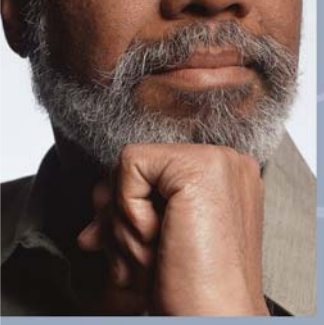

diabetes

WHAT YOU NEED TO KNOW








Diabetes: what you need to know

ENGLISH

DIABETES AUSTRALIA
New South Wales

Contents

Foreword

Diabetes: what you need to know, has been written for people with diabetes and for people who would like to learn more about the condition. It has been written in English and several other languages.

Health professionals with skills and knowledge in a variety of specialised areas have contributed to the content and presentation.

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Introduction

Diabetes prevalence is considerably higher in Indigenous and certain culturally and linguistically diverse (CALD) groups.

So far there is no cure for diabetes but with proper management most people can lead a full and active life and delay or prevent long-term complications. To ensure optimum health, people with diabetes and their families need to understand a great deal about diabetes.

Being diagnosed with diabetes can be frightening and overwhelming. It's a lot easier when you understand it and develop a lifestyle plan to manage it. For this reason, reliable information about food, medicines, exercise, community resources and diabetes self-care is very important.

1 What is diabetes?

Diabetes is a condition where the amount of glucose (sugar) in the blood is raised.

Glucose is your body's main energy source but when blood glucose is too high over long periods, it can damage certain organs.

Foods, called carbohydrates (e.g. bread, pasta and potatoes), are broken down into sugar and released into the bloodstream in the form of glucose. The pancreas, an organ that sits behind the stomach, releases a hormone called insulin into the bloodstream. Insulin allows the glucose to move from the bloodstream into certain cells of the body, where it is changed into energy. We use this energy to walk, talk, think and carry out many other activities.

Diabetes occurs when there is either no insulin produced, or not enough insulin to move the glucose out of the bloodstream (with the insulin that is produced not working properly).

At this time there is no cure for diabetes.

Symptoms of high blood glucose, include:

- Frequent urination (both night and day)
- Thirst/dry mouth
- Tiredness/lack of energy
- Blurred vision
- Slow healing of wounds
- Certain infections (e.g. urine infections)
- Tingling sensation in the feet
- Itching or irritation around the vagina or penis.

2 Types of diabetes

The most common types of diabetes, include:

- Type 1 diabetes
- Type 2 diabetes
- Gestational diabetes mellitus (GDM).

Type 1 diabetes

This type of diabetes usually occurs in children and young people, but it can occur at any age.

In type 1 diabetes the body's immune (defence) system has destroyed the cells that make insulin. As a result, no insulin is produced by the pancreas.

Although the exact causes of type 1 diabetes are not yet fully understood, it is known that there is a family link and environmental factors. The development of type 1 diabetes is NOT linked to lifestyle (e.g. eating too much sugar, not exercising enough or being overweight).

Symptoms of type 1 diabetes have a rapid onset and include:
- Feeling very thirsty
- Passing urine frequently
- Sudden weight loss (despite normal or increased appetite)
- Tiredness
- Generally feeling unwell
- Mood changes.

If undetected, blood glucose (sugar) levels become very high. When the body cannot get enough glucose from the blood to use as energy it will begin to burn fat, which may cause ketones to become present in the bloodstream. Ketones and high blood glucose levels are very serious and need immediate treatment.

If untreated, the person will become very ill and may develop:
- Abdominal pain, naausea and vomiting
- Rapid or deep breathing
- Dehydration and vomiting
- Coma.

The treatment for type 1 diabetes is insulin, which must be commenced immediately and be taken for life. The treatment also includes:

- Regular blood glucose monitoring
- Maintaining a healthy lifestyle.

Type 2 diabetes

This is usually diagnosed in people aged over 40 years but is now being diagnosed in younger people, even children. Type 2 diabetes runs in families, so children and grandchildren are at risk.

It is also associated with lifestyle. Inactivity and poor food choices can result in increased weight, especially around the abdomen, resulting in the inability to use the body's supply of insulin effectively (insulin resistance).

Type 2 diabetes can be delayed or prevented if the risk is recognised and healthy lifestyle choices are made.

Risk factors

- Family history of diabetes
- Overweight and over 45 years of age
- Heart disease or heart attack or stroke
- High blood pressure and over 45 years of age
- Anyone over 55 years of age
- High blood cholesterol
- High blood glucose (sugar) levels during pregnancy (gestational diabetes)
- Recorded a borderline blood glucose level (impaired fasting glucose and/or impaired glucose tolerance)
- Aboriginal, Torres Strait Islander, Pacific Islanders, Indian sub-continent or Chinese cultural heritage
- Polycystic Ovarian Syndrome. A common disorder in women caused by a hormonal imbalance. Symptoms may include irregular menstrual periods, acne, obesity and excess hair growth.

Children and adolescents who are overweight, experiencing increased thirst, urinary frequency, tiredness and who may have a family history of diabetes, should also be tested for diabetes.

Most people with type 2 diabetes have NO symptoms. However, symptoms may include frequent urination, thirst, blurred vision, skin infections, slow healing, tingling and numbness in the feet. It has a slow onset.

Once diagnosed, it is very important to maintain good blood glucose levels as soon as possible to avoid complications. Management can begin with **healthy food choices and regular physical activity** but diabetes is a progressive disease. Overtime, medications may be necessary. Eventually, insulin may be required.

Management plan

- Be physically active (e.g. walking) – aim for 30 minutes of moderate physical activity most days of the week. If possible, do some vigorous exercise for extra health and fitness. Check with your doctor first
- Adopt a healthy eating plan
- Lose weight or maintain a healthy weight
- Reduce salt intake
- Drink plenty of water
- Regular blood glucose monitoring
- See your doctor for regular health checks (e.g. eyes, blood glucose levels, blood pressure, cholesterol and kidneys)
- Regular appointments with your diabetes health team
- Take care of your feet – check daily
- Encourage your family to adopt a healthy lifestyle
- Stop smoking.

Impaired fasting glucose / impaired glucose tolerance

These are conditions whereby blood glucose (sugar) levels are higher than usual but not high enough for a diagnosis of type 2 diabetes. The body is starting to struggle to maintain healthy blood glucose levels. If not managed it may develop into type 2 diabetes within five to ten years. This also means you are at higher risk of heart disease.

THE TIME TO ACT IS NOW

Healthy eating and regular physical activity can delay or prevent the development of type 2 diabetes. People at risk of type 2 diabetes should be tested by their doctor every year to check for the onset of diabetes.

Gestational diabetes

This type of diabetes occurs during pregnancy.

In pregnancy, the placenta produces hormones that help the baby to grow and develop. These hormones also block the action of the mother's insulin. Therefore the need for insulin in pregnancy is two to three times higher than normal. If the body is unable to produce this much insulin, gestational diabetes develops.

The mother's glucose (sugar) passes to the baby resulting in bigger babies which can make birth more difficult.

Gestational diabetes generally develops around the 24th to 28th weeks of pregnancy and usually disappears at birth, but may re-occur at the next pregnancy. Many women who have gestational diabetes go on to develop type 2 diabetes years later.

Blood glucose levels of the mother and baby are tested after birth.

What to do if you have been diagnosed with gestational diabetes?

It is necessary to see an obstetrician, endocrinologist, diabetes educator and a dietitian.

The management is healthy eating for mother and baby and moderate exercise, plus regular monitoring of blood glucose levels. Insulin administration may be required. It is a good idea to have small frequent meals, that are nutritious for you and your baby, rather than three big meals. This will ease the insulin demand on the pancreas.

Those most at risk for developing gestational diabetes are:

- Women over 25 years of age
- Women with a family history of type 2 diabetes
- Women who are overweight
- Certain ethnic groups
- Women who have had gestational diabetes during previous pregnancies.

3 Diabetes health team

Diabetes is a lifelong condition. Your health care team is available to support, advise and answer your questions.

The team includes:

- Your **family doctor** who looks after your diabetes and refers you to other health professionals as needed. Your family doctor is responsible for organising your diabetes tests
- An **endocrinologist** is a specialist in diabetes. Many people with type 1 diabetes see an endocrinologist. People with type 2 diabetes may see an endocrinologist if they are having problems with their diabetes management
- A **diabetes educator** is usually a registered nurse who has done special training in diabetes. Educators can assist with teaching you about diabetes and many of the important areas such as blood glucose monitoring, medications, insulin, sick days, travel and stress
- A **dietitian** can answer questions about healthy eating for you and your family
- An **exercise physiologist** can help to develop a physical activity plan suitable for you - regardless of age, ability or disability
- An **optometrist** can do a diabetes eye check and a vision check. Some people with diabetes need to see an **ophthalmologist**, a doctor with special training in diseases and problems with the eye
- A **podiatrist** is a health professional who deals with the feet. Many podiatrists have advanced training in the 'diabetic foot'
- A **dentist** will check your teeth and gums.

