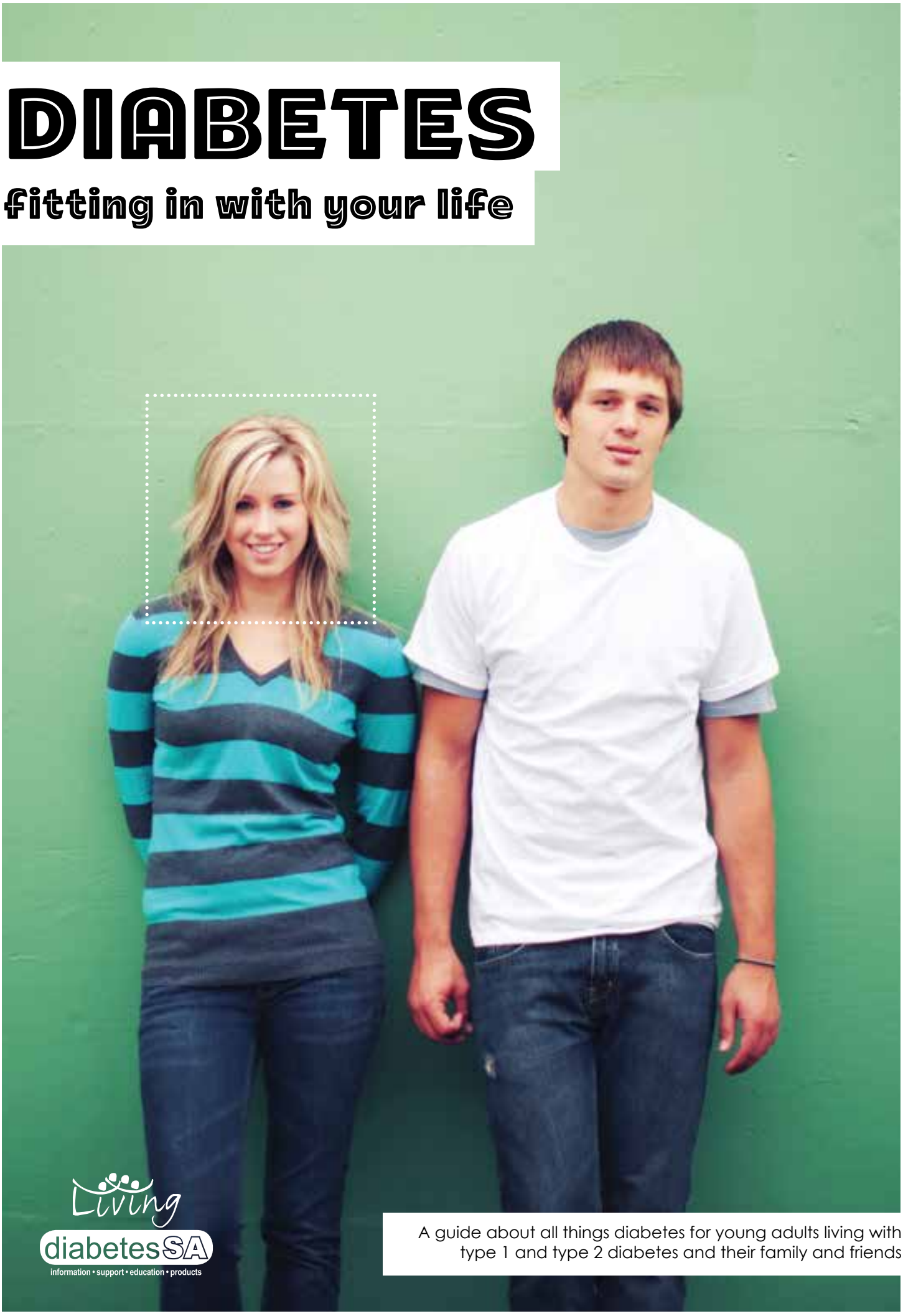
DIABETES

fitting in with your life



Living

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A guide about all things diabetes for young adults living with type 1 and type 2 diabetes and their family and friends

'Diabetes: fitting in with your life'

has been developed by Diabetes SA for all young adults (older teens and people in their twenties) living with diabetes.

Our health professionals identified a need for information after conducting workshops and interviews with younger people transitioning into adult care.

We hope the information contained within this resource helps young adults (and their families) to live a fulfilling and healthy life with diabetes.

We would like to acknowledge all people living with diabetes who have generously shared their stories and experiences, and who also gave their time in receiving the various drafts of this publication.
Our heartfelt thanks to you.

Thank you to our dedicated Credentialled Diabetes Educator Kerryn Boogaard, who worked tirelessly on developing this resource. Her passion and commitment are to be commended; and also to Kimberley Zerk, Diabetes Nurse Educator who assisted in the review of the document.

Fiona Benton
General Manager, Diabetes SA

ndss
national diabetes services scheme

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Reference: K, Boogard, F, Benton & K Zerk, 2016. Diabetes: fitting in with your life. 1st ed. Adelaide: Diabetes SA. Design: Julie Hill.

CONTENTS

WELCOME TO YOUR COMPLETE GUIDE TO FITTING DIABETES IN WITH YOUR LIFE!

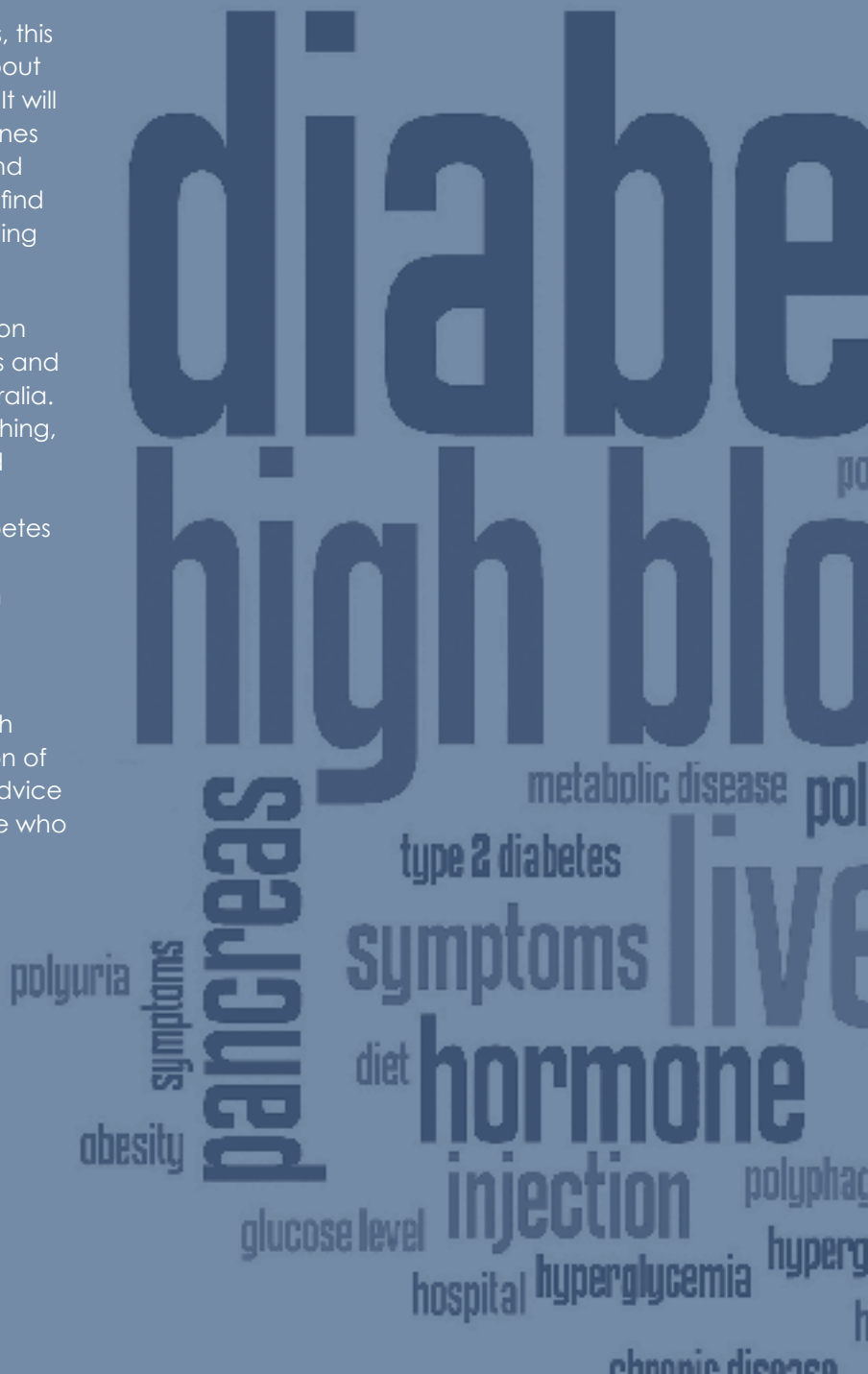
Whether you have had diabetes for years and are starting to become more independent, or you are a young adult newly diagnosed with diabetes, this guide aims to help you.

Diabetes is a world driven by routine and many targets and tests, all affected by everyday factors such as stress, excitement, hormones, activity levels, food, work, travel and routine changes. This makes even the resilient person overwhelmed! We know that managing diabetes everyday can also lead to anxiety and lowered motivation to manage diabetes day-to-day – this is completely understandable.

Because of the complex nature of diabetes, this guide aims to help you learn (or relearn) about diabetes and its day-to-day management. It will help you be prepared for important milestones and daily life such as travel, work, driving and pregnancy and most importantly, help you find the best possible support to live a long, fulfilling and healthy life with diabetes.

The topics covered in this guide are based on interviews and discussions with young adults and teenagers living with diabetes in South Australia. You may use part of this book or the entire thing, depending on your existing knowledge and experience. This guide is also perfect for family and friends of people living with diabetes to learn more about management and the many considerations for a person living with type 1 or 2 diabetes.

This has been an important collaboration between Diabetes SA and people living with diabetes and therefore provides a collection of personal stories, helpful hints, professional advice and national guidelines. We thank everyone who has contributed to this guide.



"I think it's just important to take everything in life and see it from a positive angle, and truly let the lemons the universe provides me with, never go to waste."

Mary-Anne, aged 21,
type 1 diabetes for 3 years

1/ONE

GETTING STARTED

FITTING A NEW DIAGNOSIS IN WITH YOUR ADULT LIFE

Being diagnosed with diabetes as an adult can be very challenging. You may already have responsibilities including work, study or family, which all generally come with a regular routine. A diagnosis of diabetes can disrupt any routine and potentially make you rethink future plans. The good news is, that people living with diabetes can do just about anything they set in their sights, however a little more planning and a new routine will likely need to be put in place.

This resource will cover various topics to help you deal with diabetes on a day-to-day basis and assist you with your future plans, including:

- Basic day-to-day management, including hypoglycaemia, hyperglycaemia management and sick day management.
- Healthy eating and carbohydrate foods.
- Managing diabetes and exercise.
- Being prepared for travel.
- Managing study and diabetes.
- Considerations for driving.
- How to manage diabetes in the workplace.
- Contraception and pregnancy.
- How alcohol, smoking and drugs affect your diabetes and how to manage these situations.
- Learn about what tests you require, when and how often to help prevent complications.
- How diabetes may affect your emotional wellbeing and managing diabetes related distress and burnout.

Along with fitting diabetes into your every day life, you may be wondering what health care is available and what may suit you best. Some things to think about include:

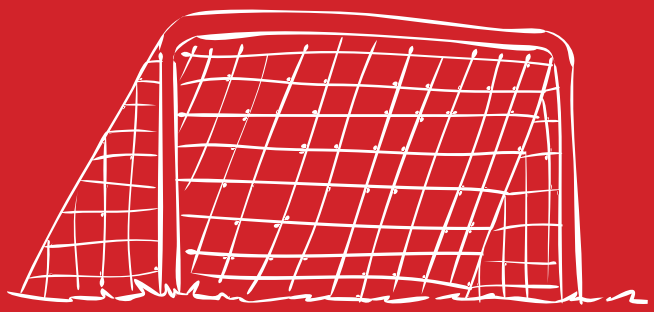
- Finding the right diabetes team for you.
- Would you prefer private or public health care? What are the differences?
- Locating an endocrinologist or diabetes service convenient for you.

