



Type 1 diabetes



What
you
need
to
know



ndss
national diabetes services scheme



Diabetes
AUSTRALIA
QUEENSLAND

The National Diabetes Service Scheme (NDSS) is an initiative of the Australian Government administered by Diabetes Australia. The NDSS Agent in Queensland is Diabetes Australia – Queensland.



Contents

A guide to type 1 diabetes

Type 1 Diabetes: What You Need To Know is designed to provide the latest and most useful information for people with type 1 diabetes, their family members and carers. Whether you have just recently been diagnosed or have been managing type 1 diabetes for some time, this booklet provides facts, figures, tips and useful advice to help you live a healthier life.

Managing type 1 diabetes is not easy. It is a considerable personal challenge and may seem daunting at first. When you have mastered the early challenges of managing type 1 diabetes, there is a great ongoing benefit to be had in keeping up to date with the latest knowledge and treatments. This booklet is designed to be helpful to people facing both these challenges.

The booklet is produced by Diabetes Australia – Queensland, an organisation dedicated to providing support and education to people with diabetes. It contains resources, information and advice on how to get the best out of your health care team as well as information on a variety of topics such as exercise, living and eating well and what to do if it all goes wrong.

Coping with hypos, health emergencies, travel, driving, insulin, discrimination issues and even making decisions on when and what to eat are all part of coping with type 1 diabetes.

The better informed you are, the better prepared you will be for making the right decisions. If you have had diabetes for some time, this booklet may be a good refresher. It is also a resource you may like to share with family members and friends who want to know more.

Type 1 diabetes affects different people in different ways. A management plan is very personal and every individual has their own response and different needs to be taken into account.

Diabetes Australia – Queensland is here to guide and support you, whether you are taking your first steps, or just the latest of many steps, along the path to maximising your health potential.

If you have any queries or issues you would like to discuss after reading this booklet, ring Diabetes Australia – Queensland's call centre on 1300 136 588. You can make this call from anywhere in Queensland for the cost of a local call.

If you have direct concerns about your treatment or health, contact your diabetes health care team to discuss the problem.

Chapter 1 – Diabetes

- What is diabetes?
- Type 1 diabetes
- Other types of diabetes

Chapter 2 – Lifestyle

- Eating well
- Carbohydrates and blood glucose levels
- Adding sugar
- Let's eat out
- Exercise
- Weight management
- Alcohol
- Smoking
- Recreational drugs

Chapter 3 – Monitoring and care

- Blood glucose monitoring
- Insulin
- Insulin pumps
- Hypoglycaemia
- Emergency
- Sick days
- Complications
- Pregnancy
- Monitoring
- Your diabetes health care team

Chapter 4 – Living with diabetes

- Coping
- Driving
- Discrimination
- Insurance
- Travelling

Chapter 5 – Support

- Diabetes Australia – Queensland
- NDSS
- Medicare
- Fact sheets
- Websites



CHAPTER ONE

What is diabetes?

Diabetes is the term used to describe a common medical condition in which the body fails to process blood sugar, or glucose, in the normal way. There are three main kinds of diabetes: type 1, type 2 and gestational. This booklet is mainly about type 1 diabetes. More than 123,000 people in Australia have type 1 diabetes and more are being diagnosed all the time. Understanding the different kinds of diabetes can help you understand the symptoms and treatment available.

WHAT IS ...

Insulin - the hormone produced by the pancreas that allows glucose to enter the body's cells to be used as fuel. Insulin is like a key that unlocks the door to cells allowing glucose to enter and do its job.

Glucose - a type of sugar that comes from carbohydrates in your food.

Carbohydrates - one of the basic building blocks of food. Carbohydrates are energy rich and found in many different kinds of food and drink including those that taste sweet such as fizzy drinks, cake, pastry, chocolate, lollies, ice-cream, custard, fruit and juice. Carbohydrates are also found in food that doesn't necessarily taste sweet such as bread, cereals, legumes, milk, yoghurt and starchy vegetables such as potato, sweet potato and corn.

If you have diabetes, your body cannot make proper use of the carbohydrates broken down from food. The sugar produced from the carbohydrates builds up in the blood as glucose, when it should be inside the cells being used for energy.

The pancreas - A small organ near the stomach that normally produces insulin. When you have type 1 diabetes, the pancreas does not produce insulin, so you need to replace the hormone every day with insulin injections or via an insulin pump.

Type 1 diabetes

Type 1 diabetes is a life-long autoimmune disease that usually occurs in childhood but can occur later in life. Type 1 diabetes occurs when the immune system damages the pancreas and it no longer produces insulin. This means there is no key to let glucose into the cells so it can provide fuel for the body.

The onset of type 1 diabetes can be abrupt and the symptoms are obvious. Between 10 and 15 per cent of all cases of diabetes are diagnosed as type 1 but it is still one of the most common chronic childhood diseases and becoming more common in young adults.

CAUSES

The cause of type 1 diabetes and how to prevent it is still unknown. The most likely explanation is that the body has an abnormal reaction to the cells triggered by a virus or other infection. We do know that it's more common in people under 30.

SYMPTOMS

The symptoms of type 1 diabetes come on suddenly, so the disease is more likely to be diagnosed quickly.

The main symptoms of undiagnosed diabetes include:

- Passing urine more often than usual, especially at night

- Unquenchable thirst
- Insatiable hunger, often for sweet foods
- Extreme tiredness
- Unexplained weight loss
- Genital itching or regular episodes of thrush
- Slow healing of cuts and wounds
- Blurred vision
- Mood changes

TYPE 1.5: LATENT AUTOIMMUNE DIABETES OF ADULTHOOD

Latent Autoimmune Diabetes of Adulthood (LADA) is also called 'type 1.5'. LADA is a slow-developing form of type 1 diabetes that is sometimes mistaken for type 2 diabetes.

About 10% of adults diagnosed with type 2 diabetes may have LADA. People with LADA are not usually overweight but, as with type 1 diabetes, they may have a family history of another autoimmune disease like coeliac disease.

People with LADA usually progress on to requiring insulin fairly quickly after being diagnosed with diabetes.



Other types of diabetes

FACT SHEETS

Diabetes Australia – Queensland

www.diabetesqld.org.au
1300 136 588

Diabetes Australia – National

www.diabetesaustralia.com.au

WEBSITES

NDSS

www.ndss.com.au
1300 136 588

Queensland Health

www.health.qld.gov.au
(07) 3234 0111

Australian Indigenous HealthInfoNet

(Edith Cowan University)
www.healthinonet.ecu.edu.au/chronic-conditions/diabetes

Diabetes Australia – Multilingual Resources

<http://www.diabetesaustralia.com.au/NDSS-Content/Resources/Multilingual>

Sweet – Diabetes Transition to Adult Care Program

www.sweet.org.au

Kids Helpline

www.kidshelp.com.au
1800 551 800

Lifeline

www.lifeline.org.au
13 11 14

Royal Flying Doctor Service (RFDS)

www.flyingdoctor.org.au
(Call 000 for emergencies)

SANE

www.sane.org
1800 18 SANE (7263)

Vision Australia

www.visionaustralia.org.au
1300 847 466

TYPE 2 DIABETES

Type 2 diabetes is the more common form of the disease – 85% to 90% of all people with diabetes have type 2 diabetes. In type 2 diabetes, the body still produces some insulin, although it may not produce enough, or it may not work well enough, to keep the blood glucose levels within a healthy range.

In type 2 diabetes this is called ‘insulin resistance’. It means the insulin is not working well, so the pancreas makes more in an attempt to keep up, but eventually becomes exhausted. In the meantime, the blood glucose levels begin to rise.

Type 2 diabetes can occur at any age, but is more common among those who are overweight, carry excess kilograms around the waist and are older than 40. It is a progressive disease managed with healthy eating, exercise and medication.

The risk factors for type 2 diabetes include:

- Increasing age
- Family history of type 2 diabetes
- Excess weight or obesity
- Lack of exercise
- Diabetes during pregnancy
- Certain ethnic backgrounds – Indigenous Australians and people of Middle Eastern or Pacific Island descent

- High blood pressure and high blood cholesterol levels
- Use of some medications, such as steroids
- Polycystic ovarian syndrome

GESTATIONAL DIABETES

Diabetes occurs in 3 to 8 per cent of Australian women during pregnancy and usually goes away after the baby is born. Women continue to produce insulin normally but the hormones produced during pregnancy mean their bodies are temporarily less responsive to insulin and they cannot maintain normal blood glucose levels. This kind of diabetes may require insulin but can be managed with lifestyle changes.

Of the women who develop gestational diabetes, about 17 per cent go on to develop type 2 diabetes within 10 years, and up to 50 per cent will develop type 2 diabetes within 30 years.

Good management after pregnancy helps reduce the risk of developing type 2 diabetes later in life.

Women most at risk from gestational diabetes are overweight or obese, have a family history of diabetes, have polycystic ovarian syndrome, or have Aboriginal or Torres Strait Islander family backgrounds.