Sometimes people with diabetes have trouble coping with the day to day burden of their disease. **Social workers** and **psychologists** can help in this area. Your family doctor or diabetes educator can often refer you to these services.

Other specialists are sometimes needed. Children and adolescents with diabetes should see a **paediatric endocrinologist** or a **paediatrician**.

Women with diabetes who are planning a pregnancy or who are pregnant, or who develop gestational diabetes should see an **obstetrician** and endocrinologist. If complications of diabetes are present, referral to other kinds of health professionals may be required.

Pharmacists are also very important in your diabetes management. They have special knowledge of how drugs affect the body and which medications interact with each other.

The most important member of this team is **you!** You are the one who will be in control of your diabetes management. Depending on your needs, your family, friends and co-workers might also be part of your team.

4 What regular health checks are recommended?

Your family doctor will develop a care plan to manage your diabetes. This allows you to use extra services using Medicare.

The care plan may include:

What needs to be checked?	How often?	Who do you need to see?
Measure blood pressure	Every six months	Family doctor
Measure weight, height and calculate BMI (Body Mass Index - this mesure determines if you have a problem with your weight). Measure waist	Every six months	Family doctor
Overall review of your diabetes management	Once a year, especially if you have diabetes related complications	Endocrinologist
Test for microalbuminuria - this test is to make sure your kidneys are working well	Once a year	Family doctor
Measure HbA1c - this blood test reflects your average blood glucose (sugar) level over the past three months	Three monthly or six monthly	Family doctor
Measure lipids (blood fats)	Once a year	Family doctor
Comprehensive eye exam	At least every two years	Optometrist / ophthalmologist
Examine feet	Every six months	Podiatrist
Review healthy eating, physical activity, medication, self-care education and smoking status	Once a year	Dietitian / family doctor / exercise physiologist / diabetes educator

Ask your doctor to provide you with, and discuss the results of any blood tests that have been performed, as well as other measurements, such as blood pressure and weight. This will help you to have a better understanding of your diabetes and general lifestyle management.

5 Healthy eating for diabetes

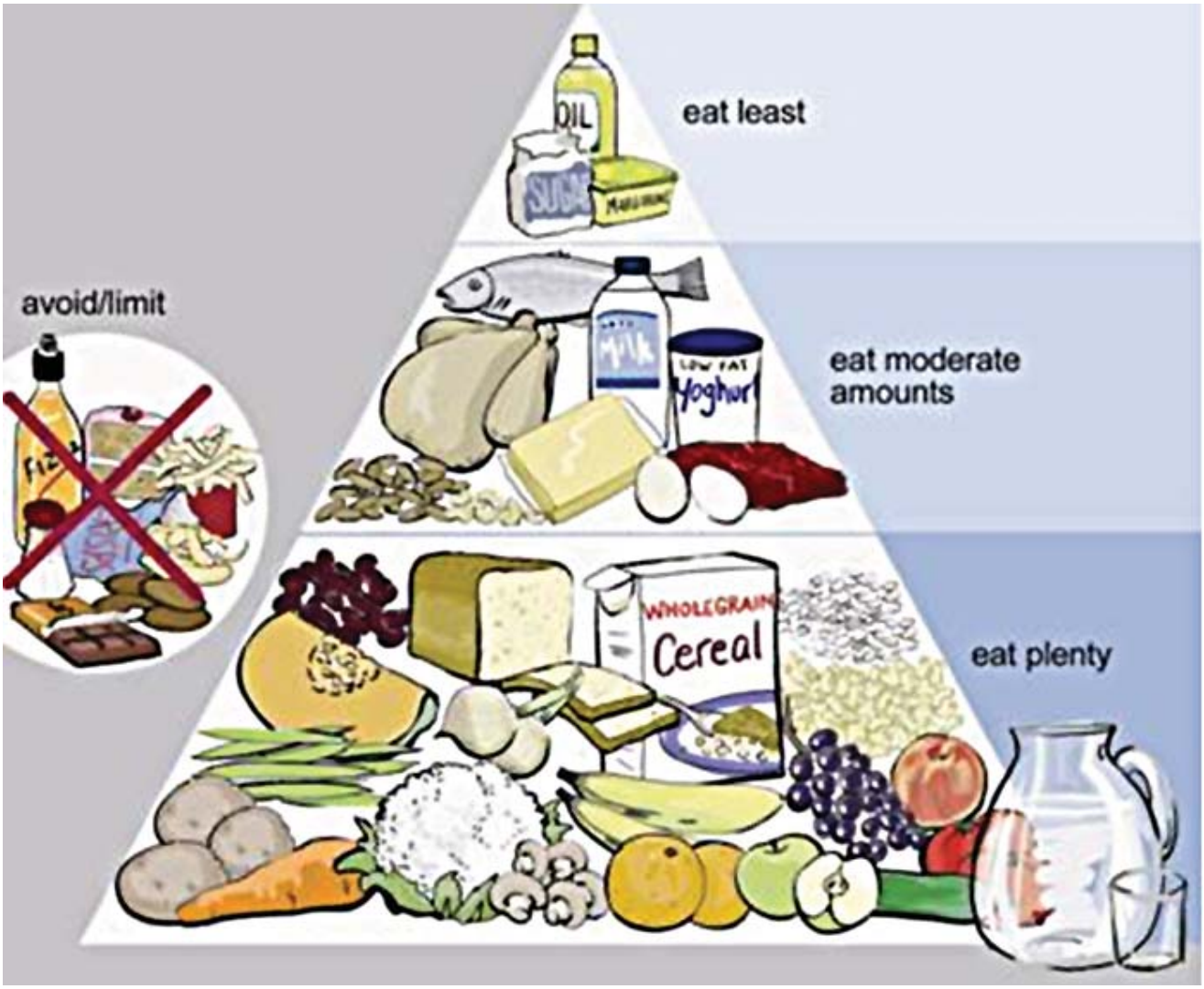
Eating does more than just provide food and building materials for the body. Eating is a pleasurable and social experience.

Diabetes should not stop you from enjoying food and eating with friends and family. You can still enjoy special occasions such as family, social, school and religious festivals. Tell your dietitian, diabetes educator and doctor what you eat and when. Your food and any diabetes medications can be adapted to suit your lifestyle and normal family routine. However you may need to make changes to your eating habits to keep your diabetes under control and stay healthy.

Why is healthy eating important?
A healthy diet is one of the most important parts of diabetes management.

Eating well can help to control your blood glucose (sugar) levels, cholesterol and blood pressure. Eating well can also help you to lose weight if you are overweight. Being overweight makes it harder to control your diabetes.

It is important that any dietary advice is tailored to your needs. That is where your dietitian is helpful.



What is healthy eating for diabetes?

Healthy eating for diabetes is the same as healthy eating for everyone. A good eating pattern follows the Australian Dietary Guidelines:

- Eat plenty of vegetables, fruit and legumes (dried beans, dried peas and lentils)
- Eat plenty of cereals (including bread, pasta, rice and noodles). Choose mostly wholegrain or wholemeal varieties
- Include lean meat, fish, poultry, eggs, nuts and seeds. Try to eat fish at least twice a week
- Include dairy foods (e.g. milk, cheese and yoghurt). Reduced fat varieties are a better choice for adults, adolescents and children over 2 years old
- Limit saturated fat (e.g. fatty meat, skin on chicken, full fat dairy, coconut and palm oil)
- Have a moderate fat intake
- Avoid adding salt to food. Choose low salt or reduced salt foods (e.g. unsalted nuts). Limit salty foods (e.g. packet soups, chips, salted nuts, cheese and processed meats)
- Eat only moderate amounts of sugars and foods high in sugars (e.g. regular soft drink, lollies and cordial)
- Drink plenty of water
- If you do drink alcohol, drink in moderation only.

How can I keep my blood glucose levels in the healthy range?

It is very important for people with diabetes to try to keep their blood glucose (sugar) levels under control with regular physical activity, healthy eating and, sometimes, medications.

You can help to do this by spreading your food intake out over the day, not overdoing your serve sizes and choosing mostly slower release, lower glycemic index carbohydrates. Carbohydrates and glycemic index are explained in section 6.