"Someone once said, 'when life gives you lemons, – well you know the rest. Unfortunately, diabetes, like many other conditions, can place a temporary halt on those it personally touches, meaning that although life may give us lemons, how and when we can use them to achieve our goals, may need to be embarked upon by a different route. These varied routes, however, have proven to never compromise the actual achievements many people, including those living with diabetes, make everyday to fulfill their goals."

Mary-Anne, aged 21,
type 1 diabetes for 3 years

TONY

PERSONAL STORY



Tony was diagnosed with type 1 diabetes in his thirties. This meant that he had to consider a new routine and fit diabetes into his already active lifestyle. Read more...

Being diagnosed with type 1 diabetes as an adult

After having played semi–professional football (soccer) for close to 20 years (and I was still training at the time), I had dismissed my symptoms of diabetes and thought that it may have been due to my training load. However my wife and family were concerned as I had lost approximately 10 kilos during this time.

When I went to my GP and explained to him how I was feeling and the symptoms I had, he knew that I had type 1 diabetes. When he told me this, I went silent and nearly cried.

Questioning plans for the future

After being diagnosed, I started to wonder about the future. What will happen with my football career? Could I have kids? What happens if it gets worse? A lot of doubt and questions needed to be answered. After discussing this with my support team (including my family), GP and dietitian, all of the doubt and questions were answered.

Fitting diabetes in

My daily routine had to change. What to eat, when to eat, what to eat before training etc. With the help of my dietitian, GP and diabetes educator at the hospital, we were able to develop a plan. This plan needed to be updated several times in order to find a balance, however it is still in place and working to this day.

After having lived with diabetes for several years now, it is now my normal routine. I still exercise, eat the right food, control my blood glucose levels (BGLs) and have regular check-ups.

Staying healthy and positive

I was never going to let diabetes change my life, in what I do or how I move on. Thinking positively was the only way that I was going to enjoy a normal and healthy life. Positive life choices are paramount to ensure a healthy future.

Being able to travel and drive, knowing that my blood glucose levels are in control, gives me satisfaction in knowing that I have my health under control, all thanks to the help of my diabetes team.

Tony, aged 35, type 1 diabetes for 4 years

MOVING ON FROM PAEDIATRIC TO ADULT CARE

This next piece of information is targeted at those of you who were diagnosed with diabetes as a child or teen and are now looking at transitioning to life as an independent adult.

You may have heard the word transition from time to time and not really understood what it meant. To put it simply, transition means change.

If you are a teenager, your parents and doctors may start talking to you about moving from your paediatric diabetes clinic. Your main focus however, may be on your transition from school to university, the workforce or moving out of home. All of these times of transition are important and are covered in this resource.

This section will outline what it means to transition to adult care, how you may prepare for this and how you can find the right diabetes team for you.

What is transition?

Transition means a physical change of health care to an adult diabetes clinic and becoming more independent with your own diabetes management. There is no doubt that these are huge changes to your life, especially if you have been attending the same paediatric diabetes clinic for quite some time. Unfortunately, for some people, a lack of preparation during this transition time leads to them "dropping out" of the healthcare system.

Attempting to manage diabetes without the support of a healthcare team can increase the stress of managing diabetes and increase the risk of developing long term complications.

"My endocrinologist retired when I was about 14, so I was seeing lots of different doctors. I decided to move to the adult private sector early to ensure continuity of my care – I felt this was important for me."

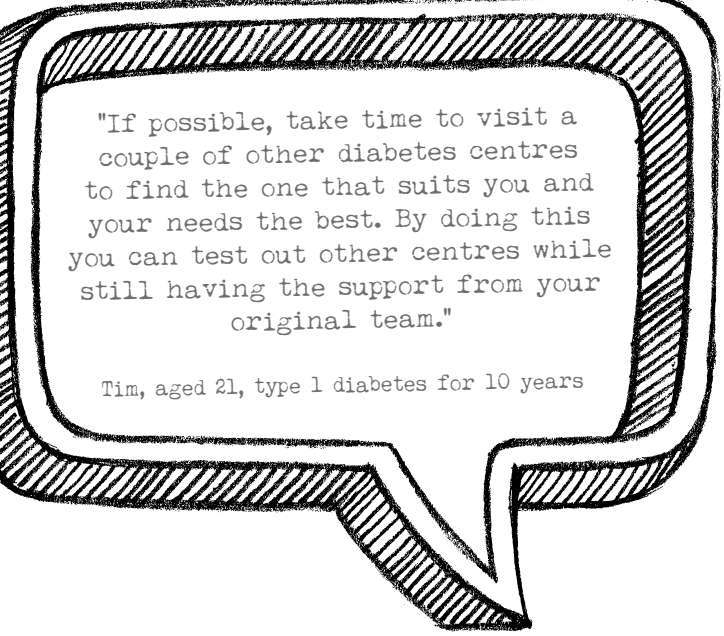
Nicole, aged 28, type 1 diabetes for 19 years

When to transition to adult care

There is no 'set' or 'right' time to transition to adult diabetes care. The right time for you may depend on when you leave school or how long you have had diabetes for. For example, you may transition to adult care when have completed year 12 or earlier if you enter the workforce at a younger age. You may have had diabetes since you were a young child and feel ready to transition earlier than a person who was diagnosed when they were a teenager.

"I turned 18 mid way through year 12 at school. I was aware that my transition time had arrived, but I wasn't ready for it. While studying in your last year at school, the last thing you need is for your health team to change from a group of people who know you and you can trust, to a group of new people. Thankfully my paediatric team saw it the same way as I did. I was strongly encouraged to stay in their care until I had finished year 12, which gave me one less thing to worry about."

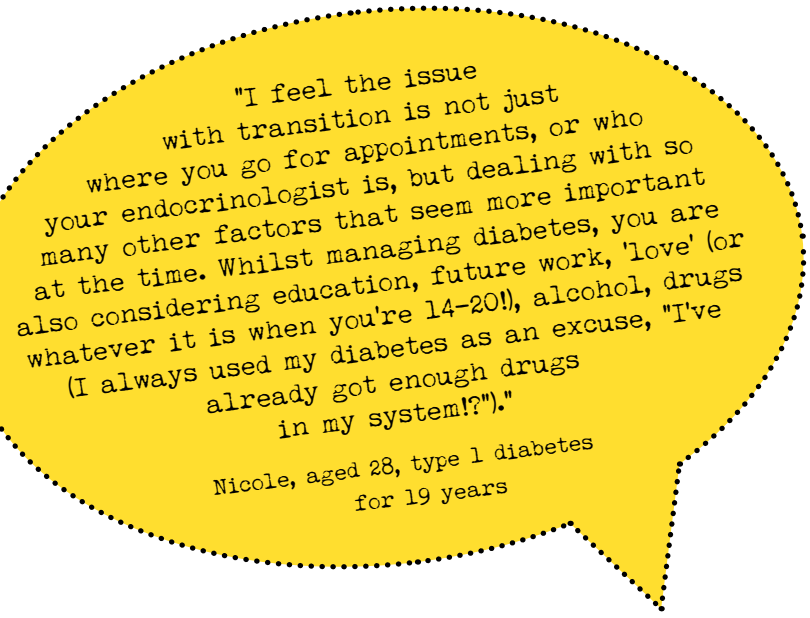
Tim , aged 21, type 1 diabetes for 10 years



Preparing for transition

Your paediatric diabetes team may start talking to you about what might suit you in the future. Some things to think about include:

- Finding the right diabetes team for you.
- Would you prefer private or public health care? What are the differences?
- Locating an endocrinologist or diabetes service convenient for you.



What to expect from adult care

The adult healthcare system can be very different to what you are (or were) used to, with one obvious difference being the ages of the people in the waiting rooms. Your new endocrinologist will also treat you like an adult and will expect that you can do many things independently. This can be very different to how you were treated in the paediatric setting. Some things that may be different include:

- You will be expected to make your own appointments and remember to attend them.
- You will be expected to know about your diabetes management and be able to talk to the doctor about this.
- You will be expected to know if you require a prescription for insulin or any other medications.
- Your family may not be included in the appointment; however you can still take someone along for support.
- You may have people of varying ages waiting in the waiting room with you.

To make these appointments easier:

- Have a list of questions or concerns about your diabetes management before you go.
- If you do not understand anything, you have the right to have it explained to you so you do understand.
- Ask for copies of your medical tests so that you know what is happening with your health. There are smart phone applications available that can help you track your test results.

This is a lot to think about especially when you are a young adult and going through so much change in everyday life. Remember that there are always people around to help you when you are not sure about something.

"I have found
that paediatric care is very
different to adult diabetes care.
At the paediatric hospital I knew almost
everyone in the department and they knew me. It
was a very welcoming environment to be in. When I
transitioned to adult care I was originally shocked
by such a different environment. Instead of knowing
the whole team of people in the department,
I only knew three; my diabetes educator,
dietitian and doctor. "

Tim, aged 21,
type 1 diabetes for 10 years

Becoming more independent

If you were diagnosed with diabetes as a child, your parents were most likely educated about diabetes and have helped you with your management. Unfortunately your parents can't look after your diabetes forever and there will be a time when you have to start thinking about becoming more independent.

Your paediatric team may start to discuss important aspects of your diabetes without your parents in the room. This will help to prepare you for adult care. This is also a good time to check your own diabetes knowledge and skills. Some things to think about include:

- Basic day to day management, including hypoglycaemia and hyperglycaemia management.
- Sick day management.
- Healthy eating and carbohydrate foods.
- Managing diabetes and exercise.
- Being prepared for travel.
- Managing study and diabetes.
- Considerations for driving.
- How to manage diabetes in the workplace.
- Contraception and pregnancy.
- How alcohol, smoking and drugs affect your diabetes and how to manage these situations.
- Learn about what tests you require, when and how often to help prevent complications.
- How diabetes may affect your emotional wellbeing and managing diabetes related distress and burnout.

Transition and beyond

Once you have left your paediatric diabetes clinic this doesn't mean you can never contact them again. Your old team will be available to help answer any questions or put you on the right track if your transition hasn't been as smooth as you had hoped. It is important to remember that if you are not happy with your new endocrinologist or diabetes team you don't have to give up altogether you can just locate another service.

My name is Georgina Leske, I am 15 years old and I have been living with diabetes for 5 years now. Within that time I have attended 2 Kids Camps and 2 Teen Camps including this year's. I first went on camp when I was 10.

I was terrified as I knew no one and had no idea what to expect, but as I soon found out, it doesn't matter because everyone is in the same boat and the activities you do make sure no one is left behind.

This year on the camp at Woodhouse we did many great activities, including laser skirmish, the giant swing, challenge hill, a sports themed disco and some down time doing crafts. All of these activities were great fun and kept us using heaps of energy all weekend – which was great in our minds because the more energy we used the more lemonade we scored! The friends that I have made on the previous camps and on this one, I have kept great contact with and I know the friendship will last a life time. Although we only see each other a couple times a year it doesn't matter because everyone gets each other. Everyone knows exactly how you feel in areas that no one else will ever understand and just being able to talk about that with them has given me a great sense of security and confidence in the way I manage my diabetes.

Each year I go home from camp with the knowledge that I am managing my diabetes well and it also gives me goals to aim for to keep improving. I look forward to the camp every year and I am never let down. When I am no longer able to go I will be very disappointed but I will know that other teens are going to have the same amazing experiences as me which will help them so much with their diabetes but also to have a great weekend with great friends.

