a dietitian. Also refer to the *Food Choices for People with Diabetes* information sheet.
- **Lose weight.**
Losing even a small amount of weight (if overweight) will help reduce your blood pressure, blood glucose and cholesterol levels.
- **Look after your feet.**
Check your feet every day and if concerned, see a podiatrist. Try to choose footwear which protects your feet (refer to the *Diabetes and Your Feet* information sheet).

What your diabetes team can do to reduce the risk of damage:

- **Cholesterol**
Your diabetes team should arrange to have your cholesterol and triglycerides checked at least once a year*.
- **Blood pressure**
Every time you visit your doctor, have your blood pressure checked. As a general guide, the ideal is less than or equal to 130/80 (less than 140/90 in the elderly).
- **HbA1c** (glycated-haemoglobin)
This test shows an average of your blood glucose levels over the past 10–12 weeks and should be arranged by your diabetes team every 3–6 months*. Aim to keep HbA1c levels under 7%.
- **Aspirin**
Ask your doctor if you should be taking low dose aspirin as it can help to protect you from heart attack.

* Unless otherwise recommended.

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What cholesterol level do I aim for?

While the ideal total cholesterol level is less than 4.0 mmol/L, it's important to know there is 'bad' cholesterol and 'good' cholesterol.

- LDL cholesterol is known as 'bad' cholesterol. Higher levels of LDL cholesterol increase your risk of heart and blood vessel disease. LDL cholesterol should be less than 2.5mmol/L.
- Triglycerides are another kind of blood fat that increases the risk of heart disease. Triglycerides should be less than 1.5 mmol/L.
- HDL cholesterol is known as 'good' cholesterol. A level higher than 1.0 mmol/L helps to protect the heart and blood vessels.

How to reduce your cholesterol

- You can help reduce LDL cholesterol and triglycerides by avoiding saturated fats (fats from land animal products, palm oil and coconut products often found in processed foods) in the food you eat.
- If you drink alcohol, do so in moderation.
- Include healthy fats in moderation.
- Regular physical activity will also help reduce the 'bad' cholesterol and at the same time increase your 'good' cholesterol.

What can happen if small blood vessels are damaged?

Small blood vessel damage in diabetes can affect the eyes, kidneys, nerves and feet.

The eyes

• **Blurred vision**

When blood glucose levels are high (eg: at the time of diagnosis) there may be changes in the shape of the lens of the eye causing blurred vision. This usually goes away when blood glucose levels return to a lower level.

• **Cataracts**

A cataract is a 'clouding' of the eye lens that can also cause blurred vision. Cataracts are more common in people with diabetes and can occur at a younger age than for those without diabetes. They can be repaired with surgery.

• **Glaucoma**

Glaucoma occurs when pressure in the eye is too high. This can damage the nerves that connect the eye to the brain and lead to blindness. However, early treatment can stop further vision loss.

- **Retinopathy**

This is a condition where the tiny blood vessels at the back of the eye are damaged by elevated blood glucose levels over a period of time. These damaged blood vessels can cause loss of vision if they leak, bleed or become blocked. Many people don't notice any problems in their sight until retinopathy is well advanced. So it is very important to have an ophthalmologist or qualified optometrist check your eyes at least every 2 years*. Early detection and laser treatment can prevent further damage and loss of vision.

How to reduce the risk of eye damage

- Keep your blood glucose levels, HbA1c and blood pressure at recommended levels.
- If you do notice any changes in your vision, contact your doctor or eye specialist immediately.
- If you have type 2 diabetes, your eyes should have been checked by an ophthalmologist at the time you were diagnosed then at least every 2 years* – more often if problems already exist.
- If you have type 1 diabetes, your eyes should be checked five years after you were diagnosed then every year* – more often if problems already exist.

The kidneys (renal disease)

Increased blood glucose levels over time and elevated blood pressure can increase the risk of long term damage to the kidneys (nephropathy). People with diabetes are likely to have urinary tract infections more often than people without diabetes which can cause or worsen damage to the kidneys.

How to reduce the risk of kidney damage

- Keep your blood glucose levels, HbA1c and blood pressure at recommended levels.
- Drink plenty of water unless you are given specific advice to limit your fluid intake.
- Your doctor should arrange a urine test for microalbuminuria (tiny pieces of protein in the urine) every year*. You may need other kidney function tests as well.
- Talk to your doctor about blood pressure medications called ACE inhibitors and Angiotensin Receptor Antagonists which also help to protect the kidneys. You can be on these medications without blood pressure problems.
- If you think you have a bladder or kidney infection, contact your doctor immediately. Symptoms can include cloudy or bloody urine, passing water more often and/or feeling the need to pass water more often and/or a 'burning' when passing water. Incontinence (bed wetting or loss of bladder control) can be a sign, as can increased blood glucose levels.
- If you have kidney disease, keeping blood pressure under 125/75 can help to slow damage.

