

NDSS Helpline 1800 637 700 ndss.com.au

Information for people with type 1 diabetes







Find this resource at ndss.com.au



The NDSS is administered by Diabetes Australia

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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. 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. Get to know the NDSS and what products and services are available to you. There are sections to help you understand type 1 diabetes. Find out how you can start to manage 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 care team. 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:



Web pages



Fact sheets or booklets



Audio option available on each web page.

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



Get information in your language



Information for Aboriginal and Torres Strait Islander peoples



Information for young people



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 all the symptoms you have been experiencing. However, you could be feeling disbelief, sadness, anger or self-blame. Usually, these feelings ease as you:

- » become more informed
- » ask questions
- » involve your family and friends
- » connect with peers and your health care team
- » 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 your health care team. It may help to connect with other parents or carers of someone with type 1 diabetes.

What is the NDSS?

The NDSS commenced in 1987 and is an initiative of the Australian Government administered by Diabetes Australia. Registration is free and open to all Australian residents diagnosed with diabetes.

Through the NDSS people with diabetes can access:

- » support services for practical help and guidance
- » diabetes and health information and resources
- » subsidised diabetes products.

Stay up to date

Diabetes changes as you do. Products and services change over time. Keep in touch with the NDSS and your health care team. You can update your details online at **ndss.com.au/manage-your-registration** or by calling the NDSS Helpline **1800 637 700**. Now you are registered, you can access services through your state or territory diabetes organisation (these are called NDSS Agents) (see page 16). 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		Speak with a
replacement card	Monday to Friday 8:30am – 8:00pm	diabetes health professional
	Saturdays and National Public Holidays	
Find out about services	9:00am – 2:00pm	Find out about
near you		products and where and how to get them

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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 **1800 637 700**. NDSS services

NDSS products

Understanding diabetes

Nutrition and healthy eating

Diabetes management

Living with type 1 diabetes

Privacy

Your health care team

You are not alone. Many people can be part of your health care team.



You may not need all the health professionals shown here. Talk to your doctor or endocrinologist 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.



Credentialled diabetes educator (CDE): A health care professional who has specialised in diabetes management. They can help you to understand, manage and monitor your diabetes. This includes 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 paediatrician may provide specialist diabetes care for children in some circumstances.

Dietitian: Provides advice and support with healthy eating habits and carbohydrate counting.

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

Podiatrist: Checks the health of your feet routinely.

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.



Nurse practitioner: A registered nurse qualified and authorised to practice in an advanced and extended clinical role. This is different to a practice nurse working with a GP.

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Next steps

- » Understand type 1 diabetes (see page 21).
- » Develop a diabetes care plan with your doctor or endocrinologist so together you can set goals and targets and link to the other health care professionals who can support you (see page 8).
- » Talk to your doctor and health care team about health checks and the annual cycle of care (see page 51), for example your eyes and feet.
- » Learn how you can manage your diabetes by:
 - discovering more about nutrition and carbohydrates (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, ageing 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



Welcome and introduction

How do I access NDSS services?

Now that you are registered you can access various support, information and education services. To find out more, visit **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 usually free or come with a minimal cost now you are registered. Your state or territory diabetes organisation (NDSS Agent) manages support services.

What kinds of services are available?

Through the NDSS you can access:

- » information about diabetes self-management
- » fact sheets, brochures and other resources about type 1 diabetes
- » programs and activities, such as camps for young people and structured self-management education programs
- » peer support groups
- » subsidised diabetes products through community pharmacies
- » the NDSS Helpline on 1800 637 700 and website at ndss.com.au.

How to access information and resources?

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

Use the links included in each topic.

Or visit ndss.com.au/resources.

Or contact 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 (y) Twitter

What kinds of support programs are available?

Talk to your health care team to work out what programs might suit you. Through the NDSS or your state or territory diabetes organisation, you can find out more information and the dates and venues of upcoming programs.

Workshops and education programs

Type 1 diabetes face to face education program

This is a multi-day program for small groups of adults with type 1 diabetes. The program covers managing your insulin use, carbohydrate (carb) counting, understanding hypoglycaemia (hypo), exercise and illness. **OzDAFNE** is the name of a program.

Topic specific diabetes education programs

There are a number of short group workshops on topics that can help you learn about managing your diabetes:

- » Learn about carbohydrates 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, decode food labels and avoid unhealthy food as you move down the supermarket aisles.
- » Learn about insulin, what it is and how to use it.
- » Learn about physical activity the importance of physical activity in diabetes management. How to become more active and have your own step-by-step plan to get started in making physical activity part of your daily routine.