A DIABETES TEAM – YOUR CO-PILOTS

A diabetes team can help you to make decisions about your diabetes management just like a co-pilot assists a pilot when flying a plane. Some of the co-pilots include the endocrinologist (number one co-pilot), diabetes educator, dietitian, podiatrist, dentist, ophthalmologist and exercise physiologist. The co-pilots can help you with the day-to-day and long-term management of your diabetes meaning you do not have to fly it alone.

Finding the right diabetes team for you – it's ok to shop around

Just like anything, it's ok to shop around for the right endocrinologist and diabetes team. You need a team that you like and that you can trust and feel comfortable with to help you make decisions about your diabetes management.

Your doctors should be respectful, encouraging and involve you in making decisions about YOUR diabetes management.

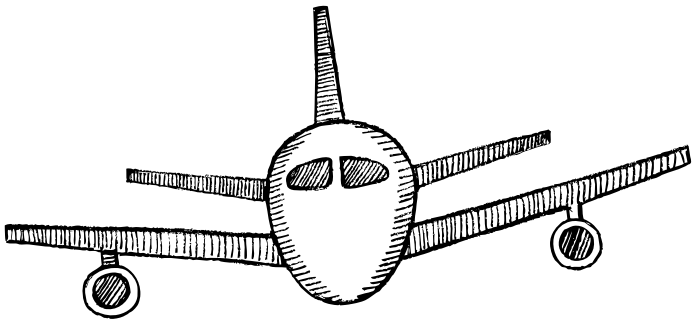
"My personal belief on finding an adult endocrinologist is to go with one that you feel comfortable with. I started to see a private endocrinologist who always wanted me to have the same dose of insulin regardless of food or exercise. I was working shift work and found this to be very unhelpful. After a year of worsening control, I did my research, found out about insulin pumps and managed to get a referral to a new private endocrinologist. I clicked with him straight away and am able to speak openly and honestly with him. I believe that there is no point saying that you are monitoring and that all of your levels are perfect and you never drink or eat rubbish when it is not true."

"It is not necessarily easy to change endocrinologists in the public system, however there are always options."

Nicole, aged 28,
type 1 diabetes for 19 years

Don't just 'drop out'

If you are not happy with your endocrinologist or diabetes services don't just 'drop out' of the system as this can make it very difficult to manage your diabetes long-term. Locate another endocrinologist or diabetes service.



"When I was first diagnosed with type 1 diabetes my daily routine had to change. What to eat, when to eat, what to eat before training etc, but with the help of my dietitian, GP and diabetes educator at the hospital, we were able to develop a plan. This plan has needed to be updated several times in order to find a balance, but is still in place and working to this day."

Tony, aged 35, type 1 diabetes for 4 years

MEMBERS OF THE DIABETES TEAM

You are the most important person in your diabetes team

Endocrinologist

An endocrinologist is a doctor who specialises in conditions associated with the endocrine system, which includes diabetes. Although your GP has knowledge regarding diabetes management, an endocrinologist (like a specialist in any other area) has the most current information, management guidelines and educational programs that can help you successfully manage your condition.

It is recommended that you see an endocrinologist at regular intervals to help with your overall diabetes management. Not only is it important to find an endocrinologist who you like and can trust but one who is located near where you live, study or work so that your appointments are as convenient as possible.

Visit your endocrinologist every 6 months or more frequently as needed.

For a list of private endocrinologists and public endocrinology services in SA visit: www.diabetessa.com.au

General Practitioner (GP)

It is important that you have a regular GP that you trust and can talk to. Your GP is a very important member of your team to help you focus on your overall health. They can also organise referrals to other specialist and allied health professionals such as a dietitian or diabetes educator. Regular visits to your GP are important to help you monitor your HbA1c, cholesterol levels, triglyceride levels, blood pressure and kidney function. **See page 83** for other important health checks.

Visit your Doctor every 6 months or more frequently as needed.

Credentialled Diabetes Educator (CDE)

A CDE can provide up to date education around many aspects of diabetes management. This may include blood glucose monitoring, managing sick days, administering insulin, physical activity, diet and foot care. CDE's often work closely with the endocrinologist and GP to help you make management decisions.

A CDE may have a professional background of the following:

- Registered Medical Practitioner.
- Registered Pharmacists who are also accredited by either the Australian Association of Consultant Pharmacy or the Society of Hospital Pharmacists Australia to conduct medication management reviews.
- Podiatrist.
- Accredited Exercise Physiologist.
- Registered Nurse.
- Accredited Practising Dietitian.

Visit your Credentialled Diabetes Educator every 6 months or more frequently as needed.

A CDE can be found at your diabetes centre/clinic, various GP clinics or in various private locations. To find out more about CDE's and to find a private CDE in your area visit: www.adea.com.au

Accredited Practising Dietitian (APD)

An APD can provide education around healthy eating and help you to understand all foods and how they impact on blood glucose levels. They can make specific recommendations around food choices that take into account your food preferences, cultural background, any intolerances, lifestyle and other conditions such as coeliac disease.

Visit your APD every 6 months or more frequently as needed.

An APD can be found at your diabetes centre/clinic, various GP clinics or in various private locations. To find a private APD in your area see:

www.daa.asn.au/for-the-public/find-an-apd/

Psychologist or mental health worker

Diabetes can impact on your emotional wellbeing, therefore a psychologist or mental health worker can provide support for you and your family to help you deal with day-to-day and long term management of diabetes.

Visit your psychologist/mental health worker every 6 months or more frequently as needed.

For more information visit The Australian Psychological Society website www.psychology.org.au

Pharmacist

The management of diabetes usually involves a combination of healthy eating, regular exercise and medication (oral and/or injectable). Whilst all diabetes medications assist with the management of blood glucose levels, they do not all work the same way. Therefore, it is important for anyone with diabetes who is taking medication to understand how these medications work, the side-effects, contraindications and other considerations when taking medication. Your local pharmacist can help you to understand all of these things.

Visit your pharmacist every 6 months or more frequently as needed.

Optometrist or Ophthalmologist

Optometrists perform eye and vision examinations, prescribe glasses and contact lenses and treat minor eye disorders with medication such as eye drops. An optometrist will diagnose and manage diabetes related eye complications. If changes are detected this will be reported to your GP and if necessary you will be referred to an ophthalmologist. An eye exam should be carried out at least every 2 years (or more often as indicated by your doctor or eye care professional) this will include a dilated retinal exam. Eye drops are administered to dilate the pupils so the doctor can better see the back of the eye.

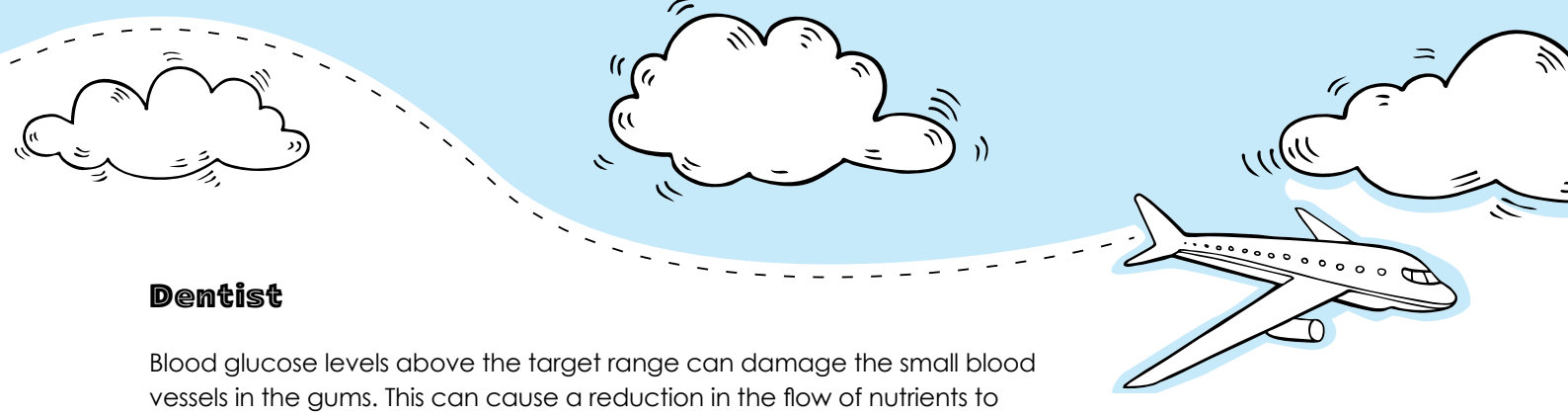
Visit your optometrist or opthalmologist every 12 months or more frequently as advised.

To find your nearest optometrist visit www.optometrists.asn.au

Ophthalmologists are eye surgeons and medical eye specialists who treat eye disease with medications and/or surgery. An ophthalmologist will be involved if specialised medical care is required, such as laser surgery or other specialist procedures to improve vision or to prevent loss of vision. Ophthalmologists are accessed using a referral from your GP, Optometrist, or other health professional.

For more information about ophthalmologists visit: www.ranzco.edu

For more information on accessing some of the health professionals as part



Dentist

Blood glucose levels above the target range can damage the small blood vessels in the gums. This can cause a reduction in the flow of nutrients to your gums, and delay the removal of waste products. This reduced response can increase the risk of periodontal or gum disease.

Visit your dentist every 6 months or more frequently as needed.

For further information visit the Australian Dental Association website: www.ada.org.au

Podiatrist

Podiatrists can diagnose and treat problems with the feet and lower legs. Because people with diabetes are at an increased risk of lower leg/foot problems, it is suggested that you see a podiatrist at least once a year and more often if you have any ongoing problems. Yearly foot checks are essential to monitor mobility, sensitivity, circulation and reflexes and provide foot care education.

Visit your podiatrist every 6 months or more frequently as needed.

To find a podiatrist in your local area visit: www.findapodiatrist.org

Accredited Exercise Physiologist (AEP)

An AEP can establish a suitable exercise program considering a person's medical condition, injuries and any other personal requirements. AEPs are university qualified allied health professionals that follow medically based research and best practice guidelines.

Visit your exercise physiologist every 6 months or more frequently as needed.

To find an AEP near you visit: www.essa.org.au

Physiotherapist

Diabetes can affect the range of movement in the body's joints. A person may also require therapy after a complication such as foot or cardiac surgery. Physiotherapists may be able to assist you with increasing your range of movement or mobility.

Visit your physiotherapist every 6 months or more frequently as needed.

For more information on physiotherapy visit the Australian Physiotherapy Association website: www.physiotherapy.asn

Aboriginal Health Worker

Aboriginal/Torres Strait Islander health workers provide clinical and primary health care for individuals, families and community groups. They deal with patients, clients and visitors to hospitals and health clinics, and assist in arranging, coordinating and providing health care in Aboriginal and Torres Strait Islander community health clinics.

Visit your health worker every 6 months or more frequently as needed.

For more information visit the National Aboriginal and Torres Strait Islander Health Worker Association website: www.natsihwa.org.au

of your GP Management Plan and Team Care Arrangements see page 17

PUBLIC AND PRIVATE HEALTH – WHAT ARE THE DIFFERENCES?

Public health system

Many public hospitals and public health services will have a diabetes outpatient clinic where you can see an endocrinologist and other members of the diabetes team such as a diabetes educator, podiatrist or dietitian.

Public diabetes outpatient clinics are usually covered by Medicare. This means that you will not have to pay, however you will need a Medicare card to attend these clinics. For more information on Medicare **see page 16.**

There can be longer wait lists and shorter appointment times in the public health system compared to the private health system.

Private health system

You can choose to see an endocrinologist and other members of the diabetes team as a private patient in their private consulting rooms. You will generally need a referral letter from your GP before you attend.

In regards to payment you will normally have to pay for this consult in full after your appointment, you can then claim your partial refund through Medicare or private health insurance depending on what health professional you saw and your level of private health insurance cover. Make sure that you have your Medicare card and private health insurance card when you attend your appointment.

