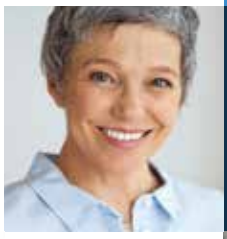
National Diabetes Services Scheme

An Australian Government Initiative

NDSS Helpline 1800 637 700
ndss.com.au

Information for people with type 1 diabetes



Find this resource at ndss.com.au

diabetes australia

The NDSS is administered by Diabetes Australia

Contents

Version 12.1 November 2024. First published July 2016.
NDSSA5B001T1

This information is intended as a guide only. It should not replace individual medical advice. If you have any concerns about your health, or further questions, you should contact your health professional.

Recognition Statement

The National Diabetes Services Scheme (NDSS) recognises the diverse communities of Aboriginal and Torres Strait Islander people as the first people of Australia and acknowledges their continuing connection to land, waters and culture. We pay our respects to all Elders past, present and future.

How to use this booklet

You will not need all the information in this booklet straight away.

This booklet is divided into sections covering the following information:

- Getting to know the NDSS and what products and services are available to you.
- Understanding type 1 diabetes.
- Learning how you can start managing your diabetes from day to day. (There is a separate booklet for people with type 2 diabetes.)

You can take this booklet to your appointments to discuss topics with your health professionals. There are suggested questions at the end of most sections to guide you.

Throughout this booklet there are links to specific NDSS resources. Use the search function on the website to find:

Information is available to download, print, listen to or to view. You can also call the NDSS Helpline on **1800 637 700** to ask for a copy to be sent to you.


Web pages


Fact sheets or booklets


Audio option available on each web page.

Get information in your language


Information for young people


Information for Aboriginal and Torres Strait Islander peoples


Information for older people

Welcome and introduction

Welcome to the National Diabetes Services Scheme

Introduction

Being diagnosed with type 1 diabetes can be overwhelming.

You may feel relieved at having a diagnosis to explain the symptoms you have been experiencing. You could also be feeling disbelief, sadness, anger or self-blame. Usually, these feelings ease as you:

- learn more about diabetes and how to manage it
- ask questions
- involve your family and friends
- connect with peers and your health professionals
- plan and set goals.

As a parent or carer of someone diagnosed with type 1 diabetes, you may also feel overwhelmed, distressed or even guilty. It is important that you ask for help and support to look after yourself. Keep in regular contact with health professionals. It may help to connect with other parents or carers of someone with type 1 diabetes.

What is the NDSS?

The NDSS is an initiative of the Australian Government administered by Diabetes Australia. It has been administered by Diabetes Australia since it started in 1987. Registration with the NDSS is free and open to all Australian residents diagnosed with diabetes.

Through the NDSS people with diabetes can access:

- support services such as face-to-face and online self-management education programs for practical help and guidance
- digital and printed diabetes and health information and resources
- subsidised diabetes products.

Stay up to date

The way you manage your diabetes can change over time. Services and products also change regularly. Keep in touch with the NDSS and your health professionals. Update your details at **ndss.com.au/manage-your-registration** or by calling the NDSS Helpline **1800 637 700**.

Now you are registered, you can book into face-to-face and online services at **events.ndss.com.au** or by calling the NDSS Helpline **1800 637 700**. You can also access subsidised diabetes products at community pharmacies (these are called NDSS Access Points (see page 18)).

Call the NDSS Helpline on 1800 637 700 to:

- Request a replacement card
- Speak with a diabetes health professional
- Find out about services near you
- Find out about products and where and how to get them

Monday to Friday 8:30am – 5:00pm

Follow us on **Facebook** or **Twitter** for information and updates.

If you are deaf, or have difficulties with hearing or speech:
TTY (teletypewriter) **133 677**
Speak and Listen on **1300 555 727**

National Relay Service
nrschat.nrscall.gov.au/nrs/internetrelay and enter the NDSS Helpline number **1800 637 700**.

If you need help with English, call: Translating and Interpreting Service (TIS): **131 450**. State your language. Wait to be connected to an interpreter, then ask for the NDSS Helpline on **1800 637 700**.

Your health care team

You are not alone. You can include diabetes specialists and other health professionals in your health care team. You can also invite family members, friends or a carer to be part of your health care team.

You may not need all the health professionals shown here. Talk to your doctor about how to set up your health care team.

Doctor or GP: Oversees your primary health care, prescribes medicines, monitors your health, may refer you to specialised and allied diabetes health services.

Diabetes educator: A health professional who can help you to manage your diabetes. A credentialled diabetes educator (CDE) is a health professional who has specialised in diabetes education and care. They can help you learn how to manage and monitor your health with diabetes and provide advice on effects of food and exercise, insulin and monitoring your blood glucose levels. You can find a CDE near you at **adea.com.au/find-a-cde**.

Endocrinologist: Medical specialist in diabetes. A physician may provide specialist diabetes care in some circumstances.

Dietitian: Provides advice and support with healthy eating habits and balancing insulin and food.

Pharmacist: Dispenses medicines and provides advice on medications, insulin and diabetes products.

Podiatrist: Checks the health of your feet routinely and provides advice on caring for your feet.

Exercise physiologist or physiotherapist: Provides advice and supports you with being physically active.

Psychologist, counsellor, social worker: Provides emotional and psychological support.

Optometrist: Checks your eye health (may refer you to an ophthalmologist for treatment).

Ophthalmologist: Medical specialist in eye care and management.

Dentist: Checks the health of your teeth and gums routinely.

Aboriginal and Torres Strait Islander Health Worker: Provides local and culturally appropriate information and support for Aboriginal and Torres Strait Islander people.

Diabetes nurse practitioner: A registered nurse who has specialised in diabetes care and management and is qualified and authorised to practice in an advanced and extended clinical role. This is different to a practice nurse working with a GP.

You can search for health professional in your area at **healthdirect.gov.au/australian-health-services**.

Next steps

» Understand type 1 diabetes (see page 21).

» Ask your doctor about a diabetes care plan so together you can set goals and targets, and link to the other health professionals who can support you (see page 8).

» Talk to your doctor and health professionals about health checks and the annual cycle of care (see page 51).

» Learn how you can manage your diabetes by:

- discovering more about nutrition and carbohydrates (carbs) (see page 26), insulin (see page 46), monitoring blood glucose levels (see page 33), managing hypos (see page 39) and sick days (see page 58).
- attending local education and support programs (see page 12).

» Find out which diabetes products you may need and where you can access them (see page 18).

» Begin exploring the different aspects of living with type 1 diabetes (see page 53), for example early childhood care, school, driving, work and travel, aging and retirement.

Young people with diabetes

Older people with diabetes

Aboriginal and Torres Strait Islander peoples

People from diverse backgrounds

Living in rural and remote areas

Adjusting to life with diabetes

Peer support for diabetes

NDSS services

How do I access NDSS services?

Now that you are registered you can access various support, information and education services. To find out more, go to **ndss.com.au**, call the NDSS Helpline on **1800 637 700** or contact your state or territory diabetes organisation (see page 16).

Do I need to pay for NDSS services?

NDSS services are free with the exception of a small contribution for children and teens attending camps. Your state or territory diabetes organisation (NDSS Agent) manages face-to-face services.

What kinds of services are available to me?

Through the NDSS you can access:

- information about diabetes self-management
- online and face-to-face programs and activities, such as self-management education programs
- fact sheets, booklets and other resources about type 1 diabetes
- peer support groups
- subsidised diabetes products through community pharmacies
- the NDSS Helpline on **1800 637 700** and website at **ndss.com.au**.