Privacy

Support programs

Peer support

Peer support groups bring together people with diabetes who share common experiences, conditions, concerns, goals or interests. By supporting each other, people improve their quality of life. Peer support programs can either be face to face or online.

Camps for young people

Camps are safe places for children and young people to learn more about living with diabetes with the support and guidance of health professionals.

Diabetes information sessions

These are practical group sessions about general diabetes management, products and services and the NDSS for organisations and workplaces.

Diabetes in Schools

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

These are some examples and to find out more and what services are available near you:

Call the NDSS Helpline on **1800 637 700** or visit the website at **ndss.com.au/services/support-programs**.



Diabetes organisations

Diabetes Australia

Diabetes Australia is a registered charity and was first established in 1957 and is the national organisation for all people affected by diabetes and those at risk.

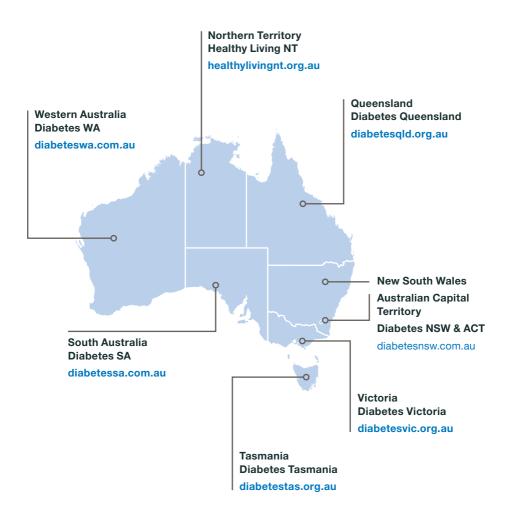
Diabetes Australia works in partnership with its member organisations, people with diabetes, diabetes health professionals, researchers and health care providers. Diabetes Australia is committed to reducing the impact of diabetes on the Australian community.

Diabetes Australia is a respected and valued source of information and advice for government and the community. Diabetes Australia has administered the NDSS since it began in 1987.

Phone: 02 6232 3800 Email: admin@diabetesaustralia.com.au Website: diabetesaustralia.com.au

State and territory diabetes organisations

All state and territory organisations are not-for-profit, memberbased 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.



NDSS products



Welcome and introduction

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:

- » visit our NDSS Online Service Directory at osd.ndss.com.au
- » call the NDSS Helpline on 1800 637 700 or 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
- fully subsidised continuous and flash glucose monitoring products (if you meet the eligibility criteria)
- » fully subsidised insulin syringes and pen needles.

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

NDSS services

NDSS products

Privacy

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 or flash glucose monitoring 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 travelling 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 carbohydrate 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.

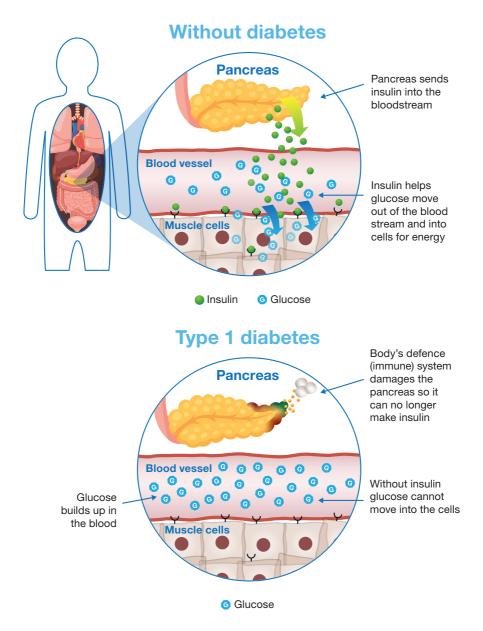
High blood glucose levels can cause health problems (see pages 43 and 51). But with the right treatment and care, people with diabetes can live a healthy life.

What are the different types of diabetes?

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

Privacy

What happens in your body after you eat (carbohydrate) food



NDSS services

Diabetes management

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 care team will help you understand how to:

- » give insulin (via injections or insulin pump)
- » monitor your glucose levels throughout each day
- » identify carbohydrates in your diet
- » manage your diabetes around activity, study or work, stress, being sick, hormonal changes and during pregnancy.

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), organ-transplant or some cancer medications.



Other types of diabetes

Privacy

Questions for your health care team

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 carbohydrates?

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

Nutrition and healthy eating



Welcome and introduction

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 small 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 carbohydrate have the biggest effect on your blood glucose levels. Carbohydrate is 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.

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Carbohydrate foods

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

- » wholegrain breads and cereals
- » pasta, rice, couscous 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.

Carbohydrates: nutrient-rich



Eat less carbohydrate foods that are 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.