For more information on private health insurance **see page 17.**

The following table outlines some of the general differences between the public and private health system, this may be different depending on where you go.

PUBLIC HEALTH SYSTEM	PRIVATE HEALTH SYSTEM
The costs will be covered under Medicare.	You will have to pay a fee on top of what Medicare or your private health insurance will cover.
You will generally see all of the health professionals you need to on one day in one location.	You will generally see health professionals on different days and in different locations. You will also have to make appointments to see each of them.
You may see a different endocrinologist or medical officer at each visit.	You will see the same endocrinologist every time and they'll keep in touch with your GP.
The appointment times may be shorter.	The appointment times will likely be much longer.

"One thing that I learnt early on from my diagnosis is that if you have a supportive diabetes team to assist you, the burden is shared and your confidence improves. I always know where to get help, and seeking advice helps me to stay up-to-date and feel well supported."

Sharon, aged 48,
type 2 diabetes for 26 years


Public
Private

SAVING YOU MONEY ON HEALTHCARE

You may already be paying for your own healthcare costs. If you are transitioning to adulthood, this may be something to start thinking about. Healthcare can become expensive for anyone across the diabetes spectrum. In Australia we are lucky that the government has financial assistance in place. Utilising any benefit that you are entitled to will help you to save money.

National Diabetes Services Scheme (NDSS)

The NDSS will help you to save money on diabetes supplies. Once registered with the NDSS you can access:

- Subsidised blood glucose testing.
- Subsidised insulin pump consumables (type 1 only).
- Free syringes and insulin pen needles (if required and indicated on your NDSS registration).

Registration for the scheme is free and available to everyone with diabetes, who lives in Australia and holds a current Australian Medicare card.

For more information visit:
www.ndss.com.au

Government allowances

Healthcare cards

Having a Health Care Card will help you to save money on prescriptions and Australian government funded medical services. If you are receiving certain Centrelink payments you will automatically receive a Health Care Card.

To find out if you are eligible to apply for a Health Care Card contact Centrelink on 132 468.

Carer allowance for anyone over 16 years

If you are over 16 years of age and living with a parent or guardian who cares for you, then they may be entitled to a carer allowance. This allowance does not include a Health Care Card and is dependent on specific criteria.

Medicare

Medicare is the program that ensures that all Australian citizens have access to free or low-cost medical and hospital care. Medicare provides access to free treatment as a public patient in a public hospital and in some instances free (or bulk billed) appointments with practitioners such as doctors (including specialists).

If you are over the age of 15 years you are entitled to have your own Medicare card. Having your own Medicare card will be more convenient and give you more independence as you transition to adult life. It is important that you take your Medicare card when you are going for any check-up or visit with your healthcare team.

For more information visit:
www.humanservices.gov.au

GP Management Plan and Team Care Arrangements

People living with diabetes are eligible to receive a Medicare rebate for a maximum of five allied health services per calendar year. This includes services from the following:

- Credentialled Diabetes Educator.
- Accredited Practising Dietitian.
- Physiotherapist.
- Accredited Exercise Physiologist.
- Podiatrist.
- Aboriginal Health Worker.
- Audiologist.
- Chiropractor.
- Mental health worker.
- Occupational therapist.
- Osteopath.
- Psychologist.
- Speech pathologist.

Work with your GP to develop the most suitable plan for your healthcare needs. Many allied health providers will bulk bill under this arrangement (see below), however they are entitled to set an additional fee (check this when you make an appointment).

Bulk billing

Doctors and other health professionals are entitled to charge a fee on top of what the government will pay them for each consult. However some will not (this is called bulk billing). Before you make an appointment, ask if they bulk bill and if not, ask how much the appointment will cost.

Pharmaceutical Benefits Scheme (PBS)

Your Medicare card will also allow you to receive medications for a cheaper price under the PBS. Therefore show your pharmacist your Medicare card when you are getting any prescription filled. If you require a lot of prescription medications you may be entitled to receive a safety net concession card which entitles you to receive further PBS medications at a reduced rate for a calendar year.

Discuss this with your pharmacist or visit the website: www.hic.gov.au

Private health insurance

Medicare does not cover everything when it comes to your health care, therefore you can choose to take out private health insurance to give yourself a wider range of health care options. It is important to determine which health insurance company can offer you what you need in line with your budget. All private health insurance requires a payment on a monthly or yearly basis.

For more information visit the website: www.privatehealth.gov.au

You may still be covered at no additional cost on your family membership until you turn 25. Contact your family's private health insurer to see if you meet the criteria to still be covered.

2/TWO

BACK TO BASICS FOR DAY-TO-DAY

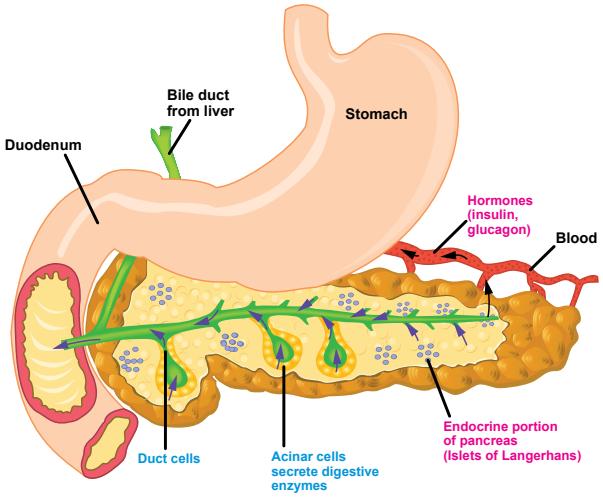
You may have been diagnosed with diabetes as an adult or transitioned into adult care from a paediatric setting. In both of these situations it may be a good time for a refresher on the day-to-day basics of managing diabetes. Getting these basics right can make all the difference for optimal diabetes management.

UNDERSTANDING GLUCOSE METABOLISM AND THE ROLE OF INSULIN

Glucose is the main source of energy for the body and predominantly comes from the carbohydrate foods that we eat. Within two hours of digestion, carbohydrate foods such as bread, fruit and milk are broken down into, or converted to glucose, which then enters the blood stream.

A hormone called insulin (which is made by the beta cells in the pancreas) must be available to help transport glucose from the blood stream into the body's cells to be used for energy production.

Insulin is a bit like a key that unlocks the cell doors to allow glucose to move in.



Before you developed diabetes your pancreas would produce insulin frequently throughout the day to keep blood glucose levels between the ranges of 4-8mmol/L at all times. Your body always needs a certain amount of glucose in the blood stream – but not too much or too little.

Without diabetes:

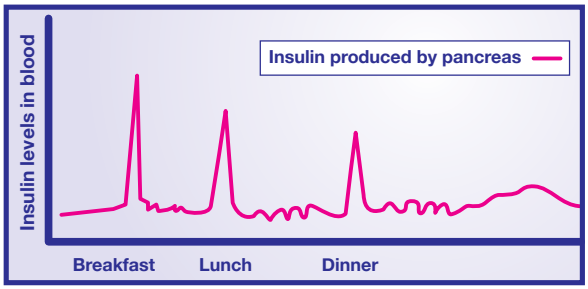
- the **pancreas** constantly produces insulin when BGLs rise above the usual range and
- the **liver** supplies **glucose** whenever BGLs start to drop below the desired range.

The body usually does a good job at balancing this.

A rise in BGLs can come from food (predominantly carbohydrate) or a hormone response that makes the liver release stored glucose in the blood stream. This response could be from exercise or hormone changes (stress, excitement, menstruation or illness). Whatever the reason, the insulin allows this extra glucose to be moved from your blood stream into the cells of your muscles and tissues to be used to produce energy. Insulin production and release is a finely tuned feedback system.

In regards to the stored glucose that was referred to earlier, the liver stores glucose in the form of glycogen that is converted back to glucose and released in the blood stream when the body requires it. This may be between meals or during exercise – this is normal glucose metabolism. Even if a person does not eat carbohydrate, the body will make glucose from protein and fat and release this in the blood stream – this is why all people with type 1 diabetes (and some people with type 2 diabetes) always need a constant supply of insulin, hence the reason people with type 1 should never omit their insulin.

There is a problem with this whole process when diabetes occurs.



UNDERSTANDING DIABETES AND THE AIM OF MANAGEMENT

Diabetes is a condition where there is too much glucose (sugar) in the blood.

This is because the body either:

- Does not make any or enough insulin, or
- When the insulin that is being produced does not work effectively (this is called insulin resistance).

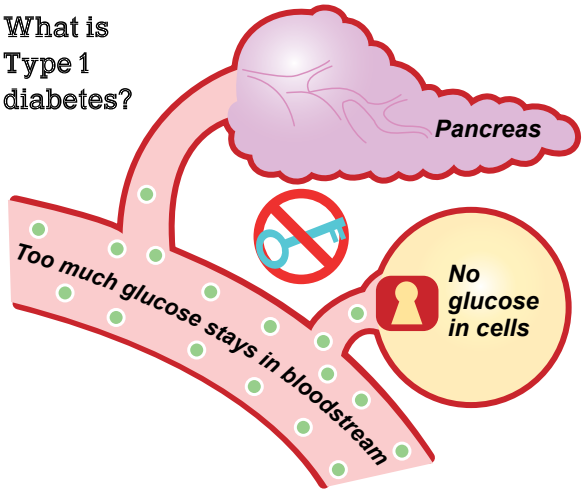
Without insulin, glucose builds up in the blood stream.

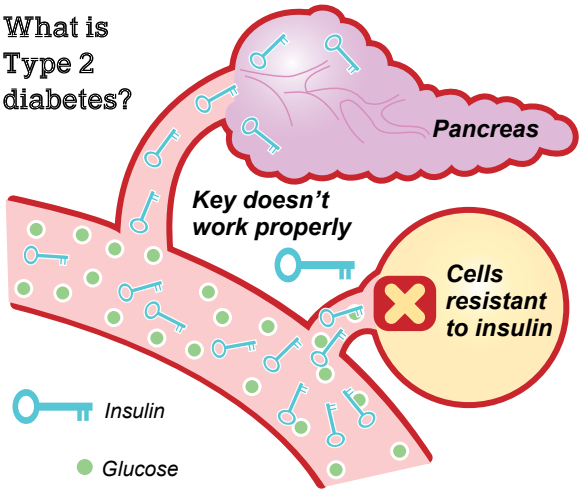
If diabetes is not managed, high BGLs over time can damage small and large blood vessels in the body, leading to complications such as:

- Cardiovascular disease (including stroke, heart attack and peripheral arterial disease).
- Nerve damage (neuropathy).
- Kidney damage (nephropathy).
- Eye damage (retinopathy).

The aim of diabetes management is to live a fulfilling life and maintain BGLs as close to a target range as possible and reduce other risk factors (such as lowering cholesterol and not smoking) in order to prevent diabetes complications. All people with diabetes are recommended to:

- Monitor their BGLs regularly to help maintain them as close to the target range as possible.
- Exercise regularly.
- Enjoy a healthy diet.
- Have regular medical check-ups with their diabetes team.





Type 1 diabetes

Type 1 diabetes occurs when the pancreas does not produce any insulin. Therefore, administering insulin either by multiple daily injections or a continuous supply via an insulin pump, will help to transport glucose from your blood stream to your cells to be used as energy.

Insulin regimens have been designed to replicate how the pancreas naturally delivers insulin. Insulin regimens will always include:

- Insulin to keep BGLs stable between meals and overnight (background or basal insulin), and;
- Insulin to help transport glucose from meals and snacks (meal time or bolus insulin).

Your insulin regimen will always need adjusting depending on many factors such as:

- Weight changes.
- Growth.
- Hormonal changes.
- Illness / stress.
- Activity levels.
- Food intake.

Ask your diabetes team how your insulin works to help you learn about how it should be adjusted depending on your BGLs.