CHAPTER TWO

Lifestyle



People with diabetes are the same as everyone else when it comes to eating a healthy diet. It is important for us all to eat a balanced diet that is high in fibre, low in saturated fat and contains low glycaemic index (low GI) carbohydrates to provide the body with necessary fuel and micronutrients. There is no need for people with diabetes to have special or separate meals. If you need help deciding which foods to eat, how much to eat and how often to eat, talk to an Accredited Practising Dietitian for advice.

SOME TIPS ON HEALTHY EATING

Choose the right food. Choose a broad variety of foods from the five food groups: breads, cereals, rice, pasta, and noodles; fruit, vegetables and legumes; low-fat dairy; lean meat, fish, poultry and nuts; and, small amounts of healthy fats. The Australian Guide to Healthy Eating is a useful resource for nutritional advice.

Watch your portions. Match your energy intake with your energy output (physical activity). Eating too much, even of healthy foods, can increase insulin resistance and raise blood glucose levels.

Eat regularly throughout the day. Start your day with breakfast and don't skip meals. Depending on your insulin regimen, you may need to snack between meals – discuss this with your dietitian or diabetes educator.

Include carbohydrates at each meal. Carbohydrates are nutrients that are an important fuel source for your body. You need to match your insulin to the amount of carbohydrate you have consumed.

Eat more fibre. Fibre helps control blood glucose levels, cholesterol and weight. It also keeps the digestive system healthy. Good sources of fibre can be found in wholegrain bread, fruit, vegetables and legumes.

Try this:

- Reduce your intake of saturated fat and trans fats – these are found in whole fat dairy products, fatty meat and butter and in tropical oils such as coconut and palm oil. Replace them with healthier polyunsaturated and monounsaturated fats found in oily fish, avocado, vegetable oils, nuts and seeds
- Aim for at least two portions of oily fish a week
- Eat two serves of fruit and at least five serves of vegetables a day and include beans and lentils
- Limit salt intake and replace with herbs, spices, onion, chilli and capsicum
- Avoid or limit alcohol intake (no more than two standard drinks on any one day)

Carbohydrates and blood glucose levels

Digested carbohydrates are broken down into glucose – the body's main source of fuel. Balancing diet, exercise and insulin intake will help manage your blood glucose levels. Regular blood glucose testing will help you find the right balance.

HOW TO MANAGE BLOOD GLUCOSE LEVELS

Timing

Different types of insulin have different actions. Each type varies in when it begins to work, reaches its peak and runs out. Good diabetes management is about matching insulin intake with the carbohydrates eaten. If your carbohydrate meal plan is regular and consistent, it is easier to manage blood glucose levels.

The amount – too little or too much

If you eat more carbohydrates than usual and don't increase your physical activity or your insulin, your blood glucose level can rise too high (hyperglycaemia). If you don't eat enough carbohydrates or skip a meal, your blood glucose level can drop too low (hypoglycaemia or hypo). There is no 'one size fits all' solution: It depends on your age, body size and physical activity levels.

To work out the amount of carbohydrates you eat, you can use:

- The carbohydrate 'exchange' or 'serve' lists (one carbohydrate 'exchange' contains 15g of total carbohydrates)
- Food labels
- Carbohydrate counters

Why GI matters

The glycaemic index (GI) ranks the effect carbohydrates have on your blood glucose levels.

Healthy carbohydrate choices

*Italics = lower GI

Wholegrain/wholemeal bread/bread rolls	<i>Burgen® Breads, 9-grain Multigrain®, PerformMAX®</i>
High fibre breakfast cereals	<i>Rolled oats, All-Bran®, Guardian® or untoasted muesli</i>
Pasta, rice and grains	<i>Basmati, Moolgiri or Doongara, barley, bulgur and couscous</i>
Legumes	<i>Baked beans, kidney beans, chick peas, lentils, three bean mix</i>
Milk products or dairy alternatives	<i>Low fat milk, soy drinks (calcium fortified), custard and yoghurt</i>
Vegetables	Potatoes, <i>sweet potatoes and sweet corn</i> have high levels of carbohydrates
Fruit	Most fruit is low GI – <i>apples, oranges, pears, peaches, bananas</i> . Eating lots of watermelon and lychees can increase BGLs quickly.

Foods with a low GI raise blood glucose levels more slowly than foods with a high GI and provide a longer-lasting source of energy so you feel fuller for longer. Eating too much of any carbohydrate will still raise your blood glucose level. High GI carbohydrates increase blood glucose levels quickly, which is useful when treating a hypo, but eating low GI carbohydrates is generally recommended.

You should discuss your plan for treating a hypo with your diabetes health care team.

Sugar

A LITTLE BIT IS OK

Small amounts of sugar are OK, but high-energy foods like chocolate, cakes and lollies should be limited. Using an alternative sweetener is an option, but read the label carefully because there are two different types of sweeteners (nutritive and non-nutritive sweeteners). Foods that contain an alternative sweetener, such as sugar-free chocolate, can still be high in fat (particularly saturated fat) and should not be eaten in large amounts.

Sweetened products can add variety to a low saturated fat, high fibre eating plan. Check the effect of sweeteners on your blood glucose level by testing before eating and again two hours later. You can repeat the test to make sure the results really are due to that specific food.

Non-nutritive sweeteners

(also known as artificial or intense sweeteners). These are kilojoule-free and do not affect blood glucose levels. They include acesulphame K, alitame, aspartame and sucralose, saccharine, cyclamates and stevia.

Heat can change the taste of non-nutritive sweeteners, so add them after you have finished cooking. Splenda, Equal, Spoonful and neotame are the only ones that can be added during cooking or baking, without affecting the taste.

Low joule foods and drinks that contain non-nutritive sweeteners (soft drinks, cordials and jellies) can add variety without raising your blood glucose levels.

Nutritive sweeteners. These include fructose, sorbitol, maltodextrin and xylitol. They are not kilojoule-free, have different effects on blood glucose levels and may be labelled as 'carbohydrate modified'.



Eating out

Eating out is one of life's pleasures and you can still enjoy this experience while looking after your health.

Meals chosen should:

- Be lower in fat (especially saturated fat like butter)
- Contain breads and cereals (preferably wholegrain), vegetables (including legumes) and fruit
- Have low amounts of added sugar

INSULIN AND EATING OUT

You have less control over when your food arrives when you eat out, so to avoid hypos take your insulin as the meal arrives. Choose meals with enough carbohydrates and ask for extra bread, rice, potato, fruit or fruit juice if you need more. Alternatively, you may need to reduce your dose of insulin.

If it's a special occasion and you are having a bigger meal with more carbohydrates than usual, you may wish to increase your insulin dose before the meal. Discuss this with your diabetes health care team if you are not confident in making this decision for yourself.

Physical activity

CHECKLIST TO GET INTO ACTION

- Work out what activity you will do and how long you will do it for
- Monitor your blood glucose level before, during and after exercise
- Consider whether extra carbohydrates or a reduction in insulin is needed
- Carry your blood glucose testing kit, diabetes identification, hypo treatment and drinks
- Footwear – is it comfortable and will it protect your feet during the activity?
- Check your feet after every activity and if you develop problems, see a podiatrist
- Drink plenty of water and replace lost fluids



Exercise can help control diabetes and prevent long-term complications. Becoming more active does not mean you have to sweat it out at the gym – it can be as simple as walking for 30 minutes a day. Find something you enjoy and keep it up. Incidental activity is also a good way to keep active so vacuuming, walking up the stairs or stretching at your desk all counts.



INSULIN AND PHYSICAL ACTIVITY

Regular exercise helps make insulin more effective, so you may need a lower dose. Your diabetes health care team can advise you on changes that may need to be made to your normal regimen. Check your blood glucose level before, during, and after a training session.

You may need to increase your portions of carbohydrates, as well as reduce your insulin dose during the training period to help prevent hypos.

LISTEN TO YOUR BODY

Keeping your blood glucose level stable during exercise means you have to balance insulin and carbohydrates. Your blood glucose level will continue to drop and will trigger a hypo if you don't restock.

Blood glucose levels may rise for a short time after intense exercise. This can be due to the amount, type or duration of the activity, your blood glucose level before the exercise, food intake or the kind of treatment you are using.

Weight management

Following a long-term, balanced eating plan and adding regular physical activity into your life are great ways to manage your weight. It is important to get help from your diabetes health care team to work out the combination of treatment, eating plan and activity that best suits your needs and lifestyle.



MANAGING YOUR WEIGHT

It's not just the scales that reflect your weight – it is also the size of your waist. Health professionals recommend that men have a girth below 94cm and women below 80cm – although different ethnic groups have different recommended measurements.

You can work out your true waist measurement by finding the halfway point between your lowest rib and the top of your hip. If you find it difficult to measure yourself, ask for help.

People with a high waist measurement are more likely to have high blood pressure, high cholesterol, sleep apnoea and dementia, as well as some cancers.

Being overweight also puts pressure on joints – such as your hips, knees and back, which makes physical activity more difficult.

BODY MASS INDEX (BMI)

The best way to determine whether you are in a healthy weight range is to measure your BMI. This is calculated by dividing your body weight in kilograms by your height in metres squared.