How do I access information and resources?

You can find information on all the topics covered in this booklet.

Use the links included in each topic.

Or go to **ndss.com.au/resources**.

Or call the NDSS Helpline on **1800 637 700** to order printed copies.

Translated information is also available.

The NDSS also provides reliable news and updates via: **ndss.com.au/news**

 Facebook  Twitter

My NDSS

My NDSS is an easy and secure way to access your information online and in one place. You can use My NDSS to view and update your details, see product purchases and eligibility, book into free programs and events, and get a digital copy of your NDSS card. Go to **events.ndss.com.au/signin**.

Support programs

Type 1 diabetes education programs

Type 1 diabetes and Me

When you've been diagnosed with type 1 diabetes, it can feel like there is a lot to learn. Type 1 Diabetes and me is an online hub where you can learn more about type 1 diabetes and the steps you can take to manage it each day. Go to **type1diabetesandme.ndss.com.au**.

OzDAFNE

This is a face-to-face multi-day program for small groups of adults with type 1 diabetes. The program covers managing your insulin use, carb counting, understanding hypoglycaemia (also known as hypo or low blood glucose level), exercise and illness.

Short education programs and activities

There are a number of face-to-face and online short programs and activities on topics that can help you learn about managing your diabetes:

- **Learn about carbs,** the different types and the amount that is best for you.
- **Learn about footcare** for diabetes and how to check and look after your feet.
- **Learn about monitoring** and how to check your blood glucose levels at home and how to use these results to best manage your diabetes.
- **Learn about shopping** to help you make healthy food choices and understand food labels.

» **Learn about insulin**, what it is and how to use it.

» **Learn about physical activity** including the benefits, and how to get started in making physical activity part of your daily routine.

Peer support

Peer support brings people with similar experiences together, to share lived experiences and support, encourage and learn from one another. Peer support programs can be face-to-face or online. You can also connect with others living with diabetes at NDSS programs. Go to **peersupport.ndss.com.au** to explore peer support options.

Diabetes in Schools

This national program aims to provide information and training for parents and families, principals, school staff and health professionals, so students with type 1 diabetes can be supported to manage their condition at school. Go to **diabetesinschools.com.au**

These are some examples. Go to **ndss.com.au/services/support-programs** to find a program or activity to meet your needs. To find out more and what services are available online, or face-to-face near you, go to **events.ndss.com.au** or call the NDSS Helpline on **1800 637 700**.

Support programs

Programs in other languages

Aboriginal and Torres Strait Islander communities program

Diabetes organisations

Diabetes Australia

Diabetes Australia was established in 1984 and is the national body for people affected by all types of diabetes and those at risk. Through leadership, prevention, management and research, Diabetes Australia is committed to reducing the impact of diabetes. We work in partnership with diabetes health professionals and educators, researchers and healthcare providers to minimise the impact of diabetes on the Australian community.

Diabetes Australia is a respected and valued source of information, advice and views utilised by government and the community. Our credibility and independence as a national voice allows us to translate knowledge and evidence into advocacy and programs for diabetes.

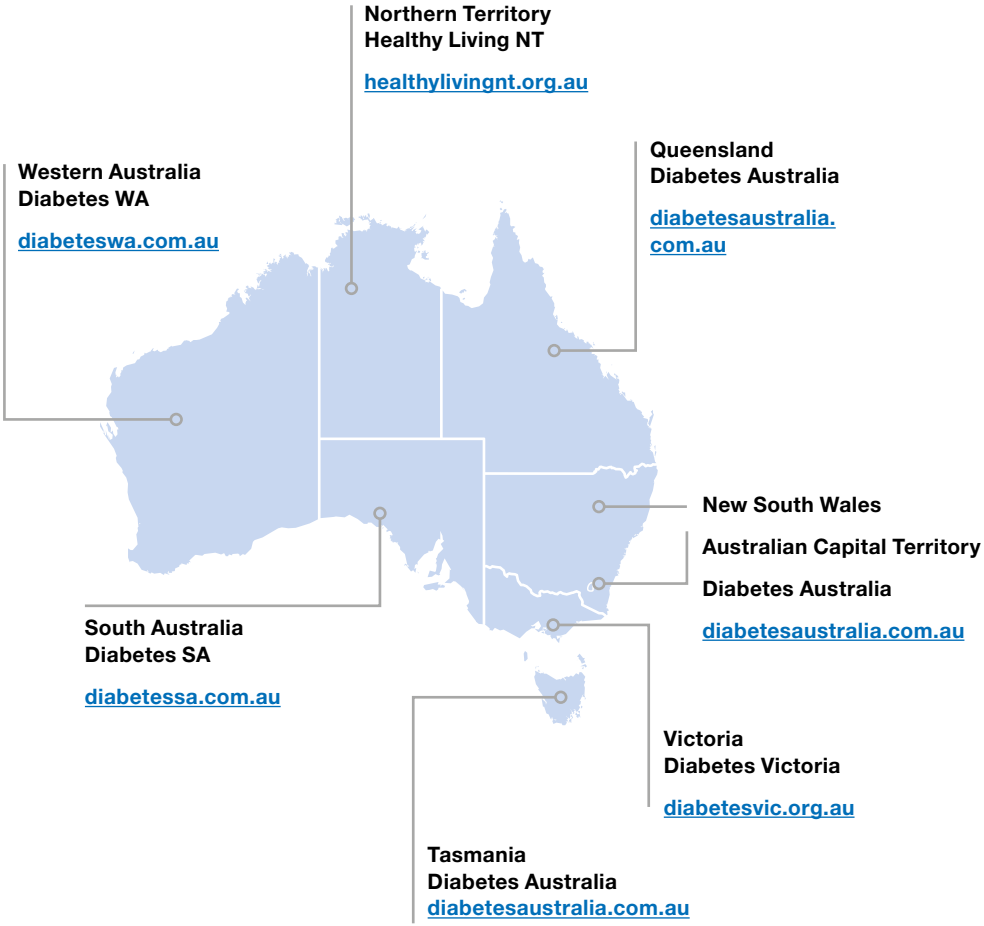
Through leadership, prevention, management and research, Diabetes Australia is committed to reducing the impact of diabetes. Diabetes Australia has administered the NDSS since it began in 1987.

Phone: **1800 177 055**

Email: **info@diabetesaustralia.com.au**
Website: **diabetesaustralia.com.au**

State and territory diabetes organisations

All state and territory organisations are not-for-profit, member-based registered charities. Diabetes Australia appoints these organisations to be 'NDSS Agents' and provide NDSS support services within their state or territory. Your state or territory organisation can introduce you to the diabetes community, services and programs near you.


Northern Territory
Healthy Living NT
healthylivingnt.org.au
Western Australia
Diabetes WA
diabeteswa.com.au
Queensland
Diabetes Australia
diabetesaustralia.com.au
New South Wales
Australian Capital Territory
Diabetes Australia
diabetesaustralia.com.au
South Australia
Diabetes SA
diabetessa.com.au
Victoria
Diabetes Victoria
diabetesvic.org.au
Tasmania
Diabetes Australia
diabetesaustralia.com.au

NDSS products

Now that you are registered with the NDSS, you can access subsidised diabetes products at more than 5,500 community pharmacies around Australia. The pharmacies are sometimes called 'NDSS Access Points'.

To find a community pharmacy near you:

- go to our NDSS Online Service Directory at **ndss.com.au/services/online-services-directory** or to **healthdirect.gov.au/search-results/pharmacy**
- call the NDSS Helpline on **1800 637 700** or go to **ndss.com.au**.