For more information on insulin delivery **see page 23.**

Type 2 diabetes

Type 2 diabetes occurs when your body either does not produce enough insulin or the insulin does not work properly. This is known as insulin resistance. Blood glucose levels may initially be managed with healthy eating and exercise, however many people will require medications. There are different classes of oral and injectable medications that may be used targeting insulin resistance, insulin production or hormones and enzymes involved in glucose metabolism.

Approximately 50% of people with type 2 diabetes will commence insulin to manage blood glucose levels (within 10 years of diagnosis). This is because the production of insulin by the pancreas declines with time.

If you are prescribed insulin, the type of insulin regimen used will depend on your BGLs and your doctors recommendations based on individual factors. It may involve one injection of long acting insulin or multiple injections over the day. More information about insulin is on the next page.

For more information on medications for type 2 diabetes visit: www.diabetessa.com.au

TYPES OF INSULIN FOR DIABETES MANAGEMENT

Here is a brief outline of the key types of insulin available to help manage diabetes.

Type of insulin
Rapid-acting.

Example
Novorapid, Apidra, Humalog.

Peak of action
(greatest effect on BGLs)
1-3 hours.

Purpose
Injected immediately before meals and possibly snacks to cover the insulin needed to deal with the glucose entering the blood stream from that meal or snack. This replicates the body's natural response to eating.

Duration
(the amount of time that it continues to have some effect on BGLs)
3-5 hours.

Notes on using this type of insulin
You and your diabetes team can work out an insulin to carbohydrate ratio for each meal so you can adjust your rapid acting insulin depending on how much you are eating – everyone will have a different insulin to carbohydrate ratio.

Type of insulin
Short-acting.

Example
Actrapid, Humalin R.

Peak of action
(greatest effect on BGLs)
2-4 hours.

Purpose
Injected 15-30 minutes before meals to cover the insulin needed to deal with the rise in BGLs following that meal.

Duration
(the amount of time that it continues to have some effect on BGLs)
6-8 hours.

Notes on using this type of insulin
Because of the longer peak and duration of action compared to rapid acting insulin, some people will require a carbohydrate containing snack between meals to avoid hypoglycaemia when on this insulin.

Type of insulin
Intermediate-acting.

Example
Protophane, Humalin NPH.

Peak of action
(greatest effect on BGLs)
4-12 hours.

Purpose
This insulin aims to cover the insulin needed for about half the day or overnight.

Duration
(the amount of time that it continues to have some effect on BGLs)
16-24 hours.

Notes on using this type of insulin
Does not need to be injected with food. In general, carbohydrate intake should be consistent across the day to avoid hypoglycaemia.

Type of insulin
Long-acting.

Example
Lantus, Levemir.

Peak of action
(greatest effect on BGLs)
Minimal peak.

Purpose
This insulin is called a 'background' or a 'basal' insulin that aims to keep BGLs stable in between meals and overnight.

Duration
(the amount of time that it continues to have some effect on BGLs)
24 hours.

Notes on using this type of insulin
This insulin will not last 24 hours in all people. It replicates what the body naturally does between meals and overnight. Does not need to be injected with food, but at the same time each day. If your fasting BGLs or BGLs before a meal are consistently above or below your target range your long acting insulin dose will need to be adjusted.

For more information on how different insulin regimens work visit: www.diabetessa.com.au

INSULIN DELIVERY

Insulin can be delivered via an insulin pen, a syringe or an insulin pump. The delivery option will depend on your insulin regimen and type of diabetes that you have.

Discuss any queries with your diabetes team.

Insulin pumps

Insulin pumps are available to deliver insulin. They are a small, computerised device (about the size of a pager) that supplies a constant 'drip' of rapid acting insulin to more closely replicate how the body naturally delivers insulin. It can deliver a larger amount of insulin when the user eats carbohydrate, and can be programmed to deliver varying amounts across the day depending on the individual's requirements.

The insulin is delivered through tubing that is attached to a tiny cannula that sits just under the skin. This cannula has to be changed every three days.

Insulin pumps are covered by private health insurance under hospital cover, for people living with type 1 diabetes. The consumables (e.g. cartridges and lines) required for the pump are subsidised by the NDSS.

ROTATION OF INJECTION SITES AND LIPOHYPERTROPHY

If you administer insulin or other injectable diabetes medications used to manage type 2 diabetes, it is important to always rotate injections sites and insulin pump sites to avoid trauma to the area.

Specific to insulin, rotating injection and pump insertion sites is important in order to avoid lipohypertrophy (fatty lumps). These lumps are caused by the accumulation of extra fat where insulin has been regularly injected. Injecting into fatty lumps can affect how your insulin works, leading to fluctuating BGLs.

Rotation should not just be from one side of the abdomen to the other, but around the whole abdomen. An example is the calendar method (seen below) or the 'dart board' method for rotation, where the injection sites follow the lines of an imaginary calendar or dart board. If you have any scarring or fatty lumps, avoid these areas and stay two finger widths away from the belly button.

WHERE TO INJECT

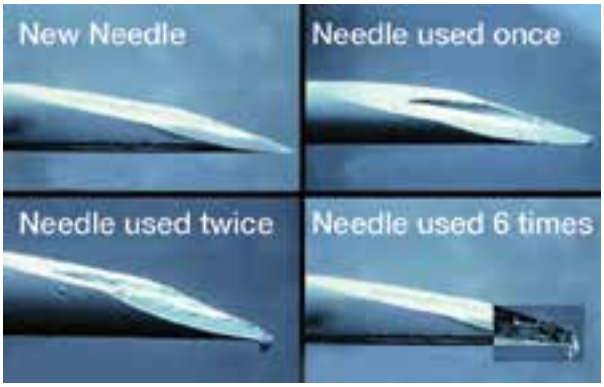
The abdomen is the preferred area for injecting insulin and other injectable medications. Injecting into the leg may lead to insulin being injected into the muscle compared to the subcutaneous tissue. This will affect how the medications work.

NEEDLE LENGTH

For insulin and other injectable medications to be effective they need to be injected into the fatty tissue between the skin and muscle (this is called the subcutaneous fat). Research suggests that most people's skin thickness is similar (despite their overall body weight) and against common belief, shorter needles are suitable for most of the population. Discuss needle length and type with your doctor or diabetes educator.

USING NEEDLES ONCE

All needles and syringes used for injecting are designed for single use only. They are very fine; therefore using the needles more than once will cause damage and potential injury. These are free as part of the NDSS, therefore there is no reason to use needles more than once.



STORAGE OF INSULIN

Correct storage of insulin can ensure that your insulin is effective and injected with comfort. Use the following recommendations:

- Unopened insulin should be stored in the fridge between 2˚C and 8˚C ensuring that it is away from the freezer compartment (frozen insulin cannot be used).
- Once opened, insulin should be kept at room temperature and away from direct light.
- Opened insulin will remain effective for up to 28 days.
- Always check the expiry date, and only use insulin within date.

BLOOD GLUCOSE MONITORING – A TOOL NOT A TEST

Blood glucose monitoring should not be seen as a test, but as a tool to help you with your diabetes management. Monitoring your blood glucose levels regularly and at meaningful times can help you to learn about factors that immediately impact on your BGLs and help you to identify patterns so that you can balance food, exercise and medication / insulin doses.

Day to day monitoring is important as there are many factors that affect BGLs, and patterns in BGLs continually change.

Pre-prandial or fasting BGL

The BGL you take first thing in the morning is called a fasting BGL and the BGLs you take before meals are called pre-prandial BGLs.

Post-prandial BGLs

The BGL you take two hours after you eat is called a post-prandial BGL. This level will depend mostly on the amount of carbohydrate in your meal or snack.

Regularly monitoring BGLs will help you to:

- Be confident to act on levels if they are out of your target range.
- Learn how different lifestyle factors such as physical activity, different foods, travel, stress and illness affect your BGLs.
- Become more confident in how you manage your diabetes.
- Understand how different medication and insulin doses affect your BGLs.
- Alert you immediately if BGLs are above or below your target range. This will allow you to manage the situation and keep you safe.
- Alert you of changes in your BGL patterns.
- Understand when to seek advice from your diabetes team about your diabetes management.

Work with your diabetes team to determine your personal blood glucose targets, when to monitor and how to respond if they are out of your target range.

THE HBA1C

The HbA1c is a laboratory test that shows the average level of blood glucose over the previous three months.

When glucose enters the blood stream it can attach to the protein in the red blood cell that is responsible for carrying oxygen. This protein is called haemoglobin and when glucose attaches it becomes a 'glycated haemoglobin' molecule known as HbA1c.

The higher the HbA1c the higher the average blood glucose.

Because the red blood cell has a life span of approximately 120 days the HbA1c can reflect average BGLs over 8-12 weeks. Doctors can use the HbA1c to help assess a person's overall management and the effectiveness of their current medication and / or insulin regimen.

For many people the recommended HbA1c target is 53.0mmol/mol (7%) or below. However, it is important to discuss this target with your diabetes team as it may be more appropriate for you to aim for a slightly higher or lower target.

SAFE SHARPS DISPOSAL

A sharp is any device that is used to penetrate the skin including a finger pricking device or lancet, insulin syringes, pen needles used with insulin pens and needles used to insert insulin pump sets.

Once any of these sharps have been used they should be disposed of in a sharps container. This is a non-reusable container that is rigid, leak proof, puncture resistant and shatter proof with a tight fitting lid. A sharps container should comply with Australian Standards.

Once a sharps container is full it must be sealed and brought back to Diabetes SA or alternatively you can contact your local council or pharmacy and ask if they have approved sharps bins for safe sharps disposal.

Sharps containers are yellow in colour and are clearly labelled as seen in the images below:

THE HIGHS AND LOWS OF MANAGING BGLS

Having diabetes can be like being on a roller coaster ride with varying BGLs at different times of the day, month and year. Sometimes you may know what has caused your highs or lows, but at times there may be no reason at all. The following information will hopefully help you to identify potential factors that may be impacting on your BGLs to help you more confidently manage your diabetes.

HYPOGLYCAEMIA – THE LOWS

When diabetes is managed with insulin or certain oral medications called sulphonylureas, hypoglycaemia (also known as a 'hypo') can occur as a side-effect. Some common brand names of sulphonylureas include:

- Daonil.
- Glimel.
- Diamicron.
- Glyade.
- Amaryl.
- Dimirel.

A hypo is a blood glucose level of 4mmol/L or below.

Things that may cause a low:

Although everyone is different, the following list highlights some explanations of a hypo:

- Unplanned exercise.
- Exercise that involves large muscle groups such as yoga and golf.
- More strenuous or prolonged exercise than usual.
- The action of your insulin not matching how your food is being digested.
- Taking too much insulin or diabetes medications for your food intake.
- Skipping or delaying a meal when you have injected insulin or taken sulphonylureas.
- Less carbohydrate than usual.
- For females, menstruation can cause a low.
- Weight loss.
- Drinking alcohol.
- Hot or humid weather.
- Sometimes a hypo may occur for no reason at all.

Watch for symptoms of a low including:

- Sweating.
- Weakness.
- Drowsiness.
- Clamminess.
- Mood changes.
- Tearful/crying.
- Hunger.
- Irritability.
- Nausea/stomach cramps.
- Shaking or trembling.
- Disorientation.
- Headache.
- Light headedness.
- Poor concentration.
- Tingling/numb lips.

It's not an art or a science but one big balancing act AND everybody is different!

Hypo unawareness

Some people's hypo symptoms will change over time and some may experience just one, or all of these symptoms. Some people may not experience any hypo symptoms at all, this is called hypo unawareness.

Discuss hypo unawareness with your diabetes team to ensure that you are implementing strategies such as regular blood glucose monitoring, to keep you safe.

How to treat a low

Correct treatment of a hypo is really important, as over treating can potentially leave you high for the rest of the day.

Hypo treatment

Step 1:
Consume 15 grams (g) of quick acting carbohydrate.