Body Mass Index (BMI) (kg / m ²)	Weight Status
Below 18.50	Underweight
18.50 – 24.99	Normal
25 – 29.99	Overweight
30	Obese

NO QUICK FIX

If you are looking to lose weight, don't rush to follow the latest fad diet. The best way to improve your health is to make small, sustainable changes to your eating behaviour and physical activity.

If you are thinking about using meal replacement programs, talk to your doctor first. They are generally low-energy, high-protein and low-carbohydrate plans that can put stress on your body if not managed with medical supervision. Your body is already working hard to control your blood glucose, blood pressure and cholesterol so it pays to seek the right advice.

There are potential side-effects to using meal replacements, such as hypoglycaemia, and the medications you take may need adjustment.





Losing weight is all about having realistic expectations. It takes time to put weight on, so it makes sense that it will take time to take it off. Successful long-term weight loss involves making practical changes to your lifestyle. Losing 5 to 10 per cent of your body weight a year until you reach a healthy target weight is the ideal way to shed those excess kilograms and improve your health.

Start your journey to better health by eating regularly through the day – including breakfast. Don't skip meals because this slows your metabolism. To lose weight you need to use more energy (measured in kilojoules) than you consume. You may need to cut back on portion sizes and this may require a reduction in insulin dosages.

If you are looking for more tips on healthy eating, check out *The Australian Guide to Healthy Eating and the Diabetes Australia fact sheets: Do you need to lose some weight?* and *Healthy Eating Guide*.

UNDERWEIGHT

Being underweight can make it difficult to stay healthy. If you have unexplained weight loss, it could mean something is wrong.

Your dietitian can provide you with a personal treatment plan to meet your nutritional needs. The plan will include more protein, fat and energy in your diet while managing the carbohydrate

component to maintain healthy blood glucose levels.

High blood glucose levels can make it difficult for you to gain weight. In addition to modifying your food intake, your doctor may recommend a temporary or permanent change to your diabetes medication.

Some people take supplements to increase their nutritional intake.

Some supplements are unsuitable for people with diabetes, so always discuss any plan to take supplements with your dietitian or doctor. This is especially important if you have problems with kidney function or diabetes control.



PRACTICAL TIPS FOR GAINING WEIGHT

- Eat small frequent meals
- Add more mono or polyunsaturated margarine and oil to your food
- Add skim milk powder to drinks, soups and stews
- Add grated cheese to cooked foods
- Snack on small serves of crackers, cold meat, nuts and dried fruit

COMPLEMENTARY MEDICINES

Complementary medicines should complement, rather than replace conventional treatments. They include herbal, traditional, natural and

alternative preparations.

Australian standards for complementary medicines are designed for quality and safety, not effectiveness. Complementary medicines have risks and side-effects just like conventional treatments. Some may interact with each other or with prescription and over-the-counter medicines.

To minimise any risk when using either over-the-counter or complementary medicines, you need to:

- Be honest with your doctor, diabetes educator and dietitian about the medication you are taking. Don't stop taking prescription medication without first discussing it with your doctor
- Consider the cost
- Remember some can interfere with prescription medicine
- Bear in mind that these medications have possible risks and side-effects
- Speak to your pharmacist about your current medication and any possible risks associated with adding complementary medications to your diabetes management





Smoking

Giving up smoking is one of the most positive things you can do for your health. It will reduce the risk of long-term diabetes complications.

If you have diabetes, you already have an increased chance of developing heart disease or having a stroke. Smoking also increases the risk of other diabetes complications.

You may have tried a few times to give up – it can be difficult.

Plan your efforts to get the best results and get support from your doctor, pharmacist, friends and family.

Ring Quitline 13 7848 for even more help.

Instead of focusing on the dangers of smoking, here are the benefits of having a smoke-free life:



After 48 hours, the nicotine has left your body and your sense of taste and smell are dramatically improved

After eight hours, the levels of bad products in the blood such as nicotine and carbon monoxide are reduced by half and oxygen levels return to normal

Within 20 minutes of stopping, your blood pressure and pulse rate return to normal

After three to nine months, your coughs, wheezing and breathing problems will improve

After one year, the risk of a heart attack falls to around half that of a smoker

After three months, your circulation will improve and your skin will look better

Alcohol

Diabetes and drinking alcohol do not go well together but if you follow a few basic rules, there is no reason why you can't enjoy a couple of drinks.

But remember ... alcohol increases the risk of having low blood glucose (hypo) because it slows the release of glucose from the liver. The risk continues for some time after you stop drinking.



Tips: The National Health and Medical Research Council recommends that healthy men and women consume no more than two standard drinks a day and include alcohol free days to reduce the risk of harm from alcohol-related disease or injury.

- Don't drink on an empty stomach
- Avoid drinking excessively – the more you drink the greater the hypo risk
- Tell your friends you have diabetes and make sure they know what to do if you have a hypo
- Wear diabetes ID
- Carry fast-acting glucose and your blood glucose meter in case of a hypo
- Check your blood glucose before you go out and before bed
- Carry extra snacks in case you go low
- Eat before and after you go out
- You may need a carbohydrate snack during the night or before bed
- Drink plenty of water to prevent dehydration
- Think you have a hangover? Check your blood glucose level – you may be having a hypo. Treat immediately
- If you are sick or can't take food, have a sugary drink and monitor your blood glucose level regularly. You may need to follow your sick day management plan
- Never stop taking your insulin. Eat breakfast to help with blood glucose control





Recreational drugs

The most commonly used recreational drug is alcohol. Other recreational drugs are illegal and dangerous and involve a higher degree of risk to your health if you have diabetes.

KNOW THE SCORE

The effect of any drug on the body varies from person to person but young people are perhaps more likely to consider experimenting with illegal and dangerous recreational drugs.

Drug use can cause serious problems for people with diabetes.

Depressants: Also called downers, include alcohol and sleeping pills. They also include illegal drugs such as heroin, methadone and cannabis. Downers slow the body down, clouding thought processes, slowing the heart rate and breathing. Anyone who takes them will feel relaxed and be more prone to forgetting about insulin or testing.

Uppers: Also called stimulants, include illegal drugs such as speed, ecstasy and cocaine. These drugs can make a person more active and talkative than usual. When the drug wears off, it can cause depression and tiredness.

Uppers can also suppress appetite, which can cause hypos, especially if combined with dancing.

Other drugs: Hallucinogenic drugs include cannabis, LSD and magic mushrooms. Hallucinogenic drugs, also known as psychedelics, change the way a person perceives the world.

Drugs such as cannabis can cause feelings of hunger and lead to a rise in blood glucose levels. They can also cause forgetfulness - including forgetting to take insulin.

LSD and magic mushrooms can cause hallucinations, which can last up to 12 hours, affecting insulin and food intake..

STAY SAFE

- The risk associated with taking illegal drugs is extreme for people with diabetes
- Some drugs carry heavy penalties for possession or supply
- If you go clubbing, wear diabetes ID
- Tell your friends about your diabetes and how to treat a hypo
- Have carbohydrates before you go out and when you get home
- Don't mix drugs and alcohol

WEBSITES

NDSS

www.ndss.com.au
1300 136 588

Queensland Health

www.health.qld.gov.au
(07) 3234 0111

Find Your 30 Campaign (Eat Well Be Active)

www.your30.qld.gov.au

GI database

www.glycemicindex.com

Go For 2 & 5

www.gofor2and5.com.au

Health Insite (Australian Government Initiative)

www.healthinsite.gov.au/topics/Diabetes
1800 022 222

Lighten Up

www.health.qld.gov.au/lightenup
(07) 3246 3399

Measure Up Health Campaign

www.measureup.gov.au

Smart Choices – The Healthy Food and Drink Supply Strategy for Queensland Schools

<http://education.qld.gov.au/schools/healthy/food-drink-strategy.html>

FACT SHEETS

Diabetes Australia – Queensland

www.diabetesqld.org.au
1300 136 588

Diabetes Australia – National

www.diabetesaustralia.com.au





CHAPTER THREE

Monitoring and Care

As you develop strategies to help you cope with type 1 diabetes, you will find that monitoring your own blood glucose levels is a valuable tool that puts you in charge of your self-management plan. Your diabetes educator will teach you how to check your blood glucose levels and understand your targets. You will need to do a check at least four times a day and extra checks are needed if you are sick, change your activity level or are experiencing unusual symptoms.

BLOOD GLUCOSE MONITORING

Measuring and recording your blood glucose levels is important because it helps us understand how your body responds to changes in insulin levels, eating patterns, physical activity and other factors. A change in the pattern can alert you to possible problems that may need to be discussed with your diabetes health care team.

Monitoring your blood glucose levels, recording and reviewing the results will help you to:

- Become more confident managing your diabetes
- Better understand the relationship between your blood glucose levels and the amount of exercise you do, your diet and other lifestyle factors such as travel, stress and illness
- Understand how your lifestyle choices and treatment can make a real difference
- Know immediately if your blood glucose level is too high or too low, so you can make informed decisions about eating before exercise, treating a hypo or seeking medical advice if you are sick
- Know when to seek advice from your health care team about adjusting your insulin
- Improve meals or snack planning when you are not achieving your glucose targets



Insulin

Insulin is a hormone produced in the pancreas. Your body uses insulin to move glucose from the bloodstream into cells where it is used as energy. Insulin injections are required because your body is not producing insulin.