What types of diabetes products are available through the NDSS?

You can access a range of subsidised products through the NDSS including:

- blood glucose monitoring strips
- urine monitoring strips
- insulin pump consumables
- subsidised continuous and flash glucose monitoring products
- fully subsidised insulin syringes and pen needles.

Insulin is not available through the NDSS. You will need a prescription from your doctor or diabetes nurse practitioner to get it from a pharmacy

Concession cards, quantities of products you can order, and planning for travel

- If you hold a valid concession card, you are eligible for extra subsidies.
- Your community pharmacy can order any subsidised diabetes products not in stock. This can take 24-48 hours or a bit longer in some regional and remote areas.
- Insulin pump consumables and continuous glucose monitoring (CGM) or flash glucose monitoring (Flash GM) products are not kept in stock (due to having a short shelf-life), so you must order them in advance (allow 24-48 hours, or longer if you live in rural or remote areas).
- To avoid wastage, do not over-order products as most have a use-by date.
- There are limits to the quantity of products you can access through the NDSS. You can find these limits at **ndss.com.au/products**.
- You can only order NDSS products while in Australia.
- If you are traveling overseas, you can order up to six months' supply to take with you. Products cannot be sent overseas through the NDSS.

Understanding diabetes

What is diabetes?

Diabetes is a condition where there is too much glucose (a type of sugar) in your blood. Glucose is our main source of energy. We get glucose from foods containing carbs like bread, pasta, rice, cereals, fruits, starchy vegetables, milk, yoghurt and sweets (see page 27). Glucose can also be stored and released when needed at times when you are not eating.

Your blood glucose levels are controlled by insulin, a hormone produced in the pancreas. As glucose enters your bloodstream, the pancreas releases more insulin. Insulin helps glucose to move from the bloodstream into your cells (such as muscle cells), where it is used for energy.

Generally, people develop diabetes due to:

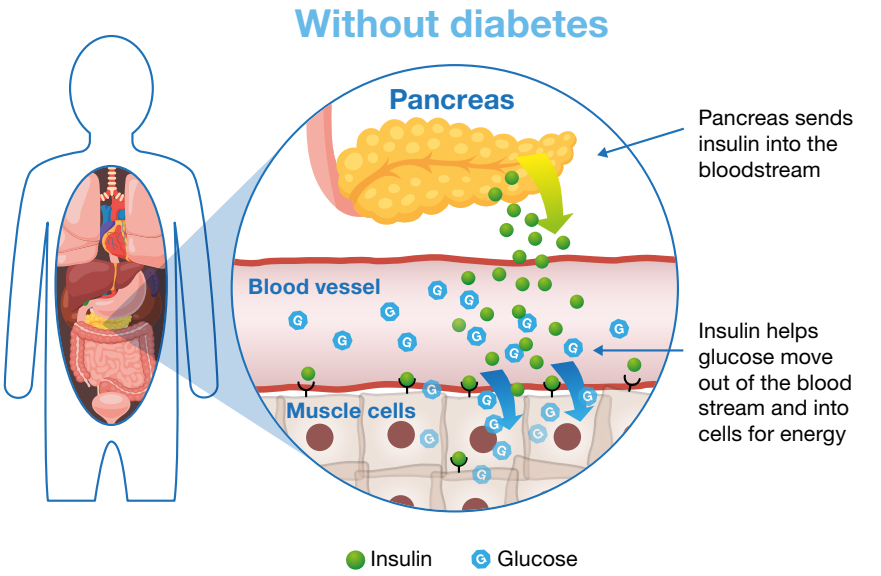
- your body becoming less sensitive to the effect of insulin (known as insulin resistance), OR
- your pancreas not making enough (or any) insulin.

High blood glucose levels can cause health problems (see pages 43 and 51). But with the right treatment and care, people with diabetes can live a healthy life.

What are the different types of diabetes?

The three most common are type 1 diabetes, type 2 diabetes and gestational diabetes. There are many other less common types of diabetes as well.

What happens in your body after you eat (carb) food?



Type 1 diabetes

With type 1 diabetes, your pancreas no longer produces insulin. This is because your body's defence (immune) system has damaged the insulin-making cells in your pancreas. These cells are called beta cells.

The cause of type 1 diabetes is not yet fully understood. Type 1 diabetes can develop at any age.

To manage type 1 diabetes, your health professionals will help you understand how to:

- give insulin (via injections or insulin pump)
- monitor your glucose levels throughout each day
- balance the insulin you take with the food that you eat, particularly carb foods
- manage your diabetes around activity, study or work, stress, being sick, hormonal changes and during pregnancy.

Type 1 diabetes and Me

Type 1 diabetes

Young people with diabetes

Understanding type 1 diabetes

Other types of diabetes

There are other less common types of diabetes. These include:

- diabetes resulting from specific health conditions, such as cystic fibrosis, pancreatitis, cancer, OR
- diabetes resulting from use of certain medications such as steroids (like prednisolone), immunosuppressants (taken after an organ-transplant) or some cancer medications.

Other types of diabetes

Questions for your health professionals

How will my diabetes change over time?

Who is my endocrinologist and how often will I see them?

How do I contact a credentialled diabetes educator if I have concerns?

What will make my blood glucose levels rise?

What will make my blood glucose levels go down?

How can I see a social worker, counsellor or psychologist to help me adjust to life with diabetes or reduce other stressors in my life?

How can I see a dietitian to help me with healthy eating and understanding carbs?

How can I see an exercise physiologist or physiotherapist to help me increase my activity levels safely?

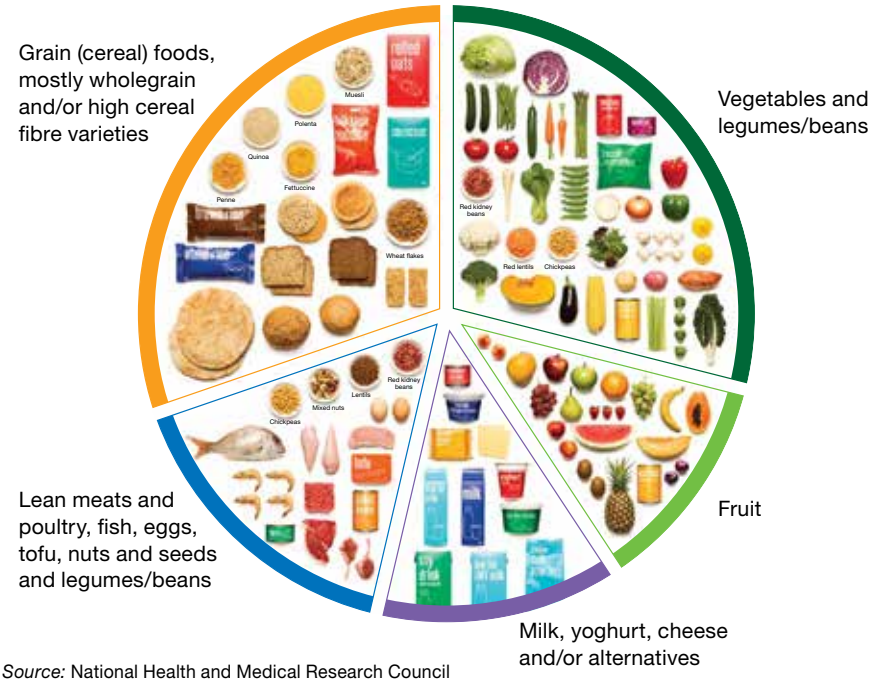
Nutrition and healthy eating

Now that I have type 1 diabetes, what do I eat?