It is important to have regular reviews with your dietitian. They can help you get the balance right between your blood glucose levels, the food you eat, your diabetes medications and exercise. They may suggest you make changes to the types of food you eat and how much you eat to help keep you healthy, but will try to work within the foods and cooking methods that you traditionally use.

6 What's in food?

You may have heard about:

- Carbohydrates
- Fibre
- Protein
- Fat
- Vitamins and minerals.

These are called nutrients and they help your body to work properly and stay healthy. A nutrient is a substance found in food. You can find more information on each of these nutrients below.

Carbohydrates

These are the best energy source for your body. When they are eaten they break down to form glucose in the bloodstream. Eating regular meals and spreading your carbohydrate foods over the day can help to maintain your energy levels without causing blood glucose (sugar) levels to go too high or too low.

Carbohydrate foods include:

- Breads and cereals (e.g. bread, crumpets, cereal and oats)
- Milk and yoghurt
- Fruits
- Starchy vegetables and legumes (e.g. potato, sweet potato, sweet corn and legumes)
- Sugar and sugary foods (e.g. regular soft drink and lollies).

Most of these foods, except sugar and sugary foods, also provide other important nutrients to help keep you healthy. It is important to include these foods everyday.

Eating a large serve of carbohydrate (e.g. a large plate of pasta, rice or potato) may cause your blood glucose levels to rise too high. Also, eating too much food all the time, even if it is healthy food, will cause you to put on weight. Being overweight makes it harder to control your blood glucose levels.

As everyone is different, talk to your dietitian about the amount of carbohydrate food you need to eat.

Sometimes testing your blood glucose level after a meal can help you to work out if you ate too much carbohydrate. If this happens a lot, speak to your dietitian or diabetes educator who can give you advice on what to do. Cutting down carbohydrates is not always the answer.

Glycemic Index

All carbohydrate foods will break down to form glucose. Some carbohydrates break down fast and some break down slowly. The glycemic index is a way of measuring how fast or slow a carbohydrate food affects blood glucose levels.

Low glycemic index foods raise your blood glucose levels more slowly than high glycemic index foods. Eating mostly low glycemic index foods may help people with diabetes to reduce average blood glucose levels, lower blood fats and raise healthy cholesterol. They may also help you feel fuller for longer which may help with weight control. It is still important not to overdo your serve sizes.

Not all low glycemic index foods are healthy. You still need to consider if the food fits into the Australian Dietary Guidelines. Try to eat mostly healthy, low glycemic index foods. Including a low glycemic index food at every meal is a good start.

Some healthy low glycemic index foods include pasta, legumes (dried beans, dried peas and lentils), sweet corn, milk, yoghurt, most fruit, and most high fibre, grainy breads.

Rice is usually a high glycemic index food. However there are some rices that have a lower glycemic index. These include long grain rices, Doongara rice, basmati rice, and Moolgiri rice.

What about sugar?

Sugar is also a carbohydrate. Eating small amounts of sugar will not affect your diabetes, (i.e. 1-2 teaspoons of sugar in your cup of tea is ok if you have over 2 - 3 cups a day). However, if you have mroe than this then you may need to consider using an articial sweetener. Some jam on your toast is also ok, but be sure to choose wholemeal or wholegrain bread for toasting.

Some foods that contain sugar are also healthy foods (e.g. fruit and milk naturally contain sugar). Other healthy foods have had small amounts of sugar added to them (e.g. some high fibre breakfast cereals and yoghurts). We know these foods are good for us so we can include them in our diet.

However, eating or drinking large amounts of foods that are very high in sugar (e.g. regular soft drinks, cordials or lollies) can cause your blood glucose (sugar) levels to rise too high. They can also cause you to put on weight. These foods are best eaten in small amounts. Choose diet soft drinks and cordials instead of standard varieties.

If you are using sugar in recipes, think about how much sugar you will end up eating. If the recipe is very high in sugar and you will be having a large serve, try reducing the amount of sugar, have a smaller serve or replace some of the sugar with an artificial sweetener. Try to choose recipes that are low in fat (particularly saturated fat) and contain some fibre.

Fibre

This is important for everyone, including people with diabetes. Fibre can help keep your digestive system healthy and prevent constipation.

Fibre is also very useful for people with diabetes. It can help to lower "bad" cholesterol which helps to keep your heart healthy. Also many foods that are high in fibre have a low glycemic index. This is because some types of fibre can slow down digestion of the food. Eating foods high in fibre can also keep you feeling fuller for longer so may help with weight control. High fibre foods include whole fruits (not juice), vegetables, legumes, nuts and seeds, grainy and wholemeal breads and cereals (e.g. grainy breads or high fibre cereals such as bran).

Fat

This is an essential nutrient. However, many of us eat too much fat or eat the wrong types of fat.

Fat is high in kilojoules. Eating too much fat can cause you to put on weight or make it harder for you to lose weight.

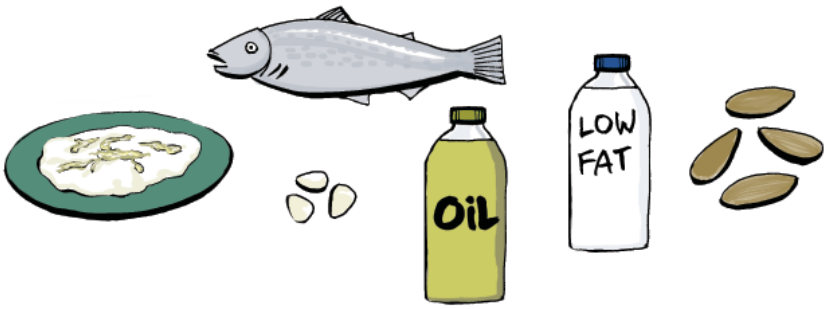
Some fats (saturated fats and trans fats) can increase your risk of heart disease and make it harder to control your diabetes. Avoid these types of fats.

Polyunsaturated fats (e.g. oily fish, safflower and sunflower oils) and monounsaturated fats (e.g. avocado, canola and olive oils) can help reduce your risk of heart disease. They are better choices than saturated fat. Both of these fats have benefits for your health, so vary between them. These fats are still high in kilojoules, so if you are overweight, eat them in moderation.

To help you get the right type of fat and avoid eating too much fat…

Choose:

- Meat trimmed of fat
- Chicken trimmed of fat and skin
- Low fat cooking methods such as barbequing, grilling, dry frying, baking, steaming or poaching
- Low fat dairy foods.
- To eat more fish including oily fish (e.g. tuna, salmon, mackerel, herrings and sardines)
- Olive, canola, safflower or sunflower oils for cooking
- Margarines made from olive, canola, safflower or sunflower oils
- To include small amounts of avocado, nuts and seeds in your diet



Limit/avoid:

- Fatty or processed meats (e.g. salami and sausages)
- High fat cooking methods such as frying or roasting in fat
- Full fat dairy foods
- Butter, ghee, cream, coconut milk or cream
- Fried foods, cakes, pastries, biscuits, crisps and crackers.

Protein

Protein is essential every day to repair old or damaged body parts. Most people living in Australia already eat enough protein and do not need to eat more.

Choose protein foods that are also low in fat. Foods that are a good source of low fat protein are lean meat, poultry without the skin, fish and seafood, eggs, low fat dairy products, unsalted nuts, legumes (dried beans, dried peas and lentils) and soy products such as tofu.

Speak to your dietitian if you are not sure if you are eating enough protein.

Vitamins and minerals

Vitamins and minerals are important for a healthy body. Eating a wide variety of foods from all five food groups will help you get all the vitamins and minerals your body needs.

The food groups are:

- Breads and cereals
- Vegetables
- Fruit
- Dairy foods
- Meat or meat alternatives (e.g. poultry, eggs, legumes, nuts and seeds).

7 Common questions about food and diabetes

How often should people with diabetes eat?
It is important for all people with diabetes to eat regular meals over the day. This helps to spread food intake out and prevent blood glucose (sugar) levels going too high or low.

Some people with diabetes take medications and/or insulin to help manage their diabetes. These medications may mean that you need to eat at certain times, eat snacks between meals or have a snack before bed. Discuss with your dietitian, diabetes educator or doctor whether you need to eat at certain times or need to eat snacks.

If you keep irregular hours (or you do shift work) it is important to discuss this with your dietitian, diabetes educator or doctor as your medications and/or insulin may need to be adjusted to fit in with when you are able to eat. It is important that you do your best to have a regular eating pattern from day to day.