This is equivalent to:

- 6-7 standard jelly beans OR
- 150ml of regular soft drink (⅓ can) OR
- Glucose tablets equivalent to 15g of carbohydrate OR
- 3 teaspoons of sugar or honey OR
- 150ml of fruit juice (½ glass).

WAIT 10-15 minutes, and then monitor BGLs.
If levels are not above 4mmol/L repeat step 1.
If they are above 4mmol/L continue to step 2.

Step 2:
If it is not time for a meal, consume 15g of longer acting carbohydrate.

This is equivalent to:

- A slice of multigrain bread OR
- 1 tub of yoghurt OR
- 1 piece of fruit OR
- 1 glass of milk or soy milk.

If you are experiencing frequent hypo's it is important to talk to your diabetes team as you will likely need an adjustment in your medication or insulin regimen.

For more written information on hypoglycaemia visit: www.diabetessa.com.au

It is important to note that people who manage their diabetes with lifestyle alone or other oral diabetes medications cannot experience hypoglycaemia as a side effect of their management.

Treatment of severe hypoglycaemia

As BGLs continue to fall brain function will deteriorate. When BGLs drop below a certain level this is considered severe hypoglycaemia, which can lead to unconsciousness, coma or seizures. Although this is rare, it is important for friends and family members to understand how to manage this situation.

If you are ever unconscious, convulsing or unable to swallow you should NEVER be given food or fluids. The only way to manage severe hypoglycaemia is to inject glucose into the vein (by a doctor or paramedic) or an injection of Glucagon (see next column). People around you should call 000 immediately and perform first aid:

- Check your airway and breathing.
- Lay you on one side and protect you from any harm.
- Dial 000 to call for an ambulance and inform the operator that there is a diabetes emergency.

Glucagon

Glucagon is a hormone that releases stored glucose from the liver into the blood stream. This results in a rise in blood glucose levels within 10 minutes. Glucagon is given by an injection into the muscle (if you are unable to eat or drink a rapid acting source of carbohydrate). The hormone will work for approximately 30 minutes, which should allow you to gain the ability to consume some carbohydrate via food or drinks by mouth to manage hypoglycaemia.

In order to give a person glucagon it needs to be prepared by mixing the glucagon powder with water and drawing it up in a syringe. This means that a person should be trained before giving glucagon and a prescription is required. A member of your family or partner may be taught to use glucagon. Discuss this with your doctor.

Diabetes SA has an online program that explains hypoglycaemia.

This is great for you and your family and friends to learn about managing hypoglycaemia, including emergency situations.

www.onlinelearning.diabetessa.com.au

HYPERGLYCAEMIA – THE HIGHS

Every person with diabetes will occasionally experience hyperglycaemia 'a high'. There are many reasons why it may occur and everyone is different with regards to what causes BGLs to rise.

Hyperglycaemia is defined as a BGL:

- Above 7mmol/L when no food has been eaten for at least eight hours and
- Above 11mmol/L two hours after a meal.

However, symptoms of hyperglycaemia may only be felt when your BGLs are above 15mmol/L.

Symptoms of a high

A high BGL may cause you to feel tired, thirsty and unwell. The kidneys which are involved in filtering the blood are presented with a blood supply that contains a lot more glucose. This glucose must be removed from the body, and therefore you may pass large volumes of urine. Passing more urine leads to dehydration meaning you may drink more. Symptoms can develop very quickly.

Things that may cause a high:

- Stress, excitement or anything that triggers adrenaline release.
- Illness, infection or pain.
- Medications used to treat other medical conditions such as corticosteroids.
- Intense exercise – adrenaline again!
- Poor sleep.
- Not injecting enough insulin or forgetting an insulin dose.
- Not enough insulin or blood glucose lowering medication in relation to meals.
- Newly diagnosed diabetes, not yet adequately managed.
- Too much carbohydrate at once when insulin resistance is a concern (type 2).
- Hormonal changes - for females, a week before menstruation can send them high due to hormonal changes.
- Less physical activity than normal.
- Out of date or damaged insulin.
- Lipohypertrophy – as a result of injecting insulin continuously in the same area.
- In type 2 diabetes, consistent high BGLs may be an indication that the condition is progressing and it is important to see your health care provider for a review.
- The dawn phenomenon – this is a normal rise in morning BGLs because of a surge of hormones (adrenaline, cortisol, growth hormone) that the body produces around 4am that get us ready to wake up. This happens to everyone, but often people with diabetes don't produce enough insulin, or have enough insulin on board to deal with this, waking up with higher levels – it's not your fault, or has anything to do with the previous night's meal. Some people will need adjustments in their medication or insulin to deal with this.
- The Somogyi effect (for people at risk of hypoglycaemia) – this is when BGLs are high when you wake up and occurs if your BGL drops too low in the early hours of the morning. Hormones (such as growth hormone, cortisol, and adrenaline) are released to help reverse the low BGL but lead to higher levels in the morning.
- Checking BGLs at 2am-3am will help you to figure out if you are experiencing the dawn phenomenon or the Somogyi effect. If your BGL is low at 2am-3am, suspect the Somogyi effect.
- Sometimes a high may occur for no reason at all.

Managing the highs

If you experience a high, it should not be viewed in a negative way and you should not blame yourself. Stop and have a think about what the reason may be and learn from this experience. It may be a one-off because you are unwell or you ate more carbohydrate than usual, it may be occurring at a similar time each day, indicating a need for a medication change or an insulin adjustment.

Talk to your diabetes team about how to manage the highs, including when you are unwell.

DIABETIC KETOACIDOSIS – TYPE 1 DIABETES ONLY

When you have type 1 diabetes and experience BGLs above your target range you need to be aware of a serious condition called diabetic ketoacidosis (DKA).

DKA can occur when you do not have enough insulin on board. This may occur when you have an illness or infection, which increases your insulin requirements, or when you may not have given yourself enough (or any) insulin – this is easily done.

Whatever the reason, if insulin is not available to transport glucose into the body's cells for energy, the body will break down fat stores as an energy source. In the absence of insulin this is not a good thing!

The quick breakdown of fat will produce a dangerous by-product called ketones, which upsets the chemical balance in the blood. This can make you very unwell with symptoms such as:

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

DKA will lead to severe dehydration, which will require hospitalisation.

It is important to monitor for ketones in the blood before you develop DKA and require medical intervention. This can be done at home using a blood glucose meter that has the optional function to test for ketones. This will require specific test strips for ketone testing and are different to regular test strips.

Check with your test strip supplier to see if your machine has the ketone test option.

It is recommended that if BGLs are above 15mmol/L or if you feel unwell you should test for ketones. If you don't have the right blood glucose machine to do this and you feel unwell, visit your local GP service and they can test your ketones there.

Use the following as a guide:

- Ketone level above 1.5mmol/L – this means you may be at risk of DKA. Contact your diabetes team immediately for advice. If you cannot contact your diabetes team, call the nearest hospital and speak to an endocrinologist or registrar or go to the emergency unit of your nearest hospital.
- Ketone level 0.6-1.5mmol/L – this may indicate the development of a problem that may require medical assistance. Your diabetes team should have provided you with information on how to deal with ketones at this level.
- Below 0.6mmol/L – this is a normal range. No action required.

SICK DAY MANAGEMENT

Illnesses and infection will generally cause a rise in BGLs when you have diabetes. Therefore, it is important to understand how to manage this situation and have a plan in place – talk to your diabetes team about your individual sick day management plan.

Important points to consider when unwell:

- **Always take your insulin and medications**
  Only in rare cases is the insulin dose reduced during illness. Some people will require extra insulin when they are unwell. It is important to organise a sick day management plan with your endocrinologist and diabetes educator. This will help you to make decisions about your BGLs and insulin requirements.

  If you take Metformin you may need to stop taking this if you are vomiting or have diarrhoea. Contact your doctor for advice on whether you should stop your metformin.
- **Monitor your BGLs – every 2 hours at first**
  It is important to regularly monitor your BGLs so that you can detect changes in your blood glucose levels and assess the need for extra insulin.
- **Test for ketones (type 1 only)**
  Test for Ketones regularly. If your blood ketones are more than 0.6mmol/L and your blood glucose level is over 15mmol/L contact your diabetes team or follow your sick day management plan.
- **Rest**
  If possible have a friend or relative either stay with you or check on you frequently.
- **Keep drinking and (if possible) eating**
  Carbohydrate containing foods and fluids are important when you are unwell.

Always eat normally if you can and sip extra fluids (approximately 125-250ml) each hour to prevent dehydration – see below for fluid options depending on your BGLs.

If you can't eat and are at risk of hypoglycaemia try to have:

- Sweetened drinks if your glucose is less than 15 mmol/L – fruit juice, cordial, soft drink, sports drinks, gastrolyte, tea and coffee with added honey or sugar, milk and milo etc.
- Sugar free fluids if your blood glucose is more than 15mmol/L – water, diet soft drinks/ cordial/jelly, weak tea/coffee, sugar free sports drinks, vegetable juice or broth.

Some easy to manage carbohydrate containing snacks include biscuits, crisp breads, dried toast, mashed potato, instant rice sachets, jelly and breakfast cereal.

When to seek urgent medical advice (eg. hospital emergency department):

- When your sick day management plan says to do so.
- If you can't keep food or fluids down and have persistent vomiting, diarrhoea and/or abdominal pain.
- If you have deep rapid breathing or breathlessness.
- If you are extremely drowsy.
- If you have a 'fruity' odour to your breath.
- When you have severe dehydration symptoms – increased thirst, dry mouth, swollen tongue, weakness, dizziness, fainting, palpitations, headache, inability to sweat, decreased or no urine output.
- Glucose levels that continue to rise despite 2 extra doses of insulin (as per sick day management plan).
- Blood ketone levels that remain moderate/ large and not decreasing despite 2 extra doses of insulin.
- Persistent hypoglycaemia.
- You or your support person is unable to carry out or follow your sick day management plan.

For more information on Sick Day Management visit: www.diabetessa.com.au

3/THREE

FOOD, FOOD GLORIOUS FOOD

We briefly mentioned food earlier, in particular carbohydrate foods causing BGLs to rise. So the easy solution would be to cut carbs from the diet right? No sorry, it's not that simple (or enjoyable).

YES you can certainly understand carbs more and manipulate the amount in your diet to help manage your diabetes, but food is just one piece of the puzzle when it comes to factors that affect diabetes.

Most people love food. They eat for many different reasons including cultural, religious, health, enjoyment and to celebrate. You can still eat for all of these reasons when you have diabetes, without missing out on your favourite foods.

DON'T LET ANYONE TELL YOU THAT YOU CAN'T EAT A CERTAIN FOOD. THEY PROBABLY FEEL THAT THEY ARE OFFERING HELPFUL ADVICE, BUT IT IS COMPLETELY INACCURATE AND NOT HELPFUL AT ALL.

The important things to think about when it comes to food and diabetes are:

- What eating pattern can keep you healthy and reduce your risk of diabetes-related complications (focusing on cholesterol, triglyceride levels, blood pressure and weight).
- Eating to maintain quality of life and the pleasure of eating.
- What foods do you enjoy and make you feel good and satisfied.
- How do specific foods and meals impact on your BGLs, important considerations being:
  - The amount of carbohydrate.
  - The glycemic index (GI) of the food.

HEALTHY EATING, WHAT IS IT?

A variety of eating patterns (combinations of different foods and food groups) are acceptable for the management of diabetes (e.g. the Mediterranean way, Australian Guide to Healthy Eating, vegetarian, lower (not no) carbohydrate – still no definition for this). Although a variety of eating patterns appear acceptable, it's important to seek professional advice around this to make sure that you are still eating for long-term health and wellbeing and that you are reducing your risks of complications.

The most important thing to remember is that when it comes to food choices, people with diabetes are advised to choose the same healthy foods recommended for the entire population (generally based on the Australian Guide to Healthy Eating). This means enjoying a good variety of minimally processed, general healthy foods with treats on occasion, and no special diets or 'diabetic' foods.