You can eat the same healthy, balanced diet that is recommended for everyone.

Each person with type 1 diabetes will eat different foods depending on many factors including what they like, their cultural background, and their activity levels. Although it may be helpful to make some changes to your diet, you do not need to eat special foods or stop eating all the foods you enjoy.

Eat a variety of nutritious foods from each of the five food groups in the Australian Dietary Guidelines (**eatforhealth.gov.au/guidelines**).



Source: National Health and Medical Research Council

What foods and drinks will make my blood glucose levels rise?

Food and drinks that contain carbs have the biggest effect on your blood glucose levels. Carbs are broken down into glucose and enters your bloodstream. For example, when you eat rice it is broken down into glucose, which causes your blood glucose levels to rise.

Carb foods

Many carbs are an important source of energy as well as fibre, vitamins and minerals. Choose nutrient-rich carb foods, such as:

- wholegrain breads and cereals
- wholegrain pasta, brown rice, barley and quinoa
- starchy vegetables, like potato, sweet potato and corn
- legumes, like chickpeas, lentils and dried or canned beans
- fruit
- dairy foods, like milk and yoghurt.

Carbs: nutrient-rich

Eat less carbs that are nutrient-poor and high in added sugars, fats or salt, such as:

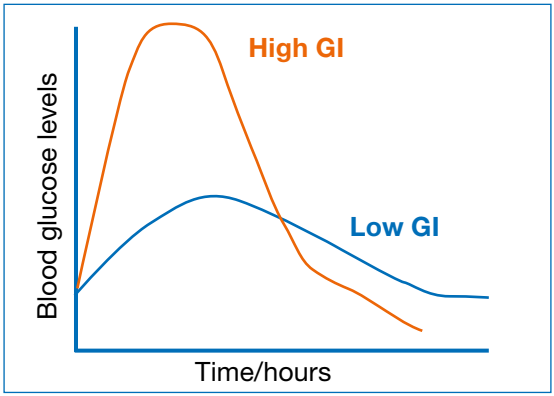
- cakes, biscuits, pies and pastries
- sugary drinks, like regular soft drinks and fruit juice
- sweets, lollies, and other sugary foods
- deep-fried takeaway foods.

Carbs: high added sugars, fats or salts

What is the glycemic index?

The glycemic index (GI) is a ranking of carbs according to how quickly they raise blood glucose levels after eating. For example, white bread (high GI) might raise blood glucose levels more quickly than wholegrain bread (lower GI).

Choosing low or intermediate GI carbs may help to manage the rise in blood glucose levels after you eat.



Source: **glycemicindex.com**

GI numbers are a guide only. Also consider the amount (portion) of carbs in the foods you eat and whether the food is a healthy choice.

Glycemic index

Carbohydrate counting

It is important to try and match the amount of carbs you eat and drink with the amount of insulin you take. You can learn how to estimate the amount of carbs in your food and drinks. This is called carb counting.

Carb counting helps you work out how much insulin you need for each meal. It will allow you to be more flexible with what and when you eat. Talk to your health professionals about learning how to do this.

Carb counting

What type of diet is best?

For some people, making some changes to what you eat can be helpful without following a specific meal plan.

> There is no single way of eating that suit everyone who has diabetes

Each person has different nutritional need and this changes across your lifetime, from childhood to adulthood and to older age.

Before making major changes to your diet, talk to your health professionals in case your insulin needs adjusting. A dietitian can give personal advice and work with you to develop an eating plan that suits your needs.

Understanding food labels

Healthy weight and type 1 diabetes

Before you were diagnosed with type 1 diabetes, you may have lost weight. When you start taking insulin, it is normal to put most of this weight back on.

In the longer term, maintaining a healthy weight will positively affect your overall health and can make it easier to manage your diabetes.

> Work with a dietitian to come up with some goals and an eating plan that suits your needs and lifestyle. To find a dietitian in your area, go to dietitiansaustralia.org.au/find-an-apd or call Dietitians Australia on **1800 812 942**.

Alcohol and diabetes

It is recommended that everyone limit the amount of alcohol they drink to no more than two standard drinks per day. For some people, not drinking at all is the safest option.

When you have diabetes, drinking more than the recommended amount of alcohol can:

- impair your judgment and your ability to make decisions about your diabetes management
- increase your risk of a low blood glucose level (also known as hypo or hypoglycaemia)
- cause you to gain weight due to the energy in the alcohol and the foods we often eat when drinking
- increase your risk of diabetes-related complications.

Talk to your health professionals about how you can safely enjoy a small amount of alcohol, if you choose to drink.

Alcohol

Alcohol and type 1 diabetes (for young people with type 1 diabetes)

Questions for your health professionals

How do I learn how to count carbs?

How can I adjust my insulin to suit my meal choices?

Are there guides or Apps to help me with carb counting?

What can I do if my child refuses food or is a fussy eater?

What is my healthy weight range?

Is timing of meals important?

What happens if I skip meals?

Will insulin affect my appetite or weight?

If I choose to drink alcohol, how can I do this safely with regards to my diabetes?

Introduction to diabetes management

Monitoring blood glucose levels

There are three ways to monitor your blood glucose.

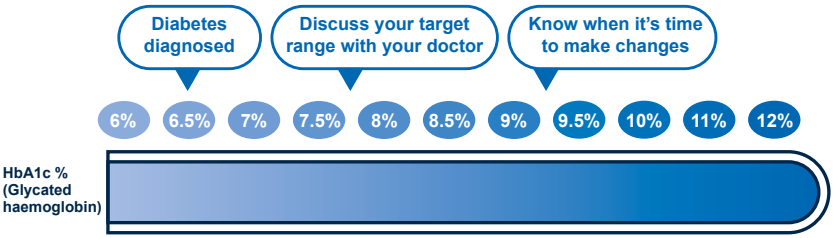
1. A blood test ordered by your doctor. This is called the glycated haemoglobin level (or HbA1c).
2. A finger prick check you can do yourself. This is called self-monitoring your blood glucose levels.
3. Continuous glucose monitoring (CGM) or Flash glucose monitoring (Flash GM), which are ways of checking your glucose levels continuously using a small sensor attached to your skin.

Glycated haemoglobin level

The glycated haemoglobin (HbA1c) level reflects the average amount of glucose that has been in your blood over the past two to three months. It is not the same as your daily blood glucose level.

If your HbA1c level is above target, it means there has been too much glucose in your blood (on average). If it stays above target, then you are at greater risk of the glucose damaging your blood vessels and causing diabetes-related complications (see page 51).

The recommended HbA1c target for most people is 7.0% (53mmol/ mol) or less. Your target may be higher or lower than this depending on your age and goals of care. Discuss your target with your doctor or diabetes educator.



You can arrange an HbA1c test with your doctor every 3 to 6 months.

Self-monitoring blood glucose levels

Self-monitoring involves doing a finger prick check using a hand-held glucose meter. The result is a 'snapshot' of what your blood glucose level is at that particular time. It is generally recommended that you check your blood glucose levels several times each day. For some people, self-monitoring can be done continuously through the day and night using a CGM or Flash GM device.

Why self-monitor blood glucose levels?

An aim of diabetes management is to keep blood glucose levels within a specified target range to help you feel well and reduce the risks of diabetes-related complications.

- Routine self-monitoring can help you see the effects of food, activity, insulin and illness on your blood glucose levels.
- It can also help you identify any patterns or changes that you can discuss with your health professionals.