Why is it important to manage my weight?
Being overweight can make it harder to control your blood glucose levels. Carrying too much fat around your middle is especially bad for diabetes and heart disease. If you are overweight, ask your dietitian for advice on how to adjust your food intake to lose weight. Also speak to your doctor or an exercise physiologist about exercise.

Are "diet" foods suitable?
Not all diet foods or foods marked "suitable for diabetics" are useful for people with diabetes. Often they can be quite high in kilojoules or may have a lot of fat in them. Also they can often be quite expensive.

Diet foods that you should avoid are:
- "Diabetic" chocolate. These are usually high in fat
- "Low carbohydrate" beer. These beers are still high in alcohol. It is the alcohol that is more of a problem then the carbohydrate content.

Some diet foods are fine for people with diabetes. These are foods that normally may be high in added sugar. Replacing the sugar with an artificial sweetener means you do not have to worry that they will raise your blood glucose level too high. These include:

- Diet soft drinks
- Diet cordials
- Diet jellies
- Diet yoghurts.

What foods can I eat if I am always hungry?
If you are often hungry, make sure you are not overly restricting how much you eat just to keep your blood glucose levels down. This is especially important for children, adolescents and the elderly. Speak to your dietitian about what is the right amount of food for you.
If you are eating the right amount of food and are still hungry, try to include high fibre and low glycemic index foods in your meals and snacks. They can help to keep you feeling full for longer.

Some foods can be eaten without affecting your blood glucose level or body weight. These are the kind of foods you should aim to eat if you are still hungry. These foods are often called "free" foods.

They include:

- Most vegetables except the starchy vegetables (potato, sweet potato and corn), legumes, avocado and olives
- Some fruits (e.g. lemon, lime, cumquats, loquats, passionfruit, berries and rhubarb)
- Black or green tea (without milk or sugar)
- Herbal teas
- Coffee (without milk or sugar)
- Water, including soda water and plain mineral water
- Diet soft drinks and cordials
- Clear broth
- Tomato juice
- Fresh lemon juice
- Diet jelly
- Herbs and spices.

What can I add to food to give it more flavour?

It is important to limit salt and foods containing salt. This is because a high salt intake can cause high blood pressure.

Herbs, spices, chilli, garlic, lemon, lime and vinegar can all be used to add flavour to food without affecting blood glucose (sugar) levels or blood pressure. Use your traditional herbs and spices to maintain the traditional flavour of meals (e.g. garlic, dill, bay leaves, caraway seeds and onions).

Why should I see a dietitian?

A dietitian is a health professional who can help you manage food and diabetes. If you can, make an appointment to see a dietitian when you are first diagnosed with diabetes. Continue to see a dietitian once or twice a year from then on.

Your doctor might also suggest you see a dietitian if you are prescribed medications or change your medications. This is because medications can affect the balance between food and your blood glucose levels.

Call Diabetes Australia-NSW on 1300 136 588 for more information.

8 Diabetes and alcohol

Too much alcohol is harmful for everyone, including people with diabetes. However, having diabetes does not mean that you can't drink alcohol. Drink alcohol in moderation and be aware of the following:

- Alcohol can increase body weight, blood pressure and some blood fats. This can make it harder to manage your diabetes and increases your risk of heart disease
- People who take insulin or some diabetes tablets can have a very low blood glucose (sugar) level (see section 14) after drinking alcohol. In some people this can happen after just small amounts of alcohol. Always eat carbohydrate food when drinking alcohol. Ideally, drink alcohol with a meal but, if this is not possible, snack on foods like low fat crackers, pretzels or bread
- The symptoms of drunkenness and hypoglycaemia are similar. People may not offer you help if they think that you are just drunk. Let the people with you know that you have diabetes and what to do if you have hypoglycaemia.

Drink alcohol in moderation

Moderate drinking means no more than one standard drink for women and two standard drinks for men per day. A standard drink is a 285 ml of full strength beer, 375 ml mid-strength beer, 425 ml of light beer (less than 3% alcohol), 100 ml wine or 30 ml spirits.

To help reduce how much alcohol you drink, try diluting it by adding water, soda water or diet soft drink. You could also try alternating between alcoholic and non-alcoholic drinks. Aim for some alcohol free days each week.

9 Physical activity

Physical activity is very important for everybody and especially for people with diabetes. Regular physical activity can help you to keep fit, maintain a healthy weight and manage your diabetes better.

Why it is good for you

Regular physical activity can:

- Lower your blood glucose (sugar) levels and improve your blood glucose control
- Help your diabetes medications and/or insulin work better
- Help you to manage your weight and/or help you to lose weight
- Lower blood pressure and blood fats such as cholesterol
- Improve the health of your heart
- Reduce stress
- Reduce your risk of developing diabetes complications
- Help you sleep better
- Make you feel good!

For good health:

- Think of physical activity as an opportunity, not an inconvenience
- Be active in as many ways as you can
- Put together at least 30 minutes of moderate intensity physical activity on most, if not all, days of the week
- If possible, do some regular vigorous exercise for extra health and fitness.

What does this mean?

- Find ways to be move active (e.g. take the stairs, walk to the shops instead of driving or park the car further away)
- Try aerobic activities that are continuous and move your large muscles. Walking, bike riding, dancing and swimming are all good activities
- Aim to do these activities at a level that makes you breathe a bit harder but you can still talk
- You don't have to do it all in one go. 30 minutes can be divided into three 10 minute blocks
- Try to do some activity every day.

What about resistance training?

You should aim to include some kind of weight or resistance training. Resistance training means any exercise or activity where you use your body to lift something or to work against a weight, force or gravity.

Resistance training is great for helping you to keep active and independent for longer and for helping you to manage your diabetes better.

Resistance training can:

- Improve the way your body uses insulin
- Increase your muscle mass. This increases how much energy you burn which helps with weight management and improving blood glucose control
- Decrease your risk of falling and of developing osteoporosis
- Improve strength, power, balance and co-ordination.

How much resistance training do I need to be doing for good health?

- Try to lift weights (e.g. cans of food or hand weights) two to three times a week
- Include exercises that target all of your large muscle groups, including your arms and legs
- Aim to do each exercise eight to 12 times (repetitions), and perform two to three lots (sets) of each exercise
- Start with a light weight till you learn the correct technique. After you have mastered this weight, try lifting a heavier weight
- Ideally, aim to lift a weight that only allows you to do eight to 12 repetitions each time.

The effects of physical activity when taking insulin or certain diabetes tablets

Because exercise can lower your blood glucose (sugar) levels, it can cause hypoglycaemia, even many hours later. You may need to alter your diabetes medications or consume extra carbohydrates to account for the effect exercise can have on your blood glucose levels.

It is important to regularly test your blood glucose levels before, sometimes during, immediately after and a couple of hours after exercise so you know what your blood glucose levels are and how your body responds to exercise.

If your blood glucose levels are above 15 mmol/L*, or you have been recently unwell, do not exercise.

Most important!

Enjoy the activity you have chosen. Be active in as many ways as you can, every day, and remember you don't have to take it seriously, just regularly.

Always speak with your doctor before beginning a new physical activity program. If you require more guidance or advice about exercising with diabetes, speak with an exercise physiologist.

**mmol/L is a measurement used by your blood glucose meter.*

10 Type 2 diabetes medications

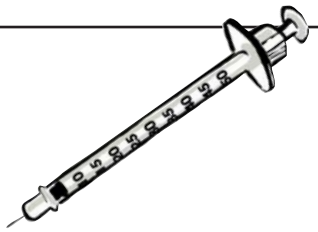
Type 2 diabetes is a progressive disease so even though you can be doing all the right things to manage your diabetes, it may be necessary to start medication in order to maintain healthy blood glucose (sugar) levels.

When starting new medication you need to ask your doctor and pharmacist:

- How often you should take your medication
- How much medication you should take
- What time of the day you should take your medication; whether before food, with food or after food
- What they do to your body
- The side effects
- How they affect, or are affected by, other medication you are taking.