The real difference between a person with diabetes and a person without diabetes is the attention to carbohydrate foods to help manage BGLs.

Consuming a wide variety of foods from the core food groups will help to provide the essential vitamins and minerals required each day for overall health and wellbeing and keep food interesting. The core food groups include:

- Grain foods including bread, cereal, rice, pasta, noodles, barley and quinoa.
- Vegetables and legumes/beans.
- Fruit.
- Dairy - milk, yoghurt and cheese.
- Lean meats, poultry, fish, eggs, tofu, nuts, seeds and legumes/beans.

Foods such as cakes, biscuits, chocolate, chips, fruit juice and sugary drinks do not have to be avoided, however it is recommended that all adults enjoy these foods on occasion as they have little nutritional value and are often high in energy (kilojoules or calories). If a person with diabetes eats these foods, the carbohydrate load just needs to be considered.


Australian Government
National Health and Medical Research Council
Department of Health and Ageing
www.eatforhealth.gov.au
Australian Guide to Healthy Eating
Enjoy a wide variety of nutritious foods from these five food groups every day.
Drink plenty of water.
Vegetables and legumes/beans
Grain (cereal) foods, mostly wholegrain and/or high cereal fibre varieties
rolled oats
Muesli
Polenta
Quinoa
Fettuccine
Penne
couscous
Wheat flakes
Red kidney beans
Red lentils
Chickpeas
Lentils
Mixed nuts
tofu
milk
soy drink
Fruit
Lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans
Milk, yoghurt, cheese and/or alternatives, mostly reduced fat
Use small amounts
Only sometimes and in small amounts

WHY CARBOHYDRATES COUNT

Understanding the amount of carbohydrate in your meals and snacks is an important part of the dietary management of diabetes.

Carbohydrate foods are the body's main energy source and provide many essential nutrients required for health and wellbeing. So we do need them, and they don't have to be avoided.

Carbohydrates include all foods containing starches or sugars (natural and added) and are broken down to glucose within 2 hours of digestion. Therefore, the BGLs broken down to, or converted to glucose two hours after you eat will predominantly be influenced by the amount of carbohydrate in your meal or snack.

IT IS THE TOTAL CARBOHYDRATE CONTENT (which includes starches and sugars) of a meal that affects BGLs after a meal – not just the sugar content.

Having the skills to identify the amount of carbohydrate in your meals and snacks will allow you to understand how a food may impact on your BGLs. This is helpful:

- If you administer rapid acting insulin at meal or snack times. This will help you to match the amount of insulin needed to cover the amount of carbohydrate in your food intake. Your diabetes team can help you learn how to adjust your rapid acting insulin according to your food intake – this offers some flexibility in your eating pattern.
- If you are prescribed a consistent or set dose of insulin you can use carbohydrate counting to ensure that you consume a consistent amount of carbohydrate to avoid large fluctuations in your BGLs, or
- If you have type 2 diabetes, understanding the amount of carbohydrate in your meals and snacks will help you find the balance between having enough for health but still managing your post-prandial BGLs.

What foods contain carbohydrate?

Grain foods – Bread, cereals, pasta, noodles, rice, quinoa, semolina, barley, polenta and bulgur

Starchy vegetables and legumes

Fruit (fresh, dried, tinned in natural juices and juice)

Milk based dairy foods

Cakes, biscuits, ice-cream, chocolate and chips

WHAT IS CARBOHYDRATE COUNTING?

Carbohydrate counting aims to identify the amount of carbohydrate in your food. Some people will learn to count in carbohydrate portions (serves of food containing 10g of carbohydrate) or exchanges (serves of food containing 15g of carbohydrate) and others will count each gram of carbohydrate. It is important to work with your diabetes team to determine the best method for you.

TOOLS AVAILABLE TO COUNT CARBS

There are lots of different tools available to help you identify the amount of carbohydrate in your meals and snacks including:

- Pre-calculated lists from your diabetes service or dietitian.
- Australian based carbohydrate counting books - our favourites include Allan Borushek's "Calorie, fat and carbohydrate counter" and the "Traffic light guide to food carbohydrate counter".
- Smart phone Apps.
- Specific food manufacturer websites or www.calorieking.com.au

To use any of these carbohydrate counting tools you will need to know the weight or amount of food that you are consuming (YOUR serving size – this is important). You will get really good at just estimating this, but while you are learning you can weigh your portion size using digital scales or measure using measuring cups, jugs and spoons.

From time to time, go back to weighing and measuring your food just to brush up on your skills and estimations.

Smart phone applications (Apps)

Using smart phone Apps is a great way to count carbohydrates, especially when you are eating out or at a friend's house.

The following is an example of how to use one of the popular Australian based Apps. Each App will be different but it is good to see how we can use all of the information in order to count the carbohydrates in your meal or snack. This process will also be used if you were using a carbohydrate counter book or website.

STEP 1	STEP 2	STEP 3
Search a food or certain cuisine e.g. vegemite, apple or Indian	Find the brand of food that you are eating or use 'average all brands'	Estimate YOUR serving size and enter into the App – this will generate nutritional breakdown for this serving size
		

Visit the Diabetes SA website for updated information on smart phone Apps for carbohydrate counting.
www.diabetessa.com.au/type-1/support.html
www.diabetessa.com.au/type-2/support.html

"Understanding the importance on how to count carbs assists you in preventing the high and lows"

Matt, aged 50,
type 1 diabetes for 6 years

Label reading for carbohydrate foods

When shopping for healthy foods, the nutrition information panel is a useful tool. It can help you to compare foods to determine the highest product in fibre and lowest in total fat, saturated fat and sodium. It can also be used to determine the amount of carbohydrate in a food product.

The nutrition information panel explained

Per serve

Use the per serve column to work out how much carbohydrate you will eat in your serving size.

Sugars

This tells you how much of the total carbohydrate is made up of sugar. This figure includes added sugar as well as naturally occurring sugar from fruit (fructose) and milk (lactose).

Crisp bread		
Nutrition Information **Serving size – 2 crisp breads**		
	Per Serving	**Per 100g**
Energy (kJ)	338	1535
Energy (cal)	81	367
Protein (g)	2.2	10
Carbohydrate *		
- Total (g)*	13.4	61.1
- Sugars (g)	0.8	3.8
Fat		
- Total (g)	1.1	5.2
- Saturated (g)	0.2	0.9
Dietary Fibre (g)	3.7	16.7
Sodium (mg)	75	340

Serving size

This is the average serving size of the product according to the manufacturer. This can be used to determine the carbohydrate content of your serve.

Per 100g

This column allows you to simply compare the nutritional value in products. It is useful to compare the total fat, saturated fat and sodium content of food products.

Total carbohydrate

The total carbohydrate content includes all starches and sugars in the food. Use this information to calculate how much carbohydrate is in your serve.

Using a food label

The following example refers to the nutrition information panel above.

1. Look at the per serve column and the serving size – e.g. 2 crisp breads.
2. Look at the total carbohydrate per serve – e.g. 13.4g for 2 crisp breads.
3. Think about how much of this serving size you will eat to workout how much carbohydrate in your serving size:

- If you are going to eat 4 crisp breads, multiply this carbohydrate content by 2 and therefore will be eating 26.8g (round up to 27g) of carbohydrate.
- If you are only going to eat 1 crisp bread you will have to divide the total carbohydrate content by 2 and therefore will be eating 6.7g (round up 7g) of carbohydrate.

Remember that it is the total carbohydrate that affects blood glucose levels, not just the sugar content. The amount of sugar on a food label is not a useful indicator as to whether it is a healthy food or how it will affect BGLs.

Be aware of hidden sources of carbohydrate when carbohydrate counting

- Large serves of low carb foods e.g. carrot juice/ pumpkin soup.
- Bread crumbs (e.g. schnitzel, crumbed fish).
- Batter.
- Pastry.
- Chutney.
- Flour – coating, thickeners.
- Large quantities of nuts, especially cashew nuts and chestnuts.
- Sauces and marinades.

HOW DOES SUGAR FIT IN?

People with diabetes do not need to avoid sugar

As part of healthy eating of course it's not recommended to have large amounts of added sugar. This would include large amounts of table sugar, normal soft drinks, cordials, processed snack bars, fruit juice and lollies, as these foods offer no nutritional value. However, using a small amount of sugar in tea and coffee, added to nutritious meals or used in healthy cooking fits in to a healthy balanced diet based on whole, minimally processed foods.

Small amounts of added sugar just need to be included in the total carbohydrate count for a meal or snack, remembering that one teaspoon of table sugar or sweet syrup has approximately five grams of carbohydrate.

Fruit and milk-based foods such as milk, yoghurt and custard contain the natural sugars fructose and lactose. These foods offer substantial nutritional value, an essential part of healthy eating. Any natural sugars should also be included in the total carbohydrate count for meals and snacks.

HOW MUCH CARBOHYDRATE TO EAT?

Your dietitian can help you to identify the amount of carbohydrate in your food and provide individual advice about your carbohydrate requirements based on:

- Your personal experience and preference.
- Current eating pattern (combinations of different foods and food groups) and its long term safety.
- The nutrient density of food choices.
- Weight.
- Age.
- Gender.
- Cultural beliefs.
- Activity level.
- Blood glucose levels.
- Body composition goals.

Everyone is different and there is no set carbohydrate quantity recommended for people living with diabetes. Although a variety of eating patterns appear acceptable, it's important to seek professional advice around this to make sure that you are still eating for long-term health and wellbeing.

WHAT WORKS FOR ONE PERSON, DOESN'T ALWAYS WORK FOR ANOTHER

The GI symbol can be one way to identify healthy foods as foods that carry the GI symbol have had the GI tested at an accredited laboratory and meet strict criteria for kilojoules, saturated fat and sodium. To find out more about tested foods visit www.gisymbol.com.au.

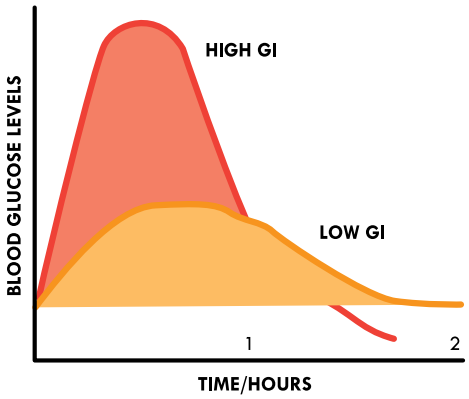
THE GLYCEMIC INDEX

The type of carbohydrate that you eat is also important to consider, as different carbohydrate foods will break down into glucose at different rates.

In the past, carbohydrate foods were referred to as 'simple' or 'complex,' suggesting that 'simple' carbohydrate foods are digested more quickly compared to more 'complex' carbohydrates. However, the introduction of the glycemic index (GI) illustrated the complexity of this topic and made the words simple and complex terms of the past.

The GI ranks carbohydrate foods on a scale from 0 to 100 according to the rate of digestion and how this impacts on blood glucose levels after eating.

- **Low GI carbohydrates** will break down more slowly and therefore produce a more gradual and relatively low rise in BGLs.
- **High GI carbohydrates** will break down faster and produce a more rapid and higher rise in BGLs. Not only is this not ideal for BGLs, but meals and snacks based on high GI carbohydrates may leave you hungry soon after.



Low GI carbohydrates can have a positive impact on BGLs. They keep you feeling full for longer and also play an important role in maintaining a healthy weight and preventing heart disease.

General recommendations suggest that high GI carbohydrate foods do not need to be avoided, however the aim is to include at least one low GI carbohydrate at each main meal.

Even when you use the GI, you still need to consider how much carbohydrate is in your meals and snacks, as a higher carbohydrate content will start to increase the entire carbohydrate load of the meal or snack.

The following table outlines some examples of low, medium and high GI foods. You can use this information to lower the GI of the entire meal.