When and how often to self-monitor your blood glucose levels

With type 1 diabetes, it is recommended that you check your blood glucose levels routinely. For example:

- before a main meal (including when you wake up)
- before bed
- occasionally overnight (discuss this with your health professionals)
- before and after physical activity.

You may find it useful to do extra blood glucose level checks when you:

- are sick
- suspect or experience a hypo (see page 39)
- change your diet or activity levels
- change your insulin doses.

Driving safely: Check your blood glucose level before you drive a vehicle. Do not drive if your blood glucose level is under 5.0mmol/L.

How do I self-monitor blood glucose levels?

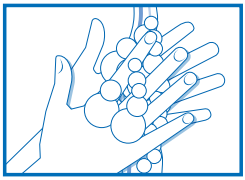
One way to self-monitor your blood glucose is by using a glucose meter. Your health professionals or local diabetes organisation may have supplied you with one. You can also buy a glucose meter from your community pharmacy (NDSS Access Point).

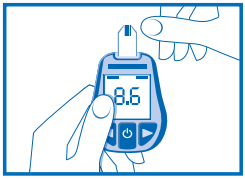
Blood glucose monitoring strips for meters are subsidised through the NDSS. They are available through most community pharmacies. You may also be able to access a free blood glucose meter. To find out more, go to **ndss.com.au/products/blood-glucose-testing-strips**.

Lancets are not subsidised but can be purchased over the counter at most pharmacies.

A diabetes educator can help you select a suitable meter and help you to use it. All meters require you to carry out the following steps:

- wash your hands using soap and water (do not use alcohol wipes or hand sanitiser as this may affect the result)
- place a monitoring strip into the meter, which will turn it on
- use the finger pricking device (also called a lancet) to get a small drop of blood
- apply the blood to the monitoring strip
- the meter will display your reading
- dispose of the lancet needle in a sharps container (see page 46).





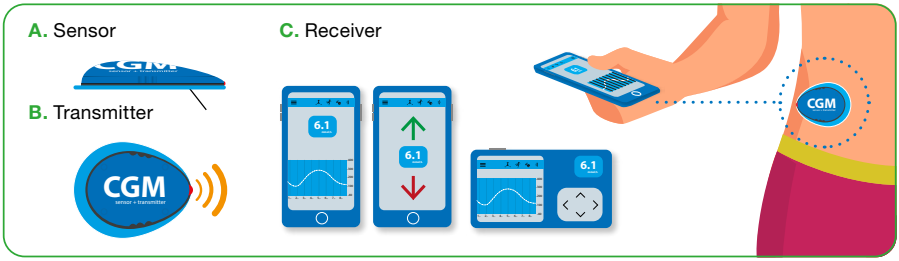
The blood glucose reading on your meter will be displayed in mmol/L (millimoles per litre). All meters store the reading in a memory. Be sure the time and date settings on the meter are correct. This allows you and your health professionals to review your readings and daily patterns. You can also write your readings in a record book.

Ask your health professionals about a meter that can also check blood ketone levels (see page 44). You can also check for ketones in your urine using a urine monitoring strip but blood ketone monitoring is more accurate.

Blood glucose monitoring
Your diabetes annual cycle of care
Diabetes and driving

Continuous and flash glucose monitoring products

Finger prick checks only reveal your blood glucose levels at a single point in time. There are also devices that can read your glucose levels continuously throughout the day or night. They include continuous glucose monitoring (CGM) and flash glucose monitoring (Flash GM) devices.



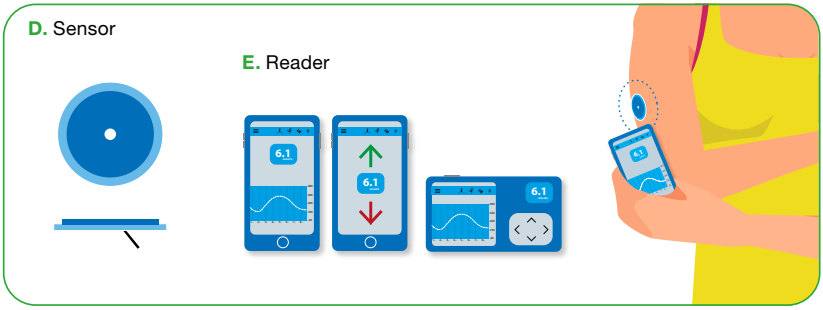
What is continuous glucose monitoring?

A CGM device is a small wearable device that measures and displays your glucose levels throughout the day and night. A CGM device senses the glucose levels in the fluid between your cells, just under your skin, not the level of glucose in your blood.

These devices can be programmed to alert you if your glucose levels are outside your set target range. They also display arrows to show whether your glucose level is rising, falling or steady. Some devices can send readings to a compatible insulin pump, while others send the reading to a CGM receiver or smartphone.

Continuous glucose monitoring

What is flash glucose monitoring?



A Flash GM device is like a CGM device except that you have to scan the sensor with a reader, smartphone or smart device to get your reading. The FreeStyle Libre 2 is a Flash GM devices.

	CGM devices	Flash GM devices
Sensor worn on	abdomen	back of upper arm
Change sensor	Every 7-10 days depending on the device	every 14 days
Transmits continuous data	yes	no—get a reading by scanning (every 8 hours minimum)
Trend arrows	yes	yes
24-hour pattern review	yes	if you scan every 8 hours
Alerts on low or high	yes	yes
Connects to insulin pump	yes	no

Flash glucose monitoring

CGM and Flash GM devices measure glucose differently from blood glucose meters. There can be differences between readings from these devices and blood glucose meters. Always confirm a low or high glucose reading with a blood glucose finger prick check

Accessing subsidised continuous and flash glucose monitoring products

Subsidised products can be accessed through the NDSS for the following eligible groups:

- Children and young people aged under 21 years with type 1 diabetes
- People with type 1 diabetes aged 21 years or older
- Women with type 1 diabetes who are actively planning pregnancy, pregnant, or immediately post-pregnancy
- Children and young people aged under 21 years with conditions very similar to type 1 diabetes who require insulin.

Questions for your health professionals

What is my glycated haemoglobin (HbA1c) result?

Can we discuss my HbA1c target?

What can I do if the finger prick hurts, or I cannot get enough blood?

Can I have a back-up meter and a meter that can check blood ketones?

When are the best times to check my blood glucose levels?

When would it be useful to do any extra blood glucose levels checks?

What are my blood glucose level target ranges (before a meal and 2 hours after a meal)?

What do I do if my blood glucose level is outside my target range?

What are the costs and benefits of CGM or Flash GM?

Am I eligible for NDSS-subsidised CGM or Flash GM products?

Hypoglycaemia

Hypoglycaemia (also known as a hypo or low blood glucose level) is when your blood glucose levels drop too low, usually to less than 4.0mmol/L.

Usually, you will notice or feel a hypo. It is important to treat a hypo immediately. Tell your family, friends and colleagues about how to manage a hypo.

If your child has diabetes, talk to your health professionals about school or early childhood care plans so they can help you ensure staff know how to manage a hypo.plans so the staff know how to manage a hypo.

Young children may not be able to tell you if they are having a hypo. Parents or carers may notice behavioural changes, such as irritability, agitation or quietness.

Am I at risk of hypo?

Anyone taking insulin is at risk of hypos. You can reduce your risk of hypo by understanding what causes a hypo, knowing your warning signs or symptoms, and monitoring your blood glucose levels regularly.