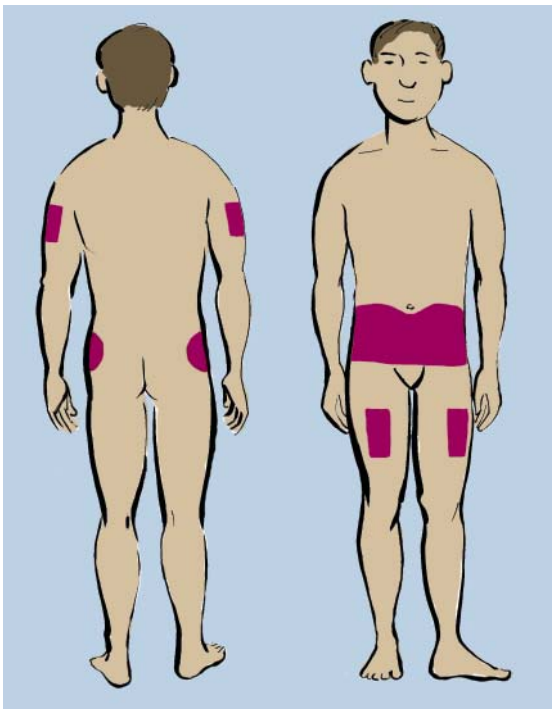
Do not stop, decrease or increase your medication without first discussing it with your doctor, pharmacist or diabetes educator.

11 Insulin



The pancreas is an organ situated behind the stomach that produces a hormone called insulin.

Without insulin, the cells in our bodies would not be able to process glucose (sugar) – the source of energy for our bodies – and we would therefore have no energy. In type 1 diabetes the pancreas does not make any insulin for your body's needs and glucose levels build up in the blood. This requires the administration of insulin, which is needed for the rest of the person's life unless research finds a cure.



In some stages of type 2 diabetes and gestational diabetes, the pancreas does not make enough insulin for your body's needs and therefore glucose levels build up in the blood. The body needs help and this may require the administration of insulin.

All insulin preparations lower blood glucose (sugar) levels. There are many types of insulin available and you and your doctor will discuss which is right for you. If you have any questions or concerns about starting on insulin you can also contact your diabetes educator.

Key points to remember are:

- The type of insulin preparation used and the daily dosage
- The time your insulin has its maximum effect and how long its effect lasts
- Regular timing of injections and meals
- Tell your doctor or diabetes educator of any change in your lifestyle, working hours, physical activity or meal times. They will advise you if you need to change your insulin regime
- When to test your blood glucose level and how to adjust your insulin if required.

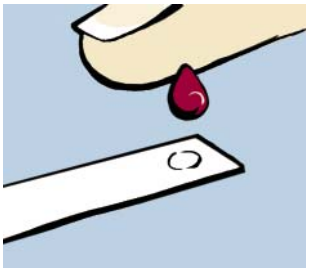
Sharps disposal

Your used sharps must be secured in a strong puncture resistant container, such as an Australian Standard Sharps container (available from Diabetes Australia-NSW and some pharmacies) or a puncture resistant plastic container with a screw top. Sharps must **NOT** be placed in any recycling bins.

Sharps disposal services are available for people with diabetes at selected pharmacies and other authorised collection points in your state.

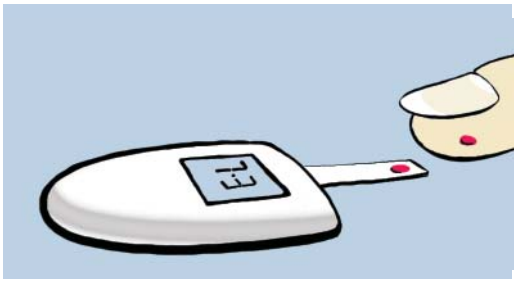
Certain public hospitals in some states have a sharps disposal facility. For a list of sharps disposal facilities in your area, contact your local council or phone Diabetes Australia-NSW on 1300 136 588.

12 Blood glucose (sugar) testing



Self-blood glucose testing is a method of measuring how much glucose is in your blood. A drop of blood is obtained by pricking the finger with a needle called a lancet. The blood is applied to a test strip, which is read by a blood glucose machine (meter).
There are many types of meters available. Ask your doctor or diabetes educator which meter suits you. You will also need to be shown how to use your meter.

Why you should test
Monitoring blood glucose levels is important to help you manage your diabetes. Blood glucose levels respond to food, particularly carbohydrates. Other factors such as physical activity, diabetes medication, changes in your daily routine, stress and illness will also cause blood glucose levels to go up or down. Visits to a doctor or health professional may be weeks or months apart so you need to understand the numbers on your meter and make decisions in-between visits.



The benefits of using a meter include:
- Allowing you to be in control of your diabetes
- Showing the effects of food and physical activity on your blood glucose level
- Providing a picture of your overall diabetes management and whether you are keeping your blood glucose levels within a target range
- Seeing if your blood glucose level is too high or too low.

This gives you and your health team the information needed to help manage your diabetes.

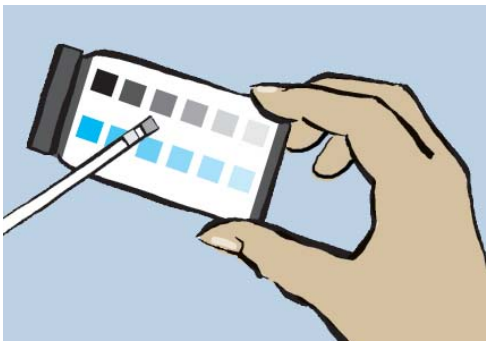
When you should test
Blood glucose tests usually are done before meals or two hours after meals. Ask your doctor or diabetes educator for advice on when and how often you need to test.

Test more often:
- If you are sick
- When adjusting medication and/or insulin doses
- When blood glucose levels are high (e.g. over 15 mmol/L).

What should my blood glucose levels be?
The normal range for blood glucose is about 4 to 6 mmol/L before meals and 4 to 8 mmol/L two hours after meals. Your doctor or diabetes educator will advise you on what blood glucose level will be best for you.

13 Ketone testing

Ketones are chemicals in the blood which are produced from the breakdown of fat. If the body has no insulin present, glucose (sugar) can't be changed into energy. Therefore the body makes ketones as a different source of energy. This may occur due to poor control of diabetes, insufficient or missed insulin doses, illness or infection.



It is not necessary to test for ketones on a routine basis; however, people with diabetes should test for ketones in the event of the following:

- Persistently high blood glucose
- Vomiting
- Fever, infection or illness
- Blood glucose being greater than 15 mmol/L.

There are two methods of testing for ketones – by testing blood and by testing urine.

Blood ketone test

There are meters available to test blood for ketones. The same drop of blood to be tested for glucose can be used to test for ketones. Different strips are used for testing glucose and ketones. Ketone strips are not subsidised by the National Diabetes Services Scheme (see section 25) at present.

Urine ketone test

Test strips are available to check for urine ketones. Ask your pharmacist about the types of urine ketone strips available and carefully follow the directions for testing. Urine ketone tests must be timed exactly, using a watch or clock with a secondhand.

Seek URGENT medical attention if:

- The urine ketone test shows medium or high levels of urine ketones
- The blood ketone test result is 0.6 mmol/L or higher.

Tell the person answering the phone that you are experiencing a diabetes emergency.

Blood ketone level	Urine ketone level	Action
<0.6 mmol/L	Negative - Trace	Normal level – no action required
0.6-1.5 mmol/L	+	Contact a health professional as ketoacidosis could be developing. You may require extra insulin
>1.5 mmol/L	++ or more	You may be developing ketoacidosis. Contact your health professional urgently for advice

14 Hypoglycaemia (hypo)

This is when the blood glucose (sugar) level drops lower than normal – below 4 mmol/L.

Hypoglycaemia can occur with people who take certain tablets for their diabetes, or those using insulin.

Blood glucose levels can be low because of:

- Delayed or missed meals
- Not enough carbohydrate in the meal
- Extra activity or more strenuous activity
- Too much diabetes medication
- Alcohol.

Symptoms

These can vary from person to person and may include:

- Dizziness/light headedness
- Sweating
- Headache
- Weakness
- Shaking
- Tingling around the lips
- Hunger/stomach pains
- Mood changes, (e.g. irritable or tearful).

Test blood glucose levels immediately. Stop activity and sit still. Treat immediately if relevant. **If you are unable to test, treat anyway.**

Treatment for low blood glucose levels (hypos) in a person who is conscious, cooperative and able to swallow

Step 1

Take quickly absorbed carbohydrate such as:

- Popper of juice
- Five to seven jellybeans
- Three teaspoons of sugar or honey
- Glucose that contains 15 grams of carbohydrate.

Step 2

Follow up with more slowly absorbed carbohydrate such as:

- Biscuits
- Sandwich
- A glass of milk
- A piece of fruit.

Re-test the blood glucose level after 15 minutes. If still below 4 mmol/L, repeat **step 1**

If not treated, the blood glucose levels can continue to drop resulting in:

- ***Loss of coordination***
- ***Confusion***
- ***Slurred speech***
- ***Loss of consciousness/fitting***
- ***Coma.***

Should a person refuse to eat or drink, be unable to swallow, or be semconscious or unconscious.