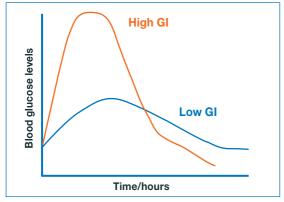
Carbohydrates: high added sugars, fats or salts



What is the glycemic index?

The glycemic index (GI) is a ranking of carbohydrates 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).

It may help to choose low or intermediate GI carbohydrate foods.



Source: glycemicindex.com

GI numbers are a guide only. Also consider the amount (portion) of carbohydrate in the foods you eat.



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

Carbohydrate 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 care team about learning how to do this.



What type of diet is best?

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

There is no single diet that suits everyone who has diabetes.

Children and older people may have different nutritional needs.

Before making major changes to your diet, talk to your health care team 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.



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 how much insulin you might need. 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 contact the Dietitians Australia:

dietitiansaustralia.org.au/find-an-apd or call 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 judgement and your ability to make decisions about your diabetes management
- » increase your risk of a low blood glucose level (hypoglycaemia) if you take insulin
- » 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 care team 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 care team

How do I learn how to count carbohydrate foods?

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

Are there guides or Apps to help me with carbohydrate 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?

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Monitoring blood glucose levels

There are three ways to monitor your blood glucose.

- 1. A blood check ordered by your doctor or endocrinologist. This is called the glycated haemoglobin level (or HbA1c).
- 2. A finger prick check you can do yourself. This is called selfmonitoring your blood glucose levels.
- 3. Continuous glucose monitoring (CGM) or Flash glucose monitoring (Flash GM), which are ways of checking your glucose levels continuously through the day and night.

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 high it means there has been too much glucose in your blood (on average). If it stays high, then you are at greater risk of the glucose damaging your blood vessels and causing diabetesrelated 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, endocrinologist or credentialled diabetes educator.



You can arrange an HbA1c check 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. You can do a blood glucose check a number of times a day, which is a way of keeping an eye on your levels as you go. For some people, self-monitoring can be done continuously through the day and night using a continuous glucose monitoring (CGM) or flash glucose monitoring (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 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 care team.

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 with your health care team)
- » 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. Don't drive if you are under 5.0mmol/L.

How do I self-monitor blood glucose levels?

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

You can get NDSS subsidised blood glucose monitoring strips from most community pharmacies.

A credentialled 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 care team to review your readings and daily patterns.

Ask your health care team for 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.

Privacy

How to access a free blood glucose meter 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. Devices that do this fall into two categories – continuous glucose monitoring (CGM) and flash glucose monitoring (Flash GM) devices.



What is continuous glucose monitoring?

A continuous glucose monitoring (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 fat layer 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 glucose monitoring (Flash GM) device is like a continuous glucose monitoring (CGM) device except that you have to scan the sensor with a reader, smartphone or smart device to get your reading. The FreeStyle Libre and FreeStyle Libre 2 are Flash GM devices.

	Continuous glucose monitoring devices	Flash glucose monitoring devices	
Sensor worn on	abdomen	back of upper arm	
Change sensor	as recommended by manufacturer	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	no - Freestyle Libre yes - Freestyle Libre 2 has optional alarms for high or low glucose levels	
Connects to insulin pump	yes	no	



Continuous and flash glucose monitoring

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Continuous and flash glucose monitoring 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 fully subsidised continuous and flash glucose monitoring products

Fully subsidised products can be accessed through the CGM Initiative as part of 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 who have a valid concessional status
- » 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 care team

What is my glycated haemoglobin (HbA1c) result?

Can we discuss my HbA1c target?

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

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

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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 I'm worried about my blood glucose level?

What are the costs and benefits of continuous or flash glucose monitorina?

Am I eligible for NDSS-subsidised continuous or flash glucose monitoring?

Hypoglycaemia

Hypoglycaemia is when your blood glucose levels drop too low, usually to less than 4.0mmol/L. Hypoglycaemia is often called a hypo.

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.

Talk to your health care team about school or early childhood care 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 hypoglycaemia. You can reduce your risk of hypo by knowing what causes a hypo, what your particular warning signs or symptoms might be, and monitoring your blood glucose levels regularly.

Causes of hypo include:

- » too much insulin
- » injecting insulin too early before a meal, or too late after a meal
- » not enough food (especially carbohydrate)
- » being more active than usual or exercising
- » drinking alcohol
- » 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.

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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 continuous or flash glucose monitoring, confirm sensor reading with a finger prick check if you can).