Causes of hypo include:

- injecting too much insulin
- injecting insulin too early before a meal, or too late after a meal
- not eating enough food (especially carbs)
- delaying or missing a meal
- being more active than usual or unplanned exercising
- drinking alcohol, particularly without eating enough carbs
- illness (vomiting or diarrhoea).

How will I know if I am too low?

You will probably feel unwell if you are having a hypo. However, you may not always feel the early warning symptoms. As a parent or carer of a child, you may notice behavioural changes or other signs that your child is low. It is important that you do a finger prick check if you think your blood glucose levels may be low. Signs and symptoms are different for each person, but include:

- shakiness
- sweating
- fast heart rate
- confusion
- irritability
- hunger
- tiredness or loss of concentration.

If a hypo is not treated immediately, it can progress to confusion, behaviour changes, unsteadiness and loss of consciousness.

How do I treat a hypo?

Have a hypo management plan and always keep your glucose meter and hypo treatment with you wherever you go. A hypo management plan will be individualised for everyone, including small children, older people, and for those on insulin pumps. Generally, the plan will involve the steps below.

Make sure you are safe. If you are driving a vehicle, pull over to the side of the road.

1. **Check** your blood glucose level. If you cannot check, go straight to step 2.

   (If you are using CGM or Flash GM, you may have to confirm sensor reading with a finger prick check if you can).

2. **Treat** with 15 grams of fast-acting carbs (glucose), for example:

» glucose tablets equal to 15 grams of carbs OR

» 6-7 regular jellybeans or 4 large jellybeans OR

» 1 tube of oral glucose gel (equal to 15 grams of carbs) OR

» ½ can (150mL) of regular (not 'diet') soft drink

» 100mL of Lucozade® OR

» 3 teaspoons of sugar or honey OR

» ½ glass (125mL) of fruit juice.

3. **Check** your blood glucose level after 15 minutes. Treat again (step 2) if you are still too low (for example, below 4.0mmol/L).

4. **Eat** long-acting carbs (or your next main meal), for example:

» a slice of bread OR

» a glass of milk or soy-milk OR

» a piece of fruit OR

» 1 small tub (100g) fruit yoghurt.

5. **Assess** what caused your hypo so you can make changes to try and avoid another one. It may be a good idea to discuss this with your health professionals.

Glucagon can be given as an injection to treat a hypo if you are drowsy, not able to eat or drink something safely or if you lose consciousness. A second person will need to be shown how to give a glucagon injection to you. Talk to your health professionals about making sure glucagon is part of your hypo management plan.

Managing hypoglycaemia

Diabetes and driving

Questions for your health professionals

What can I do to avoid having a hypo?

How can I avoid a hypo when exercising or fasting?

Can you help me with a hypo management plan?

Can we arrange glucagon training for my family/carer/colleagues/school staff?

Can I have a prescription for glucagon?

What do I do after I have had a hypo to avoid having another one?

What do I tell the people around me about hypos (family, friends, work colleagues)?

What should I do if I have a hypo while driving?

How can I avoid a hypo if I drink alcohol?

Hyperglycaemia

Hyperglycaemia is when your blood glucose levels are too high. Usually this is a blood glucose level greater than 15.0mmol/L. You and your health professionals may decide on a slightly higher or lower blood glucose level to define hyperglycaemia for you, so discuss this with them.

An occasional blood glucose level above your target is not usually a problem. But a pattern of being above your target blood glucose level is worth discussing with your health professionals.

An example might be if it happens more than twice at the same time of day or night.

> Long periods of hyperglycaemia can be dangerous and need treatment, or a medical emergency can develop.

Am I at risk of hyperglycaemia?

Hyperglycaemia can happen in anyone who has type 1 diabetes. Causes of hyperglycaemia include:

- a mismatch between insulin dose and carb foods/drinks including missing an insulin dose or not taking enough insulin for carbs
- insulin is out of date, is not stored correctly or has been used for more than 30 days at room temperature
- a problem with insulin delivery from your insulin pump
- being less active than usual
- stress (emotional or psychological)
- being unwell or having an infection

» taking certain medications, such as steroids

» over-treating a hypo.

Hyperglycaemia may just mean that you need to review your insulin doses and timing. Contact your health professionals if you are concerned.

How will I know if my blood glucose levels are too high?

You may not always notice when your blood glucose levels are too high, but hyperglycaemia can make you:

» tired

» pass more urine

» thirsty

» feel hungry (even though you are eating).

If blood glucose levels remain high, you might notice sores or cuts that don't heal very quickly, weight loss or blurred vision.

Ketones

With type 1 diabetes you may develop blood ketones if your blood glucose levels remain high.

You may also develop ketones if you have persistent vomiting or diarrhoea with normal or low blood glucose levels (see page 58).

You can check for ketones in your blood or in your urine. When ketone levels get too high you can develop a serious condition called diabetic ketoacidosis (DKA).

Check your ketone levels if your blood glucose is higher than 15.0mmol/L and you do not know why, or if you are feeling unwell. Follow your sick day action plan if you have one (see page 58).

Contact your doctor or go to hospital if:

your ketone levels remain high (a blood ketone level greater than 1.0mmol/L, or moderate to large urine ketones) despite following your sick day action plan

» you have persistent vomiting or diarrhoea

» you feel pain in your stomach

» you feel short of breath

» you feel worried and don't know what to do.

Ketoacidosis

Living well with type 1 diabetes-what to do when you are sick

Steroid medications and diabetes

Questions for your health professionals

What is my blood glucose level target range?

When do I need to check for ketones?

What is the normal range for ketones (blood or urine)?

What can I do to treat ketones and avoid DKA?

What is a sick day management plan?

Can you help me develop a sick day action plan?

Insulin

Do I need to take insulin?

With type 1 diabetes, you will have to take insulin throughout the day by injection or an insulin pump. Without injected insulin, a person with type 1 diabetes risks diabetic ketoacidosis (DKA, see page 44), which can be life-threatening.

Insulin

Insulin injection devices

Insulin is usually given as an injection into the fat layer just under the skin. It can be given using a syringe, but more commonly it is given using a pen device.

Your doctor or diabetes educator will have shown you how to use a pen device to inject your insulin dose safely. You will need to be in regular contact with your health professionals to work out the right dose for you.

Insulin pumps

An insulin pump is a small electronic device that holds a reservoir of insulin. The pump is programmed to infuse insulin through an infusion set and small cannula into the fat layer under the skin. Insulin is delivered at a continuous rate day and night. Extra insulin can be given by the user for food/drinks or to 'correct' high blood glucose levels.

Insulin pumps are not suitable for everyone. There are advantages and disadvantages of using an insulin pump. If you are considering using one, discuss it with your endocrinologist or diabetes educator.

Sharps disposal

Do not put needles into the general rubbish. Place the following into a sharps container:

- needles (lancets) from your finger pricking device
- syringe or insulin pen needles
- insertion needles from continuous and flash glucose monitoring devices

- used continuous and flash glucose monitoring sensors
- insulin pump infusion set and cannula needles (you can cut the tubing off and place that in general rubbish).

To find out where to get a sharps container and how to dispose of sharps, contact your:

- local council or health department
- community pharmacy, community health centre or public hospital.

Complementary or alternative medications

Talk to your pharmacist or doctor before you start any complementary or alternative medications. Some of these may affect your diabetes or interact with your insulin.

Questions for your health professionals

How many doses does an insulin pen contain? How long will a pen or cartridge last?

What is the name of my insulin?

What are the advantages and disadvantages of disposable versus refillable insulin pens?