* unless otherwise recommended.

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The nerves (neuropathy)

- Nerve damage can be caused by high blood glucose levels, drinking large amounts of alcohol and other disorders.
- Damage can occur to the 'feeling' (sensory) nerves affecting the legs, arms, hands, chest and stomach.
- There can also be damage to the nerves that control actions of body organs (autonomic nerves). This can cause problems with stomach emptying (gastroparesis), intestines (diabetic diarrhoea or constipation) and the genitals (erectile dysfunction). For more information refer to the *Sexual Health and Diabetes* information sheet.

What are the symptoms of nerve damage?

These can include the following:

FEET AND HANDS

- Pins and needles
- Tingling or pain
- Lack of feeling

STOMACH EMPTYING (GASTROPARESIS)

- Changes in the speed of stomach emptying which can affect blood glucose levels
- Nausea and vomiting
- Bloating
- Heartburn and feeling constantly full

INTESTINES

- Constipation (the most common digestive problem in diabetes)
- Loose stools especially at night (diabetic diarrhoea)

ERECTILE DYSFUNCTION

- Not being able to get or keep an erection long enough for intercourse.

How to reduce the risk of nerve damage

- Keep your blood glucose and HbA1C at recommended levels.
- Tell your doctor about any tingling, pain or numbness in your feet or hands.
- Tell your doctor about any digestive complaints and see an Accredited Practising Dietitian who may be able to help with your eating plan.
- Look after your feet and check them every day.
- Have a yearly foot check by your podiatrist, doctor or diabetes educator. For more information refer to the *Diabetes and Your Feet* information sheet.
- If you drink alcohol, have no more than 2 standard drinks a day for men and 1 standard drink a day for women*. It is a good idea to include alcohol-free days each week and best to drink alcohol with a meal or snack containing carbohydrate. For people with existing neuropathy, alcohol intake needs to be individually assessed. Speak with your health professional.

* NHMRC, Dietary Guidelines for Australian Adults (2003).

Does diabetes affect the skin?

The most common problem is very dry skin caused by damage to the small blood vessels and nerves.

How to reduce the risk of skin problems

- Keep your blood glucose levels and HbA1C as near to normal as possible to reduce the risk of skin infections.
- Don't let your house get too hot, especially in winter when the heaters are on and, if possible, increase the humidity.
- Protect your skin by wearing gloves if you are using household cleaners and solvents.
- Avoid very hot baths and showers and use non-scented soaps.
- Use a cream or lotion on your skin after bathing, preferably one that is perfume-free.
- Check your feet every day. If you have dry, rough or cracked skin on your feet, see your podiatrist or doctor and refer to the *Diabetes and Your Feet* information sheet.
- See your doctor if your skin is very dry or irritated.

Are there other parts of the body at risk of damage?

Teeth and gums

People with diabetes can have a higher risk of tooth decay and gum infections when their blood glucose levels are high. Tooth and gum infections can increase your risk of heart disease.

Signs of dental problems:

- Dry mouth and/or burning tongue
- Red, sore, swollen or bleeding gums
- White film on your gums, inside cheeks or tongue

How to reduce the risk of problems

- Regularly visit your dentist, who needs to know that you have diabetes and will show you how to care for your teeth and gums.
- If you have a dry mouth, drink water in preference to drinks containing sugar or alternative sweeteners. Sugarless gum can help increase saliva production.

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Immune system

The immune system helps to ward off and fight infection. By slowing the action of white blood cells, high blood glucose levels make it more difficult to prevent and fight infection.

How to reduce the risk of infection

- Keep your blood glucose levels in target range
- Get plenty of rest
- Wash your hands often
- All people with diabetes should have a yearly influenza (flu) injection. Ask your doctor about a pneumonia injection.

Thyroid

Although diabetes doesn't directly cause thyroid problems, studies show an increased risk of hypothyroidism (low thyroid levels) in people with type 1 and type 2 diabetes, especially in women over 40.

How to reduce the risk of problems

- Your doctor may recommend a test for thyroid function (TSH) every 5 years.

Remember, most diabetes-related complications can be prevented. The doctor and health care team helping you to look after your diabetes will advise you if any of the recommended checks or tests need to be done more frequently to manage your diabetes more effectively.



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