WHY INJECT INSULIN?

Insulin is a protein. It can't be given in tablet form because stomach acids destroy the proteins before the insulin can be absorbed.

TYPES OF INSULIN

There are three groups of insulin – animal, human and analogues. Human insulin is not from a living person but is produced synthetically to exactly match human insulin. Most people use human insulin and insulin analogues, although a small number of people still use animal insulin.

There are five main types of insulin:

Rapid-acting analogues

- Injected just before food
- Peak action – one to three hours
- Lasts three to five hours
- Clear in appearance

Long-acting analogues

- Injected once or twice a day to provide background insulin
- These don't have a peak action time – so no need to take with food
- Lasts up to 24 hours
- Clear in appearance

Short-acting insulin

- Injected up to 30 minutes before a meal
- Peak action – two to four hours
- Lasts up to eight hours
- Clear in appearance

Intermediate-acting insulin

- Taken once or twice a day
- Peak action – four to 12 hours
- Lasts up to 24 hours
- Cloudy in appearance – must be mixed before each injection

Mixed insulin

- Combination of intermediate and/or rapid-acting insulin or short acting insulin
- Taken once, twice or sometimes three times a day
- Peak action – one to 12 hours
- Lasts up to 24 hours
- Cloudy in appearance – must be mixed before injecting

INSULIN INJECTIONS

The needles used to inject insulin are very small because insulin only needs to be injected under the skin. Once it has been injected, it is carried into the bloodstream.

The three main areas for injecting insulin are the stomach, buttocks and thighs. Your diabetes health care team can help you decide which is the best for you. It is important to rotate injection sites, as injecting into the same site can cause a build-up of lumps under the skin, affecting absorption of insulin and control of blood glucose levels.

The first time you inject can be frightening, but as your confidence grows it becomes easier. If you are worried about your technique you should talk to your diabetes health care team. Insulin injection is not painful if performed properly – pain is a sign of poor technique.

STORING INSULIN

All insulin needs to be kept below 30°C out of the fridge and ideally between 2 and 6°C in the fridge. Store insulin you are using in a cool, dry place and away from direct light. Your supply of insulin should be stored in the fridge until needed.

Don't place insulin in, or close to, the freezer compartment. Keep at least one vial or cartridge of each type of your insulin in the fridge as a spare. Insulin can be safely carried in your handbag or pocket.

Don't use insulin if:

- Clear insulin has turned cloudy or changed colour
- The expiry date has been reached
- Insulin has been frozen or exposed to high temperatures
- Lumps or flakes can be seen
- The vial has been opened for more than 28 days



DISPOSAL OF SHARPS

Dispose of syringes and needles in an approved sharps container, which must be kept out of the reach of children. These containers are available from your pharmacist or Diabetes Australia – Queensland.

When full, sharps containers must be properly disposed of through your local council. Do not dispose of sharps in anything other than an approved sharps container.

Never share needles, syringes, pens, insulin cartridges or bottles because of the risk of contamination and infection.

Insulin pumps

WHAT DOES AN INSULIN PUMP DO?

An insulin pump is a small, computerised device worn outside the body – it looks a little like a pager. The pump works like a healthy pancreas delivering tiny, regular doses of insulin via a flexible canula that is inserted under the skin. The canula is changed every three days.

IS IT FOR ME?

Insulin pumps are not for everyone.

HOW DOES IT WORK?

An insulin pump is programmed to give a small dose of insulin continuously over 24 hours, depending on the individual's needs. An extra dose of insulin is programmed when meals are eaten, or when blood glucose levels are too high.

An insulin pump contains only rapid-acting insulin. No long-acting insulin is used.

NEW SKILLS

You will have to learn new skills when you first start using a pump – there are a few adjustments to make. Dosing is different on a pump, as the amounts of insulin are often lower than you used previously. Understanding carbohydrates and adjusting your insulin doses for different meals gives you more flexibility, but you will have to work at becoming familiar with the new program. You will need support from your diabetes health care team to make the most of an insulin pump.

HOW LONG DO YOU WEAR IT?

The insulin pump must be worn all the time, but can be removed for short periods when showering, swimming

or playing contact sports. It must not be removed for longer than two hours. Insulin pumps are becoming more commonly used.

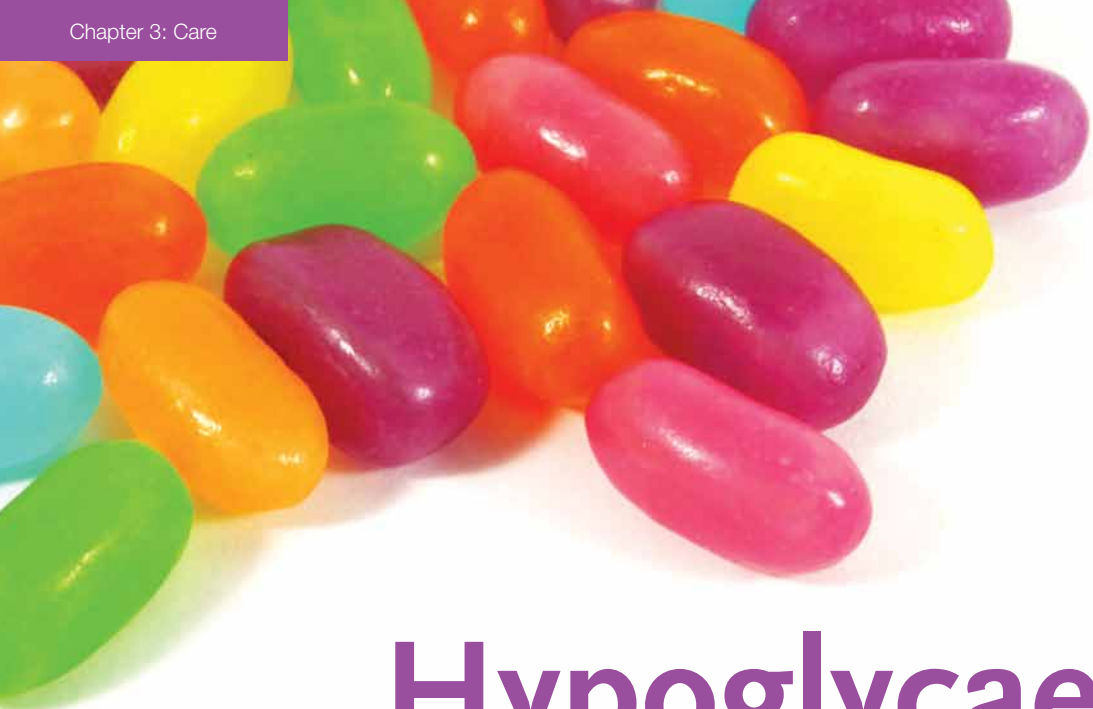
YOU MAY CONSIDER A PUMP IF YOU ARE:

- Monitoring carbohydrate intake closely
- Ready to learn lots of new information
- Able to use simple menus such as those on a mobile phone or computer
- Given the go-ahead from your diabetes specialist

AN INSULIN PUMP MAY BE FOR YOU IF YOU:

- » Have recurrent hypoglycaemic episodes or have lost the ability to sense a hypo
- Want increased flexibility for insulin dosing
- Are a shift-worker or change your insulin doses often
- Have unpredictable blood glucose levels
- Have rising blood glucose levels overnight
- Are planning to start a family and want better control before you fall pregnant
- Are in a private health insurance scheme
- Are under 18 years – you can apply for a government subsidy

To learn more about pumps see the Diabetes Australia - Queensland booklet *"I'm considering an insulin pump"*.



Hypoglycaemia

Hypoglycaemia is commonly referred to as 'a hypo'. Generally it occurs when your blood glucose level drops below 4mmol/L, although this can vary. It is important to treat a hypo quickly to stop the blood glucose levels from falling even lower.

WHAT CAUSES HYPOS:

- Delaying or missing a meal
- Not eating enough carbohydrates for a given dose of insulin
- Unplanned physical activity
- More strenuous exercise than usual
- Drinking alcohol

WHAT ARE THE SYMPTOMS:

- Weakness, trembling or shaking
- Sweating
- Light headedness/headache
- Lack of concentration
- Behaviour change
- Dizziness
- Tearfulness/crying
- Irritability
- Numbness around the lips/fingers
- Hunger

If you feel any of these symptoms, check your blood glucose level. If you are unable to do so, treat as a hypo anyway, just to be sure. The first thing to do is make sure you're safe.

Step 1

Have about 15g of quick-acting glucose IMMEDIATELY, such as:

- Six to seven glucose jellybeans OR
- 100ml sweet soft drink, not 'diet' OR
- Three teaspoons sugar or honey OR
- 125 to 200ml of fruit juice OR
- 100ml of Lucozade

If you can, re-check your blood glucose level after 15 minutes to make sure it has risen above 4mmol/L. If the symptoms don't go away or if you are still below 4mmol/L, REPEAT Step 1

IMPORTANT: If after repeating Step 1, your blood glucose level still does not rise above 4mmol/L, get help immediately. Your blood glucose level could continue to drop and you could become unconscious.