THIS IS AN EMERGENCY ! !

Instructions for the person present during this emergency:

This person *must not* be given anything orally

- Place the person in the recovery position
- Make sure the airway is clear
- Ring 000 for an ambulance stating 'diabetes emergency'
- If you are able, give a Glucagon injection.

Important points

- Always carry 'hypo' food with you if you are taking certain diabetes tablets and/or are on insulin
- Carry identification to say you have diabetes
- Test before driving or exercising
- Discuss the possibility of hypos with your doctor or diabetes educator.

15 Hyperglycaemia and sick days

This is when the blood glucose (sugar) levels are much higher than normal – above 15mmol/L.

Blood glucose levels can go high because:

- You have eaten too much carbohydrate
- You have not taken enough diabetes medications and/or insulin
- During sickness or infection, insulin does not work as well and glucose levels tend to rise
- Emotional, physical or mental stress can push up the glucose level
- Alcohol can sometimes cause hyperglycaemia as well as hypoglycaemia
- Certain tablets or medicines, including cortisone, cause a high glucose level
- There's a problem with your blood glucose meter, strips or technique
- If on insulin, there may be lumps present at the injection sites
- Your fingers were not clean when testing your blood
- You have tested too soon after eating. You should test two hours after a meal.

Symptoms

You may feel tired, thirsty, pass urine more frequently and may feel generally unwell.

If feeling unwell:

- Test for ketones (see section 13)
- Test blood glucose levels more often
- Drink fluids and continue to eat
- Treat symptoms of illness
- Call your doctor if there is no improvement.

16 Acute complications

Acute diabetes complications are those that happen rapidly due to very high or low blood glucose (sugar) levels.

These complications include:

- Hypoglycaemia (see section 14)
- Diabetic Ketoacidosis
- Hyperosmolar Non-Ketotic (HONK) coma

Diabetic ketoacidosis (DKA)

This is a life-threatening condition that occurs, usually in people with type 1 diabetes, when there is insufficient insulin and blood glucose (sugar) levels are extremely high. This causes imbalances in body fluid and salt levels, leading to dehydration and build up of acids in the blood. This results in vomiting and increased drowsiness.

THIS IS AN EMERGENCY AND REQUIRES URGENT MEDICAL ATTENTION

The causes of DKA are:

- Previously undiagnosed type 1 diabetes
- Omission of insulin (accidental or deliberate)
- Illness/infection/inadequate insulin doses.

Hyperosmolar Non-Ketotic (HONK) coma

This is a complication of type 2 diabetes that involves extremely high blood glucose levels without the presence of ketones.

Whether your type 2 diabetes is treated with diet and exercise, diabetes medications and/or insulin, when blood glucose levels are very high the body tries to get rid of the excess glucose in the urine. This significantly increases the amount of urine and often leads to dehydration, so severe that it can cause seizures, coma and even death.

The main causes of HONK are:

- Undiagnosed type 2 diabetes
- A previous or current illness (e.g. pneumonia and urinary tract infections)
- Other major illnesses (e.g. stroke or a heart attack)
- Persistent physical or emotional stress
- Certain medications. This is another reason you need to talk to your doctor, diabetes educator or pharmacist about the medications you are taking.

HONK requires URGENT medical attention.

17 Chronic complications

Blood glucose (sugar) levels that remain high for too long can cause a number of diabetes related complications such as eye, kidney, nerve and also heart disease and circulation problems. High blood glucose levels also increase the risk of infection and affect the recovery from infection. For these reasons, it is very important that you try to keep your blood glucose levels within the ranges recommended by your doctor or diabetes educator.

Eye disease: Damage can occur to the back of the eye (retina) where there are blood vessels and nerves important for vision. This is called **retinopathy**. The development of retinopathy is strongly related to the length of time diabetes has been present and how well the blood glucose levels have been controlled. High blood pressure, kidney failure and high cholesterol can also affect the severity of diabetic retinopathy.

Vision loss or blindness is preventable through early detection and appropriate treatment. The treatment for diabetic retinopathy can be laser therapy or surgery.

Glaucoma and cataracts can occur at an earlier age and more often in people with diabetes. **Cataracts** affect the eye's lens, causing it to become cloudy with a loss of vision. The treatment for cataracts is surgery, where the entire lens is removed and an artificial lens is put in its place. **Glaucoma** occurs when the pressure inside the eye becomes very high, causing damage to the optic nerve. The treatment for glaucoma can be eye drops, laser therapy or surgery.

Kidney disease: Your kidneys help to clean your blood. They remove waste from the blood and pass it out of the body as urine. Over time, diabetes can cause damage to the kidneys (diabetic nephropathy). You will not notice damage to your kidneys until it's quite advanced, so it is important that you have the recommended tests to pick up any problems early.

If the kidneys fail, toxic waste products stay in the body, fluids build up and the chemical balance is upset. If the kidneys are unable to function properly, dialysis treatments or a kidney transplant will be needed.

The risk of developing kidney problems is reduced by managing your blood glucose levels, having regular kidney and blood pressure checks and leading a healthy lifestyle. Early signs of kidney problems can be detected through a urine test. Finding out about early kidney damage is simple and painless. Treatment at this time can prevent further damage.

People with diabetes are also at an increased risk of infections of the bladder, kidneys and urinary tract.

Nerve disease: Diabetes can, over time, cause damage to nerves throughout the body. This damage is referred to as diabetic neuropathy which leads to numbness and sometimes pain and weakness in the hands, arms, feet and legs. Problems may also occur in organ systems, including the digestive tract, heart and sex organs.

Diabetic neuropathy appears to be more common in people who have had problems controlling their blood glucose levels, in those with high levels of blood fat and blood pressure, in overweight people and in people over the age of 40. Symptoms depend on the type of neuropathy and which nerves are affected.

Some people have no symptoms at all.

Symptoms may include:

- Numbness, tingling, or pain in the toes, feet, legs, hands, arms, and fingers
- The muscles of the feet or hands waste away
- Indigestion, nausea or vomiting
- Diarrhoea or constipation
- Feeling dizzy or faint
- Visual problems
- Problems with urination
- Erectile dysfunction (impotence) or vaginal dryness
- Sweating and palpitations
- Weakness
- Dry skin
- Dry mouth, eyes or nose.

Due to neuropathy, the person may lose weight and suffer with depression. Neuropathy can also cause muscle weakness and loss of reflexes, especially at the ankle, leading to changes in the way the person walks. Foot deformities may occur. Blisters and sores may appear on numb areas of the foot because pressure or injury goes unnoticed. If foot injuries are not treated promptly, the infection may spread to the bone, and the foot may then have to be amputated.

The best way to prevent neuropathy is to keep blood glucose (sugar) levels as close to the normal range as possible. Foot care (see section 19) is of great importance to reduce further complications.

Treatment includes pain relief and other medications as needed, depending on the type of nerve damage.

Heart disease/stroke: People with diabetes are at increased risk of heart disease and stroke. Consistently elevated blood glucose levels cause damage to the large blood vessels that lead to the heart (coronary arteries) and outside the heart (peripheral arteries). Coronary artery and peripheral vascular disease are progressive diseases that involve the hardening and narrowing of the arteries due to a gradual buildup of plaque (fatty deposits).

Coronary artery disease is the most common form of heart disease. Blood carries oxygen and other important nutrients to your heart. Blood vessels to your heart can become partially or totally blocked by fatty deposits. A heart attack occurs when the blood flow supplying oxygen to your heart is reduced or cut off and can result in chest pain (angina).

Over time, coronary artery disease can weaken the heart muscle and lead to heart failure, which occurs when the heart cannot pump blood effectively to the rest of the body. There may also be changes in the normal beating rhythm of the heart.

Peripheral vascular disease occurs when blood vessels in the legs are narrowed or blocked by fatty deposits, causing reduced blood flow to your feet and legs. Many people with diabetes and peripheral vascular disease do not have any symptoms.

Others may have the following symptoms:

- Leg pain, particularly when walking or exercising, which disappears after a few minutes of rest
- Numbness, tingling, or coldness in the lower legs or feet
- Sores or infections on feet or legs that heal slowly.

Certain exercises, such as walking, can be used both to treat and prevent peripheral vascular disease. Medications may help relieve symptoms. Treatment may involve surgical procedures.

A **stroke** occurs when blood supply to part of your brain is interrupted and brain tissue is damaged. The most common cause is a blocked blood vessel. Stroke can cause physical problems such as paralysis, problems with thinking or speaking, and emotional problems. You can lower the risk of stroke by keeping your blood glucose, blood pressure and cholesterol on target with meal planning, physical activity, and medication. Quitting smoking is important. Every step you take will help.