- 2. Treat with 15 grams of fast-acting carbohydrate (glucose), for example:
 - » glucose tablets equal to 15 grams of carbohydrate OR
 - » 6-7 regular jellybeans or 4 large jellybeans OR
 - » 1 tube of oral glucose gel (equal to 15 grams of carbohydrate) OR
 - » 1/2 can (150mL) of regular (not 'diet') soft drink
 - » 100mL of Lucozade® OR
 - » 3 teaspoons of sugar or honey OR
 - » 1/2 glass (125mL) of fruit juice.
- 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 carbohydrate (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 care team.

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



Managing hypoglycaemia

Diabetes and driving

Questions for your health care team

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've had a hypo to avoid having another one?

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

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 care team 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 care team.

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 occur in anyone who has type 1 diabetes.

An illness, infection, or taking steroid medications can increase your risk.

Causes of hyperglycaemia include:

- » a mis-match between insulin dose and carbohydrate food/drink; for example:
 - missed insulin dose
 - not enough insulin for carbohydrates eaten
 - eating more carbohydrate food than usual.

- » insulin is out of date, is not stored correctly (was it frozen?), or has been used for more than 30 days at room temperature
- » a problem with your insulin pump: line or cannula issues (is insulin being delivered?)
- » being less active than usual
- » stress (emotional or psychological)
- » being unwell or having an infection
- » over-treating a hypo.

Hyperglycaemia may just mean that you need to review your insulin doses and timing. Contact your health care team 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 will make you:

- » tired
- » pass more urine
- » thirsty
- » feel hungry (even though you are eating).

You might notice sores or cuts that don't heal very quickly. You may lose weight or have blurred vision.

Ketones

With type 1 diabetes you may develop blood ketones if you are hyperglycemic.

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 (using a urine monitoring strip). 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 don't know why, or if you are feeling unwell. If you have a sick day management plan (see page 58) - follow this.

Contact your doctor or go to hospital if:

- » you have a blood ketone level greater than 1.0mmol/L, or moderate to large urine ketones
- » 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

Managing sick days for type 1 diabetes Steroid medications and diabetes

Questions for your health care team

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?

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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 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 credentialled 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 care team 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 credentialled 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

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- » 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 care team

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

What is the name of my insulin?

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'm 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 to do 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 health care team 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 increase the time gradually.

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 will affect your blood glucose levels during and after your activity. Any exercise will 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 care team 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 carbohydrate (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 present (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

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Questions for your health care team

How will I manage my insulin doses when I exercise?

What kinds of carbohydrate 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.

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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 care team will plan to check your blood glucose levels at least every three months, but they may do it more regularly early on. They will check your HbA1c at least every three to six months (see page 33). 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?

High blood glucose levels can impact parts of your body. Damage can occur 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 care team can help you manage your diabetes to minimise the long-term effects on your health.

- » See your doctor at least every 3 to 6 months.
- » See a podiatrist at least 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 do have a slightly higher risk of developing other autoimmune conditions. Your endocrinologist will check your thyroid and adrenal function and screen for coeliac disease soon after diagnosis.

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Looking after your kidneys Looking after your eyes Looking after your feet Looking after your dental health Sexual health and diabetes Diabetes-related complications

Questions for your health care team

What can I do to look after my feet?

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

When is my next HbA1c check?

How can I access a dentist locally?

Living with type 1 diabetes

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Welcome and introduction

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 care team. 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 licence and who do I need to inform?

Yes. People with type 1 diabetes can get a licence 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 licence.

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/#/transport	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

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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?

To legally hold a commercial licence 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 safetysensitive 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.

Talk with your diabetes health care team 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.

Privacy

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.

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, 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. 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.

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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 endocrinologist or 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 management plan and talk to your health care team about a back-up plan if your insulin pump stops working. See your health care team 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 care team about a personal sick day management plan. Update your sick day plan whenever there is a change in your diabetes treatment.

Sick days during pregnancy for type 1 diabetes



Managing sick days for type 1 diabetes

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 care team and other people with diabetes (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 care team. There is support available.



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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 care team.

If you are not planning pregnancy, talk to your health care team 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 care team to help you plan how to manage your diabetes each month.

Another hormonal change occurs later in life during menopause. Your blood glucose levels can be affected by these changes as well. Monitor your glucose levels closely and work with your health care team 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 for women, this can lead to decreased sensation or vaginal dryness.

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 care team. If you feel uncomfortable about raising the topic, it may help to prepare what you have to say beforehand.

Sexual health and diabetes

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.

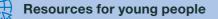
They need time and support to express their fears and emotions. Each stage of development through childhood to young adulthood can present new challenges, including not wanting to deal with diabetes at all.

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

Your health care team 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. Visit **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.



Caring for someone with diabetes (for family and friends) Mastering diabetes in preschools and schools 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 care team 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** 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**.

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