Step 2

If your next meal is more than 20 minutes away, you will need to eat about 15g of long-acting carbohydrates. This could be one of the following:

- A slice of bread OR
- A glass of low fat milk or soy milk OR
- A piece of fruit OR
- Two to three pieces of dried apricots, figs or other dried fruit OR
- 200ml tub natural low-fat yoghurt OR
- Six small dry biscuits and cheese

WHAT HAPPENS IF A HYPO IS NOT TREATED?

If not treated quickly, your blood glucose level can continue to drop which may progress to:

- Loss of co-ordination
- Slurred speech
- Confusion
- Loss of consciousness/fitting





Emergency

What to do if someone with type 1 diabetes becomes drowsy, unconscious or unable to swallow:

- Don't give any food or drink
- Place them on their side, make sure their airway is clear
- Phone for an ambulance (dial 000) stating a 'diabetes emergency'
- Give an injection of glucagon if available and you are trained to do so
- Wait with the person until the ambulance arrives
- When conscious, they'll require carbohydrates to maintain their blood glucose levels

GLUCAGON

Glucagon is a hormone that raises the blood glucose levels and is injected in a similar way to insulin.

Using it is recommended to treat severe life-threatening hypoglycaemia. There may be times when you can't treat your own severe hypo, so it is important to show your family and friends how to use your emergency glucagon.

Hypos can occur while you are asleep. The hypo may wake you up, or you may wake later feeling tired, with a headache or hangover sensation. If you are concerned about overnight hypos, check your blood glucose between two am and three am when hypos are most likely to occur. Keep something sugary beside your bed just in case. You may like to check your blood glucose level before bed and if concerned, have a snack before bedtime such as biscuits and milk, half a sandwich, fruit or yoghurt.

HYPOGLYCAEMIA UNAWARENESS

Some people feel no symptoms of a hypo, or experience symptoms only when the blood glucose level drops very low. This problem is more likely to occur in someone who has had diabetes for a number of years or in people who have hypos frequently. If you have hypoglycaemia unawareness you must check your blood glucose level more frequently and you should discuss the situation with a specialist or diabetes educator.

WHAT ELSE SHOULD I DO?

- Wear diabetes identification alert
- Note any hypos you have
- Make sure your family, friends and co-workers know how to recognise and treat a hypo
- Look for the cause of your hypo so you can try to prevent the situation from reoccurring
- Contact your doctor or diabetes educator if you are having hypos often
- Always carry rapid-acting hypo treatment with you
- Eat carbohydrates if you are drinking alcohol
- Before driving a motor vehicle, test your blood glucose level, make sure it is above 5mmol/L
- You will eventually recognise your own hypo warning signs

Sick days



Hyperglycaemia (high blood glucose levels) is when the blood glucose is higher than the desirable range – usually above 15mmol/L. Most people with diabetes have a short-term rise in blood glucose readings that lasts a few hours but falls back to the target range.

Reasons for high blood glucose readings:

- Eating extra carbohydrates
- Not enough insulin or the dose may be too low, or may have been forgotten
- Less exercise than usual
- Can be temporary during or just after vigorous exercise (adrenaline effect)
- Measuring the blood glucose too soon after a meal – wait two hours after eating
- Emotion, such as excitement or stress
- Infection or other illness
- Inaccurate blood glucose levels – clean hands, check expiry date on strips, retest

If your blood glucose level is usually well controlled, an occasional higher reading is nothing to worry about. However if your readings continue to rise, or are higher than they should be over a period of time, your treatment may need to be reviewed. Illness or infections generally cause blood glucose levels to rise – take action at the first sign of illness.

Have a Sick Day Plan in place. Discuss what you will do with your diabetes health care team.

SICK DAY PLAN

When to start: Start even if you feel OK but there are ketones in your blood/urine or your blood glucose level is greater than 15mmol/L for two consecutive readings within a 2-6 hour time frame.

Important steps:

1. Always take your insulin – even when you are unwell. Seek advice from your diabetes health care team if you are told to stop. It is rare for doses to be reduced – you may need more, not less.

2. Test your blood glucose levels – every two hours at first. If your blood glucose level is more than 15mmol/L over two consecutive tests and you have ketones, you need extra insulin – contact your doctor.
3. Test for ketones regularly – use either ketone urine test strips or a meter, which allows blood ketones to be checked. Test strips are available from a pharmacy or through NDSS.
4. Rest – have a friend or relative stay with you or check on you frequently. Exercise with caution if your blood glucose level is above 15mmol/L.
5. Keep drinking and (if possible) eating – eat or drink carbohydrate-containing foods/fluids if your blood glucose level is under 15mmol/L. Eat or drink non-carbohydrate foods if 15mmol/L or above.

WHEN DO I GET MEDICAL HELP?

There are certain times during illness when your diabetes health care professional will need to increase your insulin dose.

Contact your doctor or diabetes educator if:

- You can't keep food or fluids down and have persistent vomiting, diarrhoea and/or abdominal pain
- Urine ketones are moderate/heavy and blood glucose is over 15mmol/L
- Blood ketones are more than 0.6mmol/L and blood glucose is over 15mmol/L

You should contact the hospital or medical centre immediately when:

- You have deep rapid breathing or breathlessness
- You are extremely drowsy
- You have a 'fruity' odour to your breath
- You are unable to keep fluids down

(See *ketoacidosis following*.)

WHAT ARE KETONES?

When there is too little insulin in the body, glucose can't enter cells to provide energy, so the body begins to break down fat and muscle as an alternative source of energy.

This process causes ketones to be produced. Ketones also need insulin to enter the cells and when there is insufficient insulin the ketones build up in the blood and are eventually passed through the kidneys and into the urine. While large quantities of ketones can be serious, small amounts are not harmful and can also be found in people who do not have diabetes.

WHAT IS KETOACIDOSIS?

Ketoacidosis is a life-threatening condition that can occur when you are ill or have a very high blood glucose level resulting from a lack of insulin. The presence of large amounts of ketones in the blood or urine is called ketoacidosis.

Signs of ketoacidosis include:

- Nausea, vomiting and/or abdominal pain
- Deep rapid breathing or breathlessness
- Extreme drowsiness
- A 'fruity' odour to the breath

The most likely time for developing ketoacidosis is when a person is unwell or has an illness due to infection. During periods of illness, even if you are not eating, you still need insulin. It is important to continue taking your insulin and to do more frequent blood glucose testing.

Ketones are easily detected by a simple urine test or blood test with certain meters. You should test for ketones if your blood glucose is high (usually over 15mmol/L) or if you have any symptoms of ketoacidosis.

If you discover a high level of ketones and especially if your blood glucose level is high, you should call your doctor immediately, or go to your nearest emergency department.



Complications

High blood glucose levels can cause serious damage to your body over time but there are things you can do to reduce your risk of developing them. If blood glucose, cholesterol and blood pressure levels are kept within the normal range, the risk of damage to your body is reduced.

Reducing complications from diabetes

- Have well-managed diabetes
- Keep your blood glucose, blood pressure and cholesterol at target levels
- Regularly test your blood glucose levels
- Remember to see your doctor for all your recommended screening tests
- Take all prescribed treatments
- Don't smoke. Call Quitline 13 7848
- Be physically active for at least 30 minutes five times a week
- Follow a healthy eating plan
- Limit your alcohol intake
- Lose excess weight
- Look after your feet and choose footwear that protects your feet

COMMON COMPLICATIONS

Damage to the large blood vessels

Heart attacks and stroke: Having diabetes increases your risk of developing these problems. People with diabetes may have raised cholesterol and blood pressure. A family history of heart disease or stroke, smoking and being physically inactive increases your risk.

Damage to the small blood vessels

Retinopathy: Damage to the retinas at the back of your eyes, if left unchecked, can cause blindness. Have your eyes examined regularly by a qualified optometrist or eye specialist. If you experience a sudden loss of vision, seek advice from an optometrist immediately.

Nephropathy: High blood glucose levels can damage your kidneys over time, especially if you have high blood pressure. Keeping your blood glucose and blood pressure under control will help reduce your risk of kidney damage. Have an annual urine microalbumin test to check for evidence of kidney damage.

Peripheral vascular disease:

Damage to the blood vessels in the feet means their blood supply is limited. This can cause delayed healing from blisters or sores. If sores are not properly cared for, they can develop into ulcers and become infected. In very serious cases, surgery may be necessary and amputation may be required.

Neuropathy: Neuropathy is nerve damage caused by high blood glucose levels. Nerve damage can lead to pain and loss of feeling to the hands and feet, called peripheral neuropathy. It commonly affects the nerves in feet but any nerves can be involved including those that control internal organs.