Infection: High blood glucose (sugar) levels can lower your resistance to infection and can slow the healing process.

Oral health problems: When diabetes is not controlled properly, high glucose levels in saliva may increase the amount of bacteria in the mouth and may also cause dryness in the mouth. Because diabetes reduces the body's resistance to infection, the gums are among the tissues likely to be affected. Periodontal diseases are infections of the gum and bone that hold your teeth in place. Even if you wear dentures, you should see your dentist every six months.

Some signs and symptoms of gum problems include:

- Gums that are red and swollen, or that bleed easily
- Persistent bad breath or bad taste in the mouth
- Any change in the fit of partial dentures.

Fungal infections / Thrush: Thrush is the term used for a common infection caused by a yeast-like fungus. Yeast infections are often associated with diabetes, especially when the blood glucose level is very high. Persistent cases of thrush may sometimes be an early sign of diabetes. Thrush can occur in the mouth, throat, digestive tract, vagina or on the skin. It thrives in the moist areas of the body.

Oral thrush, a fungal infection in the mouth, appears to occur more frequently among people with diabetes, including those who wear dentures. Thrush produces white (or sometimes red) patches in the mouth. It may cause a painful, burning sensation on your tongue. It can affect your ability to taste foods and may make it difficult for you to swallow.

In women, vaginal thrush is a very common infection.

Urinary tract infections are more common in people with diabetes. They are caused by micro-organisms or germs, usually bacteria.

Signs and symptoms include:

- Wanting to urinate more often, if only a few drops
- Strong smelling and cloudy urine
- Burning pain or a 'scalding' sensation on urination
- A feeling that the bladder is still full after urination
- Blood in the urine.

It is important to see your doctor if any infection is suspected.

18 Smoking and diabetes

Tobacco has many unhealthy effects, especially for people with diabetes. People with diabetes who use tobacco products are three times more likely to die of heart disease or stroke than people with diabetes who do not smoke. Smoking reduces the amount of oxygen reaching the body's tissues, increases fat levels in the blood, damages and constricts blood vessels and increases blood pressure. All of these contribute to the risk of heart attack and stroke. Smoking can also worsen blood supply to feet.

More frequent monitoring of blood glucose (sugar)levels is important if people are taking insulin or certain diabetes medications as their blood glucose levels may lower when they quit smoking. This may require changes to medication doses. It is advisable that people with diabetes discuss with their doctor the various methods, products and services available to help quit smoking.

19 Diabetes and your feet

Diabetes may affect the feet in two ways. Firstly, nerves which allow you to feel pain, temperature extremes and give early warning of possible trauma can be damaged. Secondly, the blood supply to the feet is reduced due to damage to the blood vessels. This damage is more likely if you have had diabetes for a long time, or if your blood glucose (sugar) levels have been too high for too long.

It is recommended that people with diabetes should be assessed by a podiatrist (or an appropriate health professional), at least every six months, who will advise a common sense, daily care routine to reduce the risk of injuries and complications. It is up to you to check your feet every day.

Caring for your feet

- Know your feet well
  - *Look at your feet daily. Use a mirror if you need to. Check between your toes*
  - *Wash your feet daily in warm (not hot) water, using a mild soap, dry gently and thoroughly*
  - *Never soak your feet*
  - *Use a moisturiser to avoid dry skin*
- Get medical advice early if you notice any change or problems with your feet
- Cut your toenails straight across – not into the corners – and gently file away any sharp edges
- Choose footwear which is appropriate for your activity. Smooth out wrinkles in socks
- Check your shoes regularly for excess wear on the outside and for any rough spots on the inner lining
- Corn cures and medicated pads can burn the skin. Do **NOT** treat corns yourself – see your podiatrist
- Avoid contact with very hot or cold items, such as hot water bottles, heaters, electric blankets, hot sand/pathways and hot bath water
- Avoid foot injuries by wearing shoes or slippers around the house and swim slippers at the beach or pool
- Wear insulated boots to keep feet warm on cold days
- Maintain blood glucose levels within the range advised for you
- Help the circulation to your feet with some physical activity, like walking.

20 Diabetes and pregnancy

The key to a healthy pregnancy for a woman with diabetes is keeping blood glucose (sugar) in the target range – before and during pregnancy. To do this, you need a diabetes management plan that balances meals, physical activity and insulin if relevant. This plan will change as your body changes during your pregnancy.

Why you need to keep your blood glucose levels within normal range

Having good blood glucose management reduces the risk of the baby having any abnormalities when all its organs are being formed in the first weeks of pregnancy. As your pregnancy progresses, it is very important that you maintain good blood glucose levels otherwise extra glucose in your blood will pass to the baby who can then become fat. Delivery of big babies can cause problems.

Who will help you before, during and after your pregnancy?

Apart from your diabetes health team (see section 3), other health professionals that will support you are:

- An obstetrician (a specialist doctor that looks after pregnant women)
- A neonatal paediatrician (a specialist doctor that looks after babies)
- A midwife (a person, usually a nurse, who assists women in childbirth).

Before you become pregnant, discuss pregnancy issues with your doctor or diabetes educator. If your pregnancy is unplanned, it is important to work with your medical team as soon as you know you are pregnant.

Exercise is a key part of diabetes management. Discuss your exercise plans with your diabetes health team. In general, it's not a good idea to start a new strenuous exercise program during pregnancy. Good exercise choices for pregnant women include walking, low-impact aerobics or swimming.

21 Diabetes and your emotions

Chronic diseases such as diabetes can have a major impact on emotions because they affect every aspect of the person's life. The physical, mental or emotional reactions to the diagnosis of diabetes and the ability to cope, impacts on the person with diabetes, their family, their friends and their work colleagues.

When a person is diagnosed with diabetes, there can be many emotions that can be experienced.

These include:
- Depression
- Anxiety
- Guilt
- Frustration
- Anger
- Fear.

Many people do not like the idea that they may have mental or emotional problems. Unfortunately, they find it embarrassing or view it as a weakness.

Talk to your doctor. Tell your doctor how you feel. If you feel you are more comfortable talking with other members of your diabetes health team (see section 3) such as a diabetes educator or podiatrist, talk to them. You need to tell someone. Then you will be referred to the right person who can help you move in the right direction.

Recommended websites:

www.diabetesnsw.com.au
www.diabeteskidsandteens.com.au
www.diabetescounselling.com.au
www.ybblue.com.au
www.blackdoginstitute.org.au

22 Diabetes and driving

High or low blood glucose (sugar) levels in people with diabetes can affect their ability to drive safely. People with diabetes may have developed complications such as vision problems, heart disease or nerve damage, which also can affect driving ability. It is vital that people with diabetes know what to do in order to keep themselves and others safe while on the road.

"Austroads", the road transport and traffic safety authority for Australia and New Zealand, has developed guidelines for doctors to help assess their patient's fitness to drive. Diabetes and cardiovascular disease are just two of the many conditions for which there are specific medical standards and guidelines which must be met for licensing and insurance.

The main concern when driving is a low blood glucose level (see section 14) that can affect a driver's ability to react and concentrate. Low blood glucose can also cause altered or loss of consciousness which could lead to losing control of the vehicle. People who are taking certain diabetes tablets and/or insulin can have a hypoglycaemic episode.

Hyperglycaemia or high blood glucose levels can also affect driving ability, because they can cause blurred vision, fatigue and decreased concentration.

Medical Standards for Licensing

Private and Commercial – people with diabetes who are managed without medication do not need to notify the Drivers Licensing Authority and may drive without license restriction. However, they should be reviewed periodically by their doctor for progression of the disease.

Private Licence – people with diabetes who are managed with medication, but **not insulin**, need to notify the Drivers Licensing Authority in person. They need to be reviewed every five years (meeting all other Austroads criteria).

Commercial Licence – people with diabetes who are managed with medication, but **not insulin**, need to notify the Drivers Licensing Authority in person. A conditional driver's licence may be granted subject to the opinion of the specialist, the nature of the driving task and at least an annual review (meeting all other Austroads criteria).

Private Licence – people with diabetes who are managed **with insulin** need to notify the Drivers Licensing Authority in person. A conditional licence may be granted subject to the opinion of the specialist/ treating doctor, the nature of the driving task and at least a two yearly review (meeting all other Austroads criteria).

Commercial Licence – people with diabetes who are managed **with insulin** need to notify the Drivers Licensing Authority in person. A conditional licence may be granted subject to the opinion of the diabetes specialist, the nature of the driving task and an annual review (meeting all other Austroads criteria).