Can you provide me with spare insulin pens (if using refillable insulin pens)?

How quickly does my insulin start to work and how long does it work for?

What is the recommended way to store my insulin at home and when I am out?

What insulin pumps are available in Australia?

What are the advantages and disadvantages of using an insulin pump?

Physical activity and type 1 diabetes

Being active is good for your physical and emotional health. Getting and staying active helps you manage your diabetes better. Being active helps:

- your insulin to work better (you become more sensitive to insulin)
- your muscles to use more glucose for energy, and sometimes lower blood glucose levels
- lower your blood pressure
- reduce your risk of heart disease
- reduce stress and improve your mood
- you maintain a healthy weight.

How much activity is beneficial?

Any amount of physical activity helps. Think about your daily activities. Housework or gardening, going for a walk or climbing stairs are all helpful. It is recommended that adults with diabetes aim for 30 minutes of activity a day up to five days a week. For children and young people, aim for 60 minutes a day.

If you have not exercised for some time and you would like to start now, talk to your doctor first about how to do this safely.

Start slow and gentle. For example, start with a 10-minute walk. Try and increase this from once to twice then three times a day. Or gradually increase the time you walk.

If you are already active or you exercise regularly, the goal will be to keep going. Encourage children and adolescents to continue with their regular activities and sports. If you change your type of activity or increase your exercise, make sure you consider how this might affect your blood glucose levels and your insulin requirements.

Exercise and blood glucose levels

Exercise can affect your blood glucose levels during and after your activity. Exercise may increase your risk of having a hypo during or up to 24 hours afterwards. This includes any extra incidental play for children.

Ask your health professionals to develop a management plan for you to exercise safely. Here are some things to consider:

- different types of exercise will require different management approaches
- monitor your blood glucose levels before, during and after exercise
- avoid hypos by:
  - reducing your insulin doses before and after exercise
  - eating some extra carbs (a snack) before and after exercise
- keep your hypo treatment and your blood glucose meter with you at all times
- if you are using an insulin pump, you may disconnect or suspend your pump during exercise for one to two hours at the most (do not go longer than two hours without insulin)
- do not exercise if you have ketones (more than 0.6mmol/L in blood or positive in urine)
- check ketones if your blood glucose level is above 15.0mmol/L, or if you are not feeling well
- do not exercise if you have had a severe hypo (blood glucose less than 2.8mmol/L, or where you required assistance to treat a hypo) in the last 24 hours.

Physical activity

Questions for your health professionals

How will I manage my insulin doses when I exercise?

What kinds of carb snacks and how much should I take to avoid a hypo before, during and after exercise?

What is the difference between cardiovascular (aerobic) and resistance (anaerobic) exercise and the effect on my blood glucose levels?

How often do I need to monitor my blood glucose levels before and after exercise? What about overnight?

What blood glucose level targets would you recommend before and after exercise?

Can I see an exercise physiologist or physiotherapist to guide me with simple activities to get me started?

Are there any local community activities that might suit me?

Managing your health

Looking after your diabetes is important for your long-term health. There is a lot you can do to avoid or delay diabetes affecting different parts of your body.

You may not notice any changes or feel any different from day to day. Many of the long-term effects of diabetes happen slowly over a period of time. This is why it is important to have regular diabetes health checks.

Your health professionals will check your HbA1c at least every three to six months (see page 33) but they may do it more often. They will also review your blood pressure, kidneys, eyes, feet and teeth every one to two years.

Diabetes health checks

Your diabetes annual cycle of care

What are diabetes-related complications?

Blood glucose levels above your target can impact parts of your body. Damage can happen over time to the blood vessels and nerves. This can affect the heart, brain, kidneys, eyes and feet, and may also cause digestive problems or problems with sexual function.

Your doctor and health professionals can help you manage your diabetes to minimise the long-term effects on your health.

It is recommended that you:

- see a doctor every 3 to 6 months
- see a podiatrist every 1 to 2 years
- get your eyes checked at least every 1 to 2 years
- see a dentist at least every year.

Type 1 diabetes and associated conditions

People with type 1 diabetes have a slightly higher risk of developing other autoimmune conditions. Your doctor will check your thyroid and adrenal function and screen for coeliac disease soon after diagnosis and regularly thereafter.

Looking after your kidneys

Looking after your eyes

Looking after your feet

Looking after your dental health

Diabetes-related complications

Questions for your health professionals

What can I do to look after my feet?

How often will you be checking my kidney function, blood pressure and cholesterol?

How often should I have my HbA1c checked?

When should I have my first eye check?

How can I access a dentist locally?

Living with type 1 diabetes

Adjusting to life with type 1 diabetes will take time. Talk to your friends and family and discuss your goals and priorities with your health professionals. The aim of this section is to answer basic questions and outline things to think about when you are ready.

Driving and diabetes

Can I still get a driver's license and who do I need to inform?

Yes. People with type 1 diabetes can get a license to drive private and commercial vehicles/trucks.

When you find out you have type 1 diabetes, you need to tell the driver licensing authorities in your state or territory. They will write and let you know how often you need to send in a medical report on your fitness to drive, so you can legally keep your license.

> Your doctor who specialises in diabetes or endocrinologist will need to provide the fitness to drive medical report.

You will need a fitness to drive medical report before you apply for a learner permit to drive a car.

Driver licensing authorities

State	Contact	Website	Phone
VIC	Vic Roads	vicroads.vic.gov.au	**13 11 71**
SA	Department of Planning, Transport and Main Roads	sa.gov.au/topics/driving-and-transport	**13 10 84**
ACT	Access Canberra	accesscanberra.act.gov.au	**13 22 81**
NT	Northern Territory Department of Transport	nt.gov.au/transport	**1300 654 628**
WA	Department of Transport	transport.wa.gov.au	**13 11 56**
QLD	Department of Transport and Main Roads	tmr.qld.gov.au	**132 380**
NSW	Roads and Maritime Services	rms.nsw.gov.au	**13 22 13**
TAS	Department of State Growth	transport.tas.gov.au	**1300 135 513**

Diabetes and driving

Does my vehicle insurer have to know I have diabetes?

Let your car insurance company know that you have diabetes. They will ask you if they need any more health information.

If you have any car insurance problems, contact the Australian Financial Complaints Authority on **1800 931 678**.

What if I drive a commercial vehicle?

You need to have a *fitness to drive* medical report every year.

A doctor who is a specialist in diabetes or endocrinologist will need to prepare and certify your medical report.

This report will go to the medical review staff in your state or territory driver licensing authority.

> Contact Austroads (**austroads.com.au** or **02 8265 3300**) or the National Transport Commission (**ntc.gov.au** or **03 9236 5000**); or, talk to the medical review staff in your state or territory driver licensing authority if you need more information.

Employment

Does my employer need to know I have diabetes?

Generally, you only need to tell your employer if you work in a safety-sensitive job (for example, police or ambulance officer, construction, or driving a public transport vehicle), or if your diabetes and health affects your ability to do the essential tasks of your job.

However, you may want to tell them so they can support you in managing your diabetes when at work (for example, ensuring you have regular meal breaks and assisting you if you need help with treating a hypo at work).

Talk with your diabetes health professionals about managing your diabetes while at work.

To know your rights and avoid discrimination when applying for a job or while in your current job, talk to staff at your state or territory equal opportunity and human rights commission, your union delegate or professional association.

Seek advice before disclosing health information to your employer.

Insurance

If you have life, personal, income protection or accident insurance, you need to tell your insurer that you have diabetes.