Symptoms include:

- Tingling
- Numbness
- Burning or pain at rest

Avoid foot problems

- Keep your blood glucose level well controlled
- Stop smoking
- Wash feet every day with lukewarm water and mild soap

- Dry feet well, especially between the toes. Use a soft towel and pat gently
- Keep the skin smooth with creams, especially on the heels but not between the toes. If the skin is cracked, seek help to treat
- Keep feet dry – dust with non-medicated powder before putting on footwear
- Check feet daily – at the first sign of redness, swelling, lasting pain, numbness or tingling, seek medical advice
- Use a mirror if you cannot easily reach or see your feet
- Don't treat calluses, corns or bunions by yourself
- Cut toenails straight across to avoid ingrown nails and use a nail file to remove sharp edges. Soak your toenails in warm water to soften before you cut them
- Don't let your feet get too hot or too cold
- Don't go barefoot
- Cover small cuts with a mild antiseptic and dressing

TEETH AND GUM CARE

High blood glucose levels can cause tooth decay and gum infection, which can increase your risk of heart disease. Signs to watch out for include a dry mouth, burning tongue, red, sore, swollen or bleeding gums and white film on your gums or on the inside of your cheeks or tongue.

Make sure your dentist knows you have diabetes and visit regularly.

If you have a dry mouth, drink water rather than sugar-filled drinks. Sugarless gum can help increase saliva production.



SEX AND DIABETES

Sex is an important part of relationships. Sex can be an energetic exercise, which means there is a chance of having a hypo either during or after sex.

Make sure you have fast-acting glucose on hand. You may also want to tell your partner what to expect if you have a hypo. This could be the time to tell them a bit more about diabetes as well.

In the longer term, problems while having sex are more common in people with diabetes.

SEXUAL COMPLICATIONS

Erectile dysfunction (ED)

ED or impotence is the inability to achieve or maintain an erection for sexual intercourse. It is one of the most common sexual problems experienced by men.

The main causes are tiredness, stress, emotion, alcohol, smoking, recreational drugs, diabetes, certain medication, surgery and other illnesses.

There is a wide range of treatments for ED including sex therapy, medication (oral, injection and urethral suppository) and vacuum therapy. Less commonly, surgery may be required.

When starting treatment for erection problems it is vital that your diabetes and any other linked conditions such as heart disease are well controlled. Having diabetes does not mean you will go on to develop ED, but it is important to be aware of it in case you experience problems.

Female sexual dysfunction (FSD)

FSD can be caused by physical, emotional and lifestyle factors, medication and diabetes-related complications.

Women experiencing FSD may have problems with desire, arousal, pain during intercourse and achieving orgasm.

Currently there is no medical treatment for FSD, but research is ongoing. Treatments in the form of therapy and aids for lubrication and clitoral stimulation are available.

PREGNANCY

Having a family is a big decision, especially if you are a woman who has diabetes because there are more factors to take into account. Your diabetes health care team can guide you through your planning and your pregnancy. Make sure you talk to them BEFORE getting pregnant.

Many women who have diabetes go on to have healthy pregnancies and healthy babies. You can increase your chances of delivering a healthy baby by keeping your blood glucose levels well controlled before conception and during pregnancy. It is important to have folic acid before falling pregnant.

The first eight weeks are important:

- Persistently high blood glucose levels increase the risk of abnormal development to the baby and complications for the mother. Your doctor can measure your longer-term blood glucose levels using the HbA1c test. The risks increase if this result goes above 7 per cent (*See page 23, for more information.*)
- Hypos can cause miscarriage early in the pregnancy. Ideal control is recommended and preparation for pregnancy should be discussed with your diabetes health care team
- Have your eyes checked before you fall pregnant as pregnancy can place extra pressure on the small vessels in your eyes. If you have advanced retinopathy that has not been treated, make sure it is treated before you become pregnant

Your main goals:

- » Check your blood glucose levels more regularly – discuss with your health care team
- » Follow diet and exercise guidelines, stop smoking and reduce or stop drinking alcohol
- » Contact your diabetes health care team if you have problems with nausea and vomiting
- » Continue taking folic acid
- » Test your urine or blood for ketones
- » Have a glucagon kit and make sure someone in the household or nearby knows how to use it
- » Attend all antenatal clinic appointments

On target

Being actively involved in the management of your diabetes means you need to know what tests you should have on a regular basis with your health care team. These tests will help determine how your health is tracking.

HBA1c TESTING

This blood test reflects your average blood glucose reading for an eight to 12-week period. You should have this test at least once a year, but you can have the test as frequently as every three to six months. It provides a snapshot of your diabetes management.

Your HbA1c value should be 7 per cent or less (this can vary according to individual circumstances). The aim is to get it as low as possible without causing hypos. At this level, complications are minimised and the risk of hypos is low.

For each 1 per cent reduction in the HbA1c value there is a 20 to 40 per cent reduction in the risk of complications.

If your HbA1c is elevated, you may need to increase your physical activity, lose weight or adjust your insulin, but talk to your diabetes health care team before doing this.

BLOOD PRESSURE MONITORING

Checking your blood pressure and treating elevated levels reduces your risk of blood vessel damage and kidney disease.

Check at least twice a year. Generally your blood pressure should be 130/80mmHg. Physical activity, weight loss, stopping smoking and some medication can help lower blood pressure if it's too high.

LIPIDS (BLOOD FAT LEVELS)

These need to be monitored annually because diabetes, when combined with high lipid levels, place you at higher risk of heart attack and stroke.



There are two types of cholesterol – HDL (the good cholesterol that protects against heart disease) and LDL (the bad cholesterol which can damage your heart).

Triglycerides are another kind of blood fat that increases the risk of heart disease. Triglycerides should be less than 1.5 mmol/L.

Generally your HDL should be greater than 1.0 mmol/L and your LDL should be less than 2.5 mmol/L. These levels are achievable through regular physical activity, weight loss, a healthy diet low in saturated fats and by taking cholesterol-lowering medication.

URINE MICROALBUMIN

This test detects evidence of kidney disease. You should have this test at least once a year. Achieving target levels for your HbA1c and blood pressure will help prevent and treat kidney problems. Your doctor may prescribe medication if needed.

EYE EXAMINATION

Diabetes puts people at increased risk of developing cataracts, glaucoma and diabetic retinopathy – a leading cause of blindness.

An eye exam every two years, or more frequently, can identify complications early. Keeping your HbA1c level on target, controlling blood pressure and being a non-smoker can prevent vision loss.

FOOT EXAMINATION

Check at least every 6 months for changes in sensation, decreased circulation and infection.

ANNUAL CYCLE OF CARE (MINIMUM REQUIREMENTS)

Every six months:

- Blood pressure
- Weight
- Body mass index
- Waist circumference
- Foot care

Every year:

- HbA1c
- Total cholesterol, LDL cholesterol and triglycerides
- Kidney check (urine microalbumin test)
- Medication review
- Smoking status
- Healthy eating plan
- Physical activity
- Self care education

At least every two years:

- Eye examination (more frequently if evidence of disease)

Please note that the recommendations for children and adolescents with type 1 diabetes may vary from those listed. Discuss this with your health professionals.

Your diabetes health care team

This is the team you can turn to when you need advice, tests or medical treatment. You should be honest with your health care team members, so they can help you get the best out of your management plan.

General Practitioner – Remains your primary carer and works in with other members of the team.

Endocrinologist/Diabetologist – A specialist in treating diabetes and similar conditions. Will help you develop your best diabetes management plan, including dealing with any diabetes-related complications.

Diabetes Educator – Usually a Registered Nurse or Dietitian, with a special interest in diabetes. A Credentialed Diabetes Educator will have completed a university course and practical training in helping people with diabetes.

Ophthalmologist/Optometrist – Specialists in eye disease. They will detect the impact of diabetes on your eyes before it affects your vision. They may take scans of your retina to make comparisons and track any changes.

Podiatrist – University-trained health professional who assesses and provides treatment for foot problems. He/she will teach you how to care for your feet and about the importance of suitable footwear, as well as providing general information about how diabetes affects your feet.

Dietitian – An expert in understanding diet who will provide nutrition and dietary advice and can help you plan your eating to maximise your control of diabetes.

Counsellor/Psychologist – A professional trained to help others understand their emotions and potential in life. Being able to talk to someone about living with diabetes can help you keep a healthy balance in life and identify problem areas.

Dentist – Dental and periodontal problems are common in people with diabetes. Make sure your dentist knows you have diabetes and pay regular visits.

Exercise professional – Can help you increase your physical activity levels. If you have not been physically active for a while, your doctor may refer you to an exercise professional who can tailor an individual fitness program for you.

Aboriginal health worker – Can join your team to provide you with culturally appropriate information. He/she may provide health care for individuals, families and community groups and may assist you gain access to the health services you need from hospitals and clinics.

WEBSITES

NDSS

www.ndss.com.au
1300 136 588

Queensland Health

www.health.qld.gov.au
(07) 3234 0111

10,000 steps

www.10000steps.org.au

Diabetes Counselling Online

www.diabetescounselling.com.au

Diabetes Kids and Teens – Diabetes Australia NSW

www.diabeteskidsandteens.com.au

Juvenile Diabetes Research Foundation (JDRF)

www.jdrf.org.au
(07) 3831 0544

myD – My diabetes for under 25s

www.ndss.com.au/myD





CHAPTER FOUR

Living with diabetes

Coping with diabetes

Being diagnosed with a lifelong chronic condition can be difficult to accept. People often feel shocked, angry, afraid, anxious and depressed. There may be unexpected challenges for people with type 1 diabetes in obtaining a driver's licence, accessing insurance and making safe travel arrangements. Use your health care team to help yourself become more confident managing diabetes in your life. Getting the right information can help you come to terms with the diagnosis.