Diabetes and driving - *continued*

Other factors can affect your driver's licence. Ask your doctor. Otherwise contact the Driver's ***Licensing Authority in your State:***

Australian Capital Territory – Department of Urban Services
Phone: (02) 6207 7000

New South Wales – Roads and Traffic Authority NSW
Phone: (02) 9218 6888

Northern Territory – Department of Planning and Infrastructure
Phone: (08) 8924 7905

Queensland – Queensland Transport
Phone: 13 23 80

South Australia – Department of Transport, Energy and Infrastructure
Phone: (08) 8343 2222

Tasmania – Department of Infrastructure Energy and Resources
Phone: 13 11 05

Victoria – VicRoads
Phone: (03) 9854 2666

Western Australia – Department for Planning and Infrastructure
Phone: 13 11 56 (08) 9427 8191

If you require further information, access the Austroads website:
http://www.austroads.com.au/aftd/index.html

23 Diabetes and travel

Having diabetes does not mean your travelling days are over. To ensure you have a safe and enjoyable trip, be sure to plan ahead. Good preparation may seem time consuming but it will help to ensure you get the most out of your holiday.

- Discuss your travel plans with your diabetes doctor or educator. Also discuss medication adjustments for situations you may encounter, such as crossing time zones, or when experiencing diarrhoea and/or nausea

- Pack more test strips, insulin, syringes, pens and other diabetes equipment than you will need for the trip. If possible, pack a spare meter in case of loss or damage

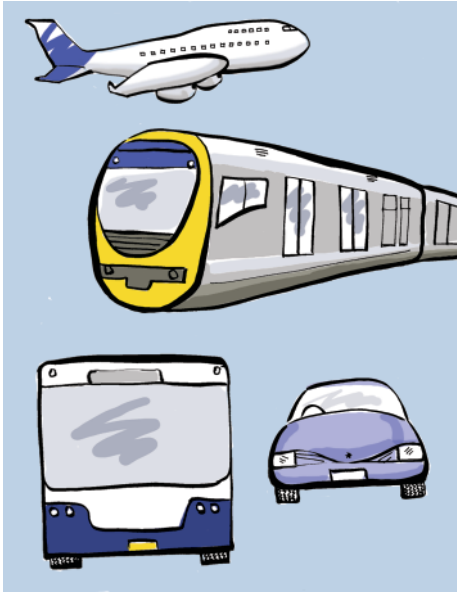
- Carry several copies of a typed, signed letter from your doctor outlining your diabetes management plan, medications, the devices you use to give medication (if applicable) and equipment needed to test your blood glucose (sugar) level. You will also need to carry scripts for all medications, clearly detailing your name, doctors contact details, and both the name and type of medication, emergency contacts and your National Diabetes Services Scheme card (see section 25)

- Always wear some form of identification that says you have diabetes

- Take a small approved sharps container for used lancets and syringes. Some airlines, hotels and airports offer a sharps disposal service

- The anticipation and stress of a trip or changes in routine may affect your blood glucose levels, so you may need to check your blood glucose level more often

- Carry a small first aid kit with you in case of minor illness or injury



- Depending on your journey and destination, you may need to consider taking an insulated travel pack for your insulin

- When visiting some countries, certain vaccinations are recommended. Information in regard to vaccinations can be obtained from your doctor

- Customs regulations vary from country to country so it is advisable to contact the embassy of the country you're visiting before travelling

- When flying, check with the airline in advance for specific security guidelines as these are subject to change

- Keep insulin, syringes/pens and testing equipment in your hand luggage. Do not place insulin in your regular luggage that will be placed in the cargo hold because it is not temperature controlled. The insulin may be damaged or lost

- Contact your airline about meal times and food available during your flight. It is also recommended that you carry your own supply of portable carbohydrates in case of unexpected meal delays or if you dislike the meal offered. If you take insulin with meals, do not administer insulin until your meal arrives

- To help prevent deep vein thrombosis, move about the cabin at regular intervals and do chair based exercises. Drink plenty of water. Your doctor may advise you to wear supportive stockings

- If you are driving long distances, make sure you stop regularly and take your blood glucose (sugar) levels before and during your trip.

Useful websites are ***www.dfat.gov.au*** and ***www.health.gov.au***

Travel insurance is highly recommended. Make sure it covers situations which may arise in relation to diabetes. The Australian Government has arrangements with some countries providing benefits similar to Medicare, if needed. Remember to take your Medicare card with you.

For more information, call Medicare Australia on 132 011

At your destination

- Differences in activity, routines, food and stress may affect your blood glucose levels

- Food options may differ from home. The priority is to maintain carbohydrate intake. If you are going to a different country, do some research before you leave to help you make appropriate choices

- Take care with food and drink choices, particularly in developing countries where food hygiene may not be optimal. Bottled water is preferable, even for brushing teeth

- Protect your skin from sun burn

- Do not go barefoot. Be careful of hot sand and pavements. Check feet daily.

24 Interpreter services

A free telephone interpreter service is available for people who may have difficulty in understanding or speaking English. This service is available through the Translating and Interpreting Service (TIS) of the Department of Immigration and Multicultural and Indigenous Affairs (DIMIA).

TIS have access to professional interpreters in almost 2000 languages and dialects and can respond immediately to most requests.

Accessing an interpreter:
1. Simply dial 131 450 for the Telephone Interpreting Service

2. Explain the purpose for the call (e.g. wanting to talk to a diabetes educator/dietitian at Diabetes Australia-NSW)

3. The operator will connect you to an interpreter in the required language and to a Diabetes Australia-NSW health professional for a three-way conversation.

25 National Diabetes Services Scheme (NDSS)

The NDSS is a Federal Government funded program, administered on behalf of the government by Diabetes Australia. It provides blood and urine testing strips, syringes and needles for special injection systems at subsidised prices to people who register for its benefits.

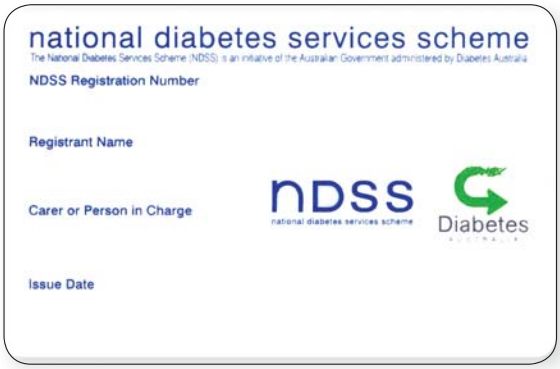
Registration is free and you are only required to register once. You do not need a doctor's prescription to make purchases.

Registering for the NDSS
Once you have been diagnosed with diabetes, your doctor or a credentialed diabetes educator can register you with the NDSS. If you are not sure whether you are registered with the NDSS, or want more information, call Diabetes Australia-NSW on 1300 136 588.

Who is eligible to register for the NDSS?
People who are resident in Australia, have been diagnosed with diabetes by a medical practitioner and hold a current Australian Medicare card or Department of Veteran Affairs file number may register.

If you are a visitor to Australia and from a country with a Reciprocal Health Care Agreement, you may be entitled to temporary registration to the NDSS.

Please call Diabetes Australia-NSW on 1300 136 588 for further information.

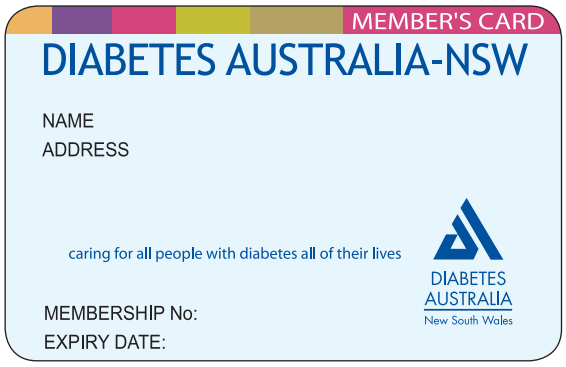


26 Diabetes Australia-NSW

Diabetes Australia-NSW is a non-profit, non-government charity dedicated to helping all people with, and at risk of, diabetes. It provides education programs, conducts public awareness campaigns, funds research into diabetes management and the search for a cure and, through advocacy, protects the rights of people with diabetes.

Our Customer Care Line (1300 136 588) has diabetes educators, dietitians and exercise physiologists available to provide personalised and practical assistance to benefit people with diabetes and their carers.

Diabetes Australia-NSW also has a network of Branches and Support Groups to provide support and encouragement for people living with diabetes.



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