By law, health insurance companies are not allowed to discriminate against people with diabetes, but there may be extra costs for some types of insurance.

Medical alert identification

Do I need to wear medical alert identification?

It is your personal choice to wear or carry medical alert identification (ID).

Many people with type 1 diabetes choose to have some form of medical alert ID to let others know they are a person with this health condition. It may be useful in times of emergency.

Smoking

Smoking when you have diabetes increases your chances of:

- high blood pressure
- heart disease
- stroke
- problems with your feet
- teeth and gum problems.

If you would like help to stop smoking, speak with your doctor or contact Quitline (**quit.org.au** or **137 848**).

Recreational drugs

For people with diabetes, recreational or 'party' drugs have the potential to be more harmful than for people without diabetes. They may have a direct effect on your blood glucose levels. If you forget to take your insulin, or if you forget to eat, this could lead to serious consequences.

Be informed about what recreational drugs are and how they can affect your diabetes management.

Drug use and type 1 diabetes (for young people with type 1 diabetes)

Travel

Plan carefully before travelling in Australia or overseas.

You need to think about:

- vaccinations
- travel insurance
- allowing for different foods
- how to cope with time zone changes
- air travel with an insulin pump
- extreme climates (and altitudes)
- mishaps—such as long delays and misplaced baggage
- illness and sick day management.

You will need:

- a letter from your doctor
- scripts for all medications including insulin (in Australia)
- your NDSS registration and Medicare cards (in Australia)
- enough diabetes supplies for your time travelling time.

You need to consider insulin storage and the timing of doses through different time zones. Update your sick day action plan and pack a sick day kit. If you use an insulin pump, talk to your health professionals about a back-up plan if your pump stops working. See your health professionals well before your departure date.

Travelling by air

Travel

Travel and type 1 diabetes (for young people with type 1 diabetes)

Transitions: managing diabetes through life changes

Learning how to adapt your diabetes management through changes in your life is important. Physical and emotional stresses can make blood glucose levels difficult to keep within your target range. Different stages in life also bring with them different challenges for your diabetes.

Illness and sick days

When you are unwell, you need to take extra care of your diabetes. Infections can cause your blood glucose levels and ketones to rise (see page 43). Vomiting and/or diarrhoea can cause your blood glucose levels to drop (see page 39) and ketones to rise (see page 44). Diabetic Ketoacidosis (DKA, see page 44) is a serious condition that requires immediate hospital care. If left untreated, DKA can lead to a life-threatening situation.

Talk to your health professionals about a personal sick day action plan. Update your sick day plan whenever there is a change in your diabetes management.

Sick days during pregnancy for type 1 diabetes

Living well with type 1 diabetes - what to do when you are sick

Diabetes and emotional and mental well-being

Managing your diabetes every day is demanding. Diabetes is more than a physical condition – it can affect your emotional well-being as well. Feeling down or worried about your diabetes does not mean you have a mental health condition. You are not alone and if you are worried, talk to your health professionals, family and friends, and other people with diabetes (for example, through peer support programs).

If you have diabetes, you are at risk of developing diabetes-related distress and possibly depression. If you had depression before you were diagnosed with diabetes, it could make your depression worse. It is a difficult cycle—you have to take care of one condition to keep on top of the other. Speak to your health professionals. There is support available.

Diabetes and emotional health

Diabetes distress

Diabetes and anxiety

Diabetes and depression

Diabetes and disordered eating

Fear of hypoglycaemia

Peer support for diabetes

When and how psychologists can support people with diabetes

Pregnancy

Women with type 1 diabetes can have a healthy pregnancy and a healthy baby. Although diabetes brings extra risks during pregnancy, you can reduce these risks by getting the right advice and support before you get pregnant.

If you are planning pregnancy, give yourself time to prepare and talk to your health professionals.

If you are not planning pregnancy, talk to your health professionals about contraception.

Contraceptive choices
Pregnancy planning checklist

Pregnancy and diabetes

Having a healthy baby: a guide to planning and managing pregnancy for women with type 1 diabetes

Women with type 1 diabetes

You may find that the hormonal changes that come with your menstrual cycle can affect your blood glucose levels. For each person it is different. Some do not notice a change during their period. Others might notice their blood glucose levels rising a few days before their period. And others may find each month it's a little different. Your appetite may also change during your period.

Monitor your blood glucose levels closely to get an idea of what

your daily pattern may be before and during your period. You can then discuss this with your health professionals to help you plan how to manage your diabetes each month.

Your blood glucose levels can also be affected by the hormonal changes that happen during menopause. Monitor your glucose levels closely and work with your health professionals to adjust your diabetes management appropriately.

Young women with diabetes

Sexual health and type 1 diabetes

Diabetes can sometimes contribute to sexual problems for men and women. For example, high blood glucose levels over time may damage the blood vessels or nerves supplying sexual organs. This can lead to erectile dysfunction in men and decreased sensation or vaginal dryness in women.

How you are feeling can impact on your sexual health too. If you are feeling worried or embarrassed about a sexual problem, it may be helpful to talk to your health professionals. If you feel uncomfortable about raising the topic, it may help to prepare what you have to say beforehand.

Young people

Type 1 diabetes is the most common form of diabetes in children and teenagers.

Any diagnosis of diabetes affects your whole family. Each of you needs some support in adjusting to the diagnosis. Parents often experience feeling some form of guilt or responsibility. Siblings may feel that their needs are not being met.

Children and teenagers have different ways of coping with diabetes. They need time and support to express their fears and emotions. Each stage of development through childhood to young adulthood can present new challenges, including not wanting to deal with diabetes at all.

There is a lot to learn for parents and young people when there is a diagnosis of type 1 diabetes. Your health professionals will teach you how to give insulin, monitor blood glucose levels and how to count carbs. Providing routine and planning around meals and activities

will help.

Your health professionals will also provide support and education with returning to preschool or school as soon as possible.

> School and early childhood settings diabetes action and management plans are available to guide school staff with your child's diabetes care. Go to **diabetesinschools.com.au**.

With the right planning and support, there is no reason a child or young person with diabetes cannot join in every activity at school.

Resources for young people

Caring for someone with diabetes (for family and friends)

Continuous glucose monitoring: a guide to using CGM for children and young people with type 1 diabetes

Older people

As you age, other health conditions can make living with diabetes more complicated.

Your diet and appetite may change and keeping active may become more challenging. You may also be less likely to feel symptoms of high (see page 43) or low (see page 39) blood glucose levels. Regular diabetes reviews with your health professionals are essential to help you adjust your goals.

Older people with diabetes

Healthy eating: a guide for older people living with diabetes

You and your health care team: a guide for people over 65 living with diabetes

Managing diabetes as you age: a guide for people over 65 living with diabetes

Privacy

Privacy policy

You can find the Privacy Policy on the NDSS website at **ndss.com.au/privacy-policy** or you can request a hard copy by contacting the NDSS Privacy Officer. If you have any questions or if you would like to make a complaint about how we have handled your information please contact the NDSS Privacy Officer. More information about the *Privacy Act* and what it means for you can be found at **oaic.gov.au**.

NDSS Privacy Officer
Diabetes Australia

GPO Box 3156, Canberra ACT 2601

E: privacy@diabetesaustralia.com.au

P: 02 6232 3800

Feedback

NDSS Feedback Form

We welcome your feedback. Go to ndss.com.au/ndss-feedback-form to access the NDSS Feedback Form. This form can also be used for general queries about the NDSS. You can also email info@ndss.com.au.

NDSS Helpline 1800 637 700
ndss.com.au