EMOTIONAL WELLBEING

Your ability to cope with your diagnosis will impact on your overall health. We can't tell you how you'll feel, but we do know that everyone reacts differently. Having diabetes means there will be different stages in your health journey that you will have to manage – school, education, relationships, your working and family life.

Coping strategies

- Don't isolate yourself
- Don't be hard on yourself
- Have fun
- Talk to your diabetes health care team and let them know how you are going
- Set small and specific goals
- Confide in someone – talk to your family and friends so they know how you feel
- Tell people how you feel if they ask

It is important to take ownership of your care – self-management is the key to coping with diabetes. For further information please contact www.diabetescounselling.com.au

LET PEOPLE KNOW

Tell the people in your life that you have diabetes. Give them a chance to support you and make them aware of how diabetes impacts on your life.

If you live alone, tell your neighbours you have diabetes. If you live with others, tell your housemates. Let the transport authorities know, because having diabetes can affect your licence. An ID bracelet is a good idea – if you have a hypo, people know how to help you.

Telling your workmates may help them understand why you need to stop for a blood test or to treat hypos. There is no legal requirement to tell your employer that you have diabetes, but it may help them understand your treatment and management plans.

Transition to adulthood

Research shows that between 30 and 40 percent of young people with type 1 diabetes do not receive specialist care when they move from the paediatric to adult health systems.

Leaving the parental home requires extra preparation and planning if you have type 1 diabetes. Start preparing for the transition of your care before you move out. Get to know your diabetes health care team, how to contact them and how to manage your condition.



As long as your diabetes is well controlled and your doctor can confirm this, there's no reason why you shouldn't be issued with a licence. You must tell the road transport authority and insurance company you have diabetes.

Before driving, make sure you:

- Discuss licensing medical standards with your doctor
- Understand the regulations that affect you
- Check if any conditions need to be placed on your driver's licence
- If required, get a medical certificate for the purpose of licensing
- Notify Queensland Transport you have diabetes and give them your medical certificate
- Carry ID that says you have diabetes
- Carry quick-acting carbohydrates (glucose tablets), and long-acting carbohydrates (muesli bar/apple) and your blood glucose meter
- Check your blood glucose levels before driving and after every two hours when driving
- Keep your complications screening up to date, especially for blood pressure, eyes and feet
- See your diabetes health care team regularly

If your blood glucose level goes low while driving:

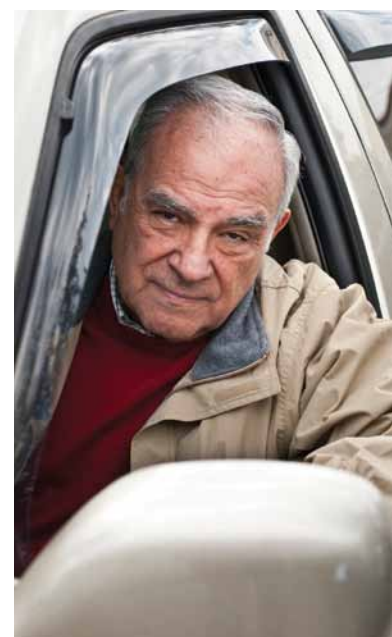
- STOP driving as soon as it is safe to do so
- Turn off the engine and throw keys in the back
- Check your blood glucose level
- If less than 4mmol/L IMMEDIATELY take glucose tablets, a sugary drink or jelly beans
- Wait 10-15 minutes and check levels again. Treat again if required
- Follow up with a long-acting carbohydrate
- DO NOT resume driving for 30 minutes or until after levels are above 5mmol/L
- Even if you have a mild hypoglycaemic episode, talk to your doctor about driving
- If you experience a 'defined' hypoglycaemic episode (severe impairment to physical or mental abilities or a decrease in consciousness) do not drive, and see your doctor immediately
- You may not be allowed to drive for up to six weeks after a 'defined' hypoglycaemic episode
- Notify Queensland Transport if an episode is associated with a car accident

You should not drive if you have:

- Difficulty recognising the early signs of hypoglycaemia
- Just started to take insulin and your blood glucose levels are not yet controlled
- Problems with your eyesight not corrected with glasses
- Numbness or weakness in your limbs
- Been feeling unwell – this can upset blood glucose levels

For further details:

<http://www.transport.qld.gov.au>





Discrimination

The Equal Employment Opportunity Commission categorises diabetes as a disability. The definition of disability includes past, present or future physical, intellectual or psychiatric disability, learning disorders, or any organism capable of causing disease.

It is against the law for employers to discriminate against people with diabetes or to treat them unfairly. You have the right to apply for and be fairly considered for jobs, apprenticeships and traineeships on the basis of merit.

You have the right to be trained, promoted and receive all other work benefits. You must expect to follow all other work rules fairly in the same way as other employees. You have the right not to be harassed about your disability. An employer can dismiss you, medically retire you, or make you redundant only if your diabetes stops you from doing your job and there are no other more suitable roles available for you.

Insurance

Buying the right insurance policy can give you financial protection and peace of mind if something unexpected happens. Most insurance policies exclude pre-existing medical conditions such as diabetes because although diabetes can be treated, people with diabetes are more likely to develop medical complications, such as blindness, nerve damage and kidney problems.

It is essential when arranging a policy that you fully inform the insurance company about your diabetes even if they do not ask. If you don't, you might find your claim is rejected.

- Ask your insurance adviser if their products are available for people with diabetes
- Make full disclosures of your medical conditions when taking out your policy
- Allow yourself plenty of time to investigate your options and read the small print

- Apply for cover well in advance of when you need it to be in place. This will avoid a lot of last-minute frustration and inconvenience, especially if the insurance is needed with a mortgage.

Don't just buy on price; make sure you buy the cover you need.



Travelling

Having diabetes should not stop you travelling, but you do have to plan ahead and follow the advice of your diabetes health care team so you can enjoy a safe trip.

Aside from the everyday things you need to do to manage your condition, there are a few extra considerations for when you travel:

- Carry extra insulin, test strips and needles in case of loss or emergency
- Check the condition of your insulin especially if the colour and consistency change. If you're going for a long time, you may not be able to take enough insulin for the entire trip. Talk to your diabetes health care team about alternatives
- Take a spare blood glucose meter – foreign glucose meters may not register in mmol/L
- Carry plenty of hypo remedies
- Take an insulated cooler bag or flask for your insulin
- Before travelling, get a letter from your doctor outlining your medical condition, the medication you take and the devices you use. The letter should explain why you need to carry sharps (needles, syringes or finger pricking devices)
- If using an insulin pump, take extra batteries, consumables, your manual, a list of your pump settings and prescriptions for long and short acting insulin
- Contact the pump manufacturer to find out what resources are available at your travel destination
- Take spare insulin pens or syringes as backup
- Make sure accident and health insurance will cover you for diabetes and the places you are planning to visit. Australia has arrangements with a range of countries which provide benefits similar to Medicare, but only for acute or emergency care. Contact Medicare Australia on 132011 or www.medicareaustralia.gov.au for more information
- If you do require treatment while travelling, seek medical assistance and advice from your insurers. Most of the costs can be recovered through health benefits and your insurance when you return.



FLYING

Carry all your medication, insulin, glucagon, delivery devices and testing equipment in your carry-on luggage, preferably split between two of your bags in case one goes missing.

Pack a separate small bag with the bare minimum of insulin, injection devices, testing equipment and hypo treatments needed for the flight. If taking a long flight, pack enough for the first leg and refill it before each new leg.

Wear some form of medical identification that says you have diabetes.

AT THE AIRPORT

Most airlines have medical clearance guidelines and have specific requirements when it comes to carrying sharps.

You will need:

- **Documentation** from a qualified medical practitioner – there is no minimum validity date required for this letter, so no regular letter updates are needed

- **National Diabetes Services Scheme** card – issued by Diabetes Australia, which confirms the passenger has been diagnosed with diabetes
- **Prescription** – containing your name, the name of the medication or supplier and name of the patient, the name of the medication or supplier and completed contact information for the medical practitioner. The prescription cannot be older than 12 months from date of issue
- **Labelled medication** – medication containers should have a pharmacist's label clearly identifying the contents and the passenger's name. Empty syringes can only be carried in hand luggage if accompanied by medication for use onboard

The x-ray machine should not damage your insulin but if you are concerned, ask airport security to physically check you and your baggage. In Australia, security staff members are obliged to respond to such requests under Department of Transport and Regional Services regulations.

If you use an insulin pump you are not required to remove it at a security point. If this is requested, you have the right to request access to a private consultation room, which security is obliged to provide. You can also request this room if discussion about your condition is required by security staff.

DURING THE FLIGHT

During your flight, there are a number of things you can do to ensure you have an enjoyable journey:

- Insulin pumps do not affect the aircraft's electronic systems.
- You can tell the flight attendant at the start of the trip you have diabetes
- Keep your immediate diabetes supplies where you can reach them, perhaps in the seat pocket in front of you but not under the seat or in the overhead locker
- Always wait until your meal is in front of you before administering insulin.

For added safety, you can take your insulin halfway through, or immediately after your meal, in case there is an unforeseen interruption

- Avoid alcohol
- Drink water to avoid dehydration
- Sleep whenever possible and ask the cabin crew to wake you for meals
- Wear comfortable shoes and exercise your feet to help prevent swelling
- Move around the cabin as often as you can – this will assist with circulation to avoid deep vein thrombosis and keep your blood glucose levels under control. If you're unable to walk around then regularly move your feet and legs in your seat

WHEN YOU ARRIVE

Changes in time zones can mean changes in insulin dosing while you are away. You will need a plan from your health care team to deal with these changes.

Keep a spare clock or watch on home time to help keep track of the timing of your long-acting insulin.

WHILE YOU ARE AWAY

- Check your blood glucose levels more often on your holidays
- Increased activity and strange foods will have an effect on blood glucose levels
- Discuss these things with your diabetes health care team before you leave and make a plan so you know what to do



WEBSITES

NDSS

www.ndss.com.au
1300 136 588

Queensland Health

www.health.qld.gov.au
(07) 3234 0111

Lighten Up

www.health.qld.gov.au/lightenup
(07) 3246 3399

Smart Choices – The Healthy Food and Drink Supply Strategy for Queensland Schools

<http://education.qld.gov.au/schools/healthy/food-drink-strategy.html>

TravelSmart Program

www.transport.qld.gov.au

10,000 steps

www.10000steps.org.au

Diabetes Counselling Online

www.diabetescounselling.com.au

Diabetes Kids and Teens – Diabetes Australia NSW

www.diabeteskidsandteens.com.au

Juvenile Diabetes Research Foundation (JDRF)

www.jdrf.org.au
(07) 3831 0544

myD – My diabetes for under 25s

www.ndss.com.au/myD

Type 1 Diabetes Network Inc.

<http://www.d1.org.au>

Sweet – Diabetes Transition to Adult Care Program

www.sweet.org.au

Kids Helpline

www.kidshelp.com.au
1800 551 800

Lifeline

www.lifeline.org.au
13 11 14



CHAPTER FIVE

Support

Diabetes Australia – Queensland is the state’s leading organisation for diabetes support, providing counselling, advice and services. Our organisation is dedicated to improving the lives of people with diabetes.

Diabetes Australia – Queensland supports more than 50,000 members and health professionals.

Members receive access to our professional health care team, expert counselling, information services, support groups, legal advice and discount products. We have a total of 60 staff including qualified diabetes educators, exercise physiologists, dietitians, and counsellors who work to help our members.

NATIONAL DIABETES SERVICES SCHEME (NDSS)

The NDSS in Queensland is managed by Diabetes Australia – Queensland. NDSS pharmacies are the place to go for lower prices on all your diabetes supplies. The scheme provides diabetes products at a discount and offers information and support services.

Registration is open to Australians with diabetes, is free and lasts a lifetime. For NDSS information, please call 1300 136 588 or go to www.ndss.com.au.

Call Centre – 1300 136 588.

The Diabetes Australia – Queensland call centre takes nearly 50,000 calls a year from people wanting information about and support for diabetes. The centre takes inquiries about NDSS and Diabetes Australia – Queensland membership and provides general advice on managing and preventing diabetes.

Anyone can use the service for the cost of a local call. The centre is open weekdays from 8:30am to 4:45pm.

However, the call centre is not an emergency service and refers to local medical emergency services when necessary.

Support groups are really important in the lives of many people with diabetes. Doctors and other health professionals often recommend them to patients and families dealing with diabetes.

Research has shown that most people attend a support group to meet others with the same diagnosis, to gain more information about their condition, to learn coping and management skills and to build friendships.

Contact Diabetes Australia – Queensland on 1300 136 588 for information on support groups near you.

Medicare

Under Medicare you are entitled to rebates on the cost of developing a care plan with your doctor, called a GP Management Plan. If you have complex needs, your GP may also develop a Team Care Arrangement to help manage your diabetes. The management plan helps you connect with other health care professionals in the diabetes team.

GP VISITS

There are a number of services provided by your GP that can be claimed under Medicare. These are aimed at improving your diabetes management and include regular assessments. Ask your GP for more information about these services.

Here is some information on current Medicare entitlements for people with diabetes:

ALLIED HEALTH SERVICES

A total of five individual visits a year to allied health professionals

The five visits can be provided by a single allied health professional or shared across any of these professionals:

- Aboriginal health workers
- Audiologists
- Chiropractors/Osteopaths
- Diabetes educators/dietitians
- Exercise physiologists
- Mental health workers
- Occupational therapists
- Physiotherapists
- Podiatrists
- Speech pathologists



to your care – it is a plan of action in which you agree on management goals with your GP. You may also need Team Care Arrangements that enable your GP to collaborate with at least two other care providers involved in your treatment.

ONE ASSESSMENT SERVICE PER YEAR

Your GP can refer you to a diabetes educator, dietitian, or exercise physiologist for an assessment. They will take your medical history, work out your individual goals and prepare you for group services programs.

EIGHT GROUP SERVICES PER CALENDAR YEAR

Group service sessions are run by diabetes educators, dietitians and exercise physiologists. The sessions can cover topics such as blood glucose monitoring, food labels, recipe modification, exercise strategies, health care concerns and strategies for maintaining change in your life.

To be eligible for these rebates, you must have a GP Management Plan. This provides a structured approach

PSYCHOLOGY

You can claim for up to 12 visits a year to an accredited psychologist under a GP Mental Health Care Plan – talk to your GP about this. In exceptional circumstances you may be entitled to further visits to a psychologist.

DENTAL CARE

Under the Medicare Dental Initiative, people with diabetes who are on a GP Management Plan are entitled to claim a variety of dental services up to a maximum of \$4,250 every two years. This does not include dental care provided through public services or in hospital.

You need a referral from your GP to access these services. Not all dentists are registered for this scheme, so check with your dentist before making any claims.



HOME MEDICATION REVIEW

Another useful service for people with diabetes, especially those taking a number of medications. Trained pharmacists carry out home visits and check all your prescription and complementary medications. They will identify any out-of-date stock, duplicate drugs, drug interactions and discuss any concerns you may have in relation to your condition or medications. The pharmacist can also check the device you use for taking your blood glucose level and make sure you are using it correctly.

This is available once a year.



ABORIGINAL HEALTH SERVICES

Comprehensive diabetes care is available under Medicare for Aboriginal and Torres Strait Islander people.

For more information contact Medicare on 132011 or www.medicareaustralia.gov.au

FACT SHEETS

Diabetes Australia – Queensland

www.diabetesqld.org.au
1300 136 588

Diabetes Australia – National
www.diabetesaustralia.com.au

WEBSITES

NDSS

www.ndss.com.au
1300 136 588

Queensland Health

www.health.qld.gov.au
(07) 3234 0111

Department of Health & Ageing

www.health.gov.au
1800 020 103

Medicare Australia

www.medicareaustralia.gov.au
13 20 11 (local call)

Department of Veterans Affairs

www.dva.gov.au
1300 551 918 (QLD)

Australian Indigenous HealthInfoNet

(Edith Cowan University)
www.healthinonet.ecu.edu.au/chronic-conditions/diabetes

Diabetes Australia – Multilingual Resources

<http://www.diabetesaustralia.com.au/NDSS-Content/Resources/Multilingual>

Find Your 30 Campaign (Eat Well Be Active)

www.your30.qld.gov.au

GI database

www.glycemicindex.com

Go For 2 & 5

www.gofor2and5.com.au

Health Insite (Australian Government Initiative)

www.healthinsite.gov.au/topics/Diabetes
1800 022 222

Lighten Up

www.health.qld.gov.au/lightenup
(07) 3246 3399

Measure Up Health Campaign

www.measureup.gov.au

Smart Choices – The Healthy Food and Drink Supply Strategy for Queensland Schools

<http://education.qld.gov.au/schools/healthy/food-drink-strategy.html>

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Sweet – Diabetes Transition to Adult Care Program

www.sweet.org.au

Kids Helpline

www.kidshelp.com.au
1800 551 800

Lifeline

www.lifeline.org.au
13 11 14

Royal Flying Doctor Service (RFDS)

www.flyingdoctor.org.au
(Call 000 for emergencies)

SANE

www.sane.org
1800 18 SANE (7263)

Vision Australia

www.visionaustralia.org.au
1300 847 466



Diabetes Australia – Queensland
GPO Box 9824 Brisbane QLD 4001
T 1300 136 588
F 07 3506 0909
E info@diabetesqld.org.au
www.diabetesqld.org.au

Our supporter

This guide to type 1 diabetes is proudly supported by Novo Nordisk

Novo Nordisk is a focused health care company and a world leader in diabetes care. Founded 85 years ago, we have pioneered many therapeutic breakthroughs in diabetes care.

Our strong commitment to changing diabetes is reflected in our focus on research and development, our partnerships with professional and consumer organisations and our commitment to communities in the developing world through the World Diabetes Foundation.

Novo Nordisk is committed to fighting this growing epidemic and to drive change for people affected by diabetes with the ultimate aim of finding a cure.