GI – Low	**GI value – 55 or less**
Foods: Wholegrain bread, sourdough bread, rolled oats, milk, yoghurt, most fruits, corn, legumes (including kidney beans, chickpeas, lentils), quinoa, wheat-based pasta and noodles (cooked al dente), soba noodles.	
GI – Medium	**GI value – 56-69**
Foods: Basmati rice, Doongara clever rice, sweet potato, wholemeal bread.	
GI – High	**GI value – 70 or more**
Foods: Short grain rice (e.g. jasmine rice), white bread, most potatoes, glucose, sports drink, corn flakes, rice bubbles.	

It is commonly believed that low fibre foods have a high GI and in comparison, high fibre foods have a low GI. However this is not always the case, as it is not only the fibre or the carbohydrate content that determines the GI of a food. Some of the factors influencing the GI include:

- The type of starch found in the food (amylose versus amylopectin) – starches with lower amylose content will have higher GI (e.g. Jasmine rice).
- The type of sugar – disaccharides fructose and lactose will breakdown more slowly compared to glucose.
- The physical state of the food – highly processed carbohydrate foods often have a high GI because the processing makes the starches and the sugars more easily digested. This allows the glucose to be absorbed into the blood stream quickly.
- The fat content – a high fat content delays the digestion of the carbohydrate meaning the glucose will be absorbed into the blood stream more slowly.
- The acidity of the food – adding acid (e.g. lemon or vinegar) to a food will lower the GI.

PROTEIN

Protein is important to support the growth and repair of the cells in our body and keep us full between meals. Protein can be found in:

- Meat, fish and poultry.
- Eggs.
- Legumes.
- Nuts and seeds.
- Dairy products.
- Soy products.

Although the predominant nutrient impacting on post prandial BGLs is carbohydrate, very large servings of protein can eventually be converted to glucose by the liver if the body does not require this excess protein. This means that consuming large amounts of protein may lead to an increase in BGLs a few hours after a meal. For example, consuming really large steak in one sitting may have this impact.

FAT

Unsaturated fats are important for general health and wellbeing and should replace most saturated fats in the diet. The Australian Dietary Guidelines recommend to:

- Limit intake of foods high in saturated fat such as many biscuits, cakes, pastries, pies, processed meats, commercial burgers, pizza, fried foods, potato chips, crisps and other savoury snacks.
- Replace high fat foods which contain predominantly saturated fats such as butter, cream, cooking margarine, coconut and palm oil with foods which contain predominantly polyunsaturated and monounsaturated fats such as oils (including olive, rice bran, sunflower, safflower, canola, grape seed and nut oils), spreads (such as margarine, tahini, and hummus), nuts, seeds, nut butters/pastes and avocado.

Fat does not directly affect BGLs, however some high fat meals may delay the absorption of carbohydrate from the intestine. This may reduce the immediate expected rise in BGLs or create a temporary state of insulin resistance - causing BGLs to rise more than expected later on (e.g. 3-4 hours after a meal).

Monitoring blood glucose levels is the best way to determine how different foods affect your blood glucose levels. With these results you can work with your diabetes team to help you manage BGLs when eating different meals.

EATING OUT

Having diabetes doesn't mean that you have to stay home for every meal. Enjoying a meal out with family and friends is part of life, and an enjoyable one at that!

Having diabetes just means that you will have to consider how much carbohydrate you are eating when you do go out. Using the different tools that we have mentioned will you help you identify the amount of carbohydrate in common foods eaten away from home.

Being good at estimated guesses is a handy tool to have when you are eating at a restaurant or at a friend's house and don't want to pull out your carbohydrate counting tools.

Spending some time at home working out the amount of carbohydrate in different meals and portion sizes will help you estimate a bit better when you are eating out and about. If you're not sure how the meal has impacted on your BGL, check them regularly after to see how good your estimate was. You can then learn from this experience.

Remember, if your BGLs rise above your target range as a result of a meal out, it's not the end of the world. BGLs will always fluctuate and it's more important to look at how things are going overall versus really focusing on individual results.

COELIAC DISEASE

What is it?

Coeliac disease is an autoimmune disease that occurs when the immune system reacts abnormally to gluten. Gluten is the protein found in wheat, oats, barley, rye and triticale (triticale is a cereal grain created by cross fertilisation of wheat and rye).

If people with coeliac disease eat gluten, small bowel damage can occur. This can lead to signs and symptoms such as:

- Poor nutrient absorption resulting in fatigue and certain nutrient deficiencies such as iron deficiency.
- Gastrointestinal symptoms such as abdominal pain, bloating or distention flatulence, diarrhoea, constipation or steatorrhoea (floating, fatty stools).
- Weight loss.
- Bone pain.

With coeliac disease, eating gluten (even the smallest amount) overtime may lead to long-term, serious health complications such as:

- Lymphoma.
- Osteoporosis.
- Infertility in women.

Small bowel damage and the development of long-term complications can occur even if signs and symptoms are not experienced. This is an important reason to be formally tested if you feel there could be any chance that you have coeliac disease.

The development of certain autoimmune diseases may be partly due to particular genes that are inherited. This genetic link means that autoimmune diseases often appear in clusters. The most common autoimmune condition associated with coeliac disease is autoimmune thyroid disease and type 1 diabetes.

Diabetes and coeliac disease

People living with type 1 diabetes have a higher risk of developing coeliac disease, with up to 10% of people with type 1 diabetes estimated to have the condition.

People with type 2 diabetes can develop coeliac disease, however the two conditions are not associated.

Screening for coeliac disease

Screening for coeliac disease should occur at diagnosis of type 1 diabetes in children, adolescents and adults. Some people may test negative for coeliac disease early in their diagnosis, but then positive at a later stage. The need for ongoing screening should be discussed with your diabetes team.

Screening for coeliac disease involves a blood test that screens for certain antibodies. If the blood test results show elevated antibody levels, a biopsy of the small bowel is required to confirm a diagnosis of coeliac disease.

It is important that gluten is not restricted prior to being screened for coeliac disease.

Although some people may have a non-coeliac gluten intolerance, it is always important that if you are experiencing symptoms that you be screened for coeliac disease before excluding any foods from the diet.

Gene testing (HLA genes)

When a diagnosis of coeliac disease is unclear or difficult to determine, gene (HLA) testing can be used. Although a small biopsy is still required to diagnose coeliac disease, a negative test for the HLA DQ2 and HLA DQ8 genes can correctly rule out coeliac disease. This test can be performed on a blood test or cheek (buccal) scraping ordered through your GP.

Managing coeliac disease

A gluten free diet is strictly necessary for people living with coeliac disease. Damage to the intestine can occur if gluten continues to be consumed. This can lead to other serious medical problems even if no symptoms are being experienced.

Some naturally gluten-free foods include rice, quinoa, sago, tapioca, buckwheat, soy, arrowroot, fresh fruit, vegetables, legumes, nuts, meat (except most processed meats), poultry, fish, most dairy foods and fats and oils.

If a food product is labelled 'gluten free' you can be sure that it contains no detectable gluten. Some products will also have the 'crossed grain logo,' which means they are endorsed by Coeliac Australia and are tested to be suitable for people with coeliac disease.

Coeliac Australia

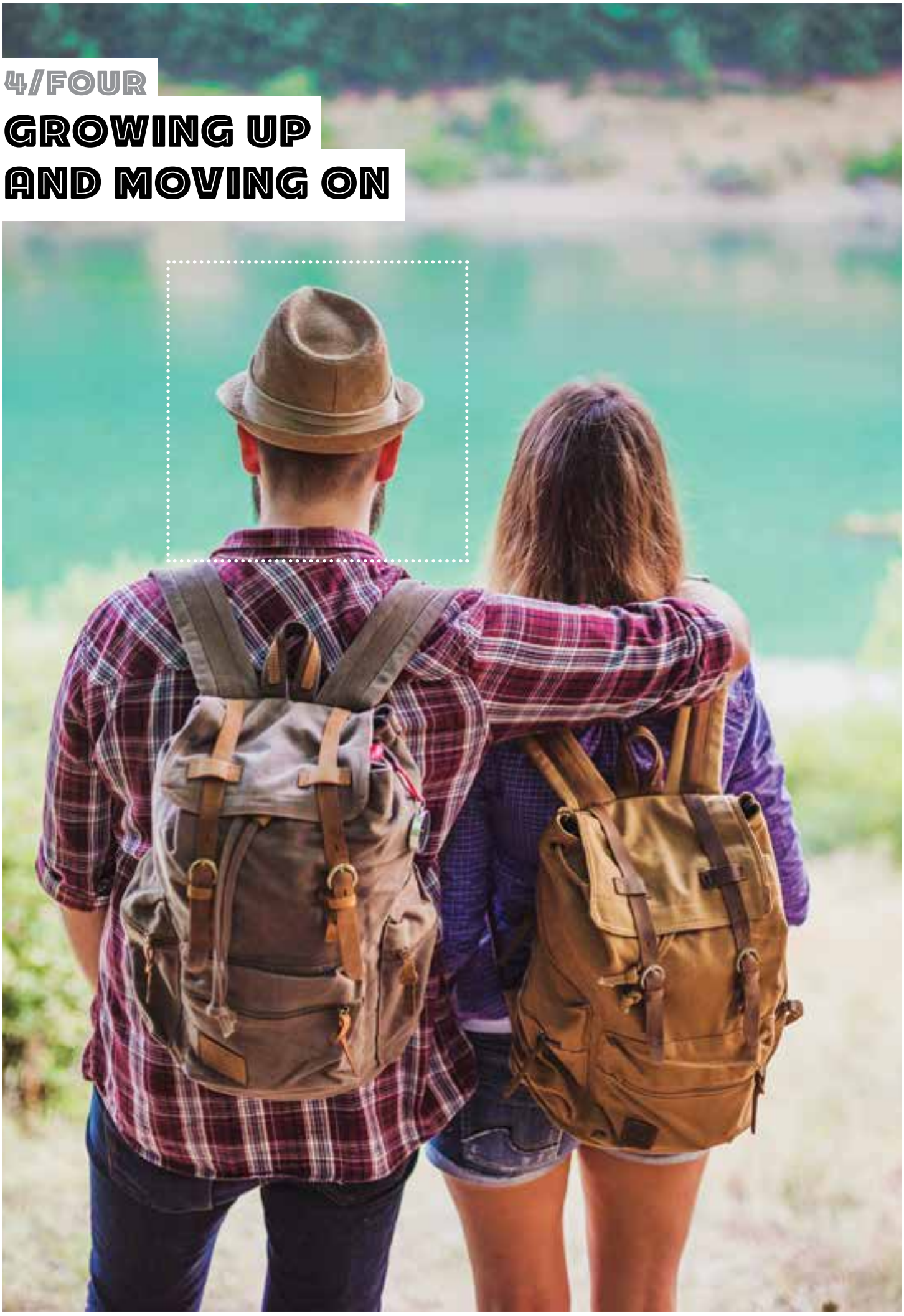
The ingredients list on a food label is an important tool to help highlight if a food is gluten free or not. If any ingredient in a product is derived from wheat, oats, barley or rye then this must be declared on the ingredients list.

If you have been diagnosed with both diabetes and coeliac disease it is important that you make an appointment with an Accredited Practising Dietitian with experience in this area.

Other useful resources can be found here:
www.diabetessa.com.au
www.coeliac.org.au

4/FOUR

GROWING UP AND MOVING ON



MOVING OUT OF HOME

Many young people look forward to becoming more independent and moving out of home. However the reality is, this is a huge step in life. Doing your own house chores, cooking and shopping, plus juggling work, socialising and study is a huge task! If you have diabetes, you may have a little more to think about than your new housemates do.

Your parents or guardians are no longer there to nag you to monitor your BGLs, take your insulin or medications, organise your prescriptions, count your carbohydrates and attend your appointments. It is now up to you!

This may sound wonderful at first, however you may soon realise how helpful your parents or guardians were and what a major role they played in your diabetes management.

This can be very overwhelming and a big life change. However there is a lot of support around to answer any questions and many people with diabetes have been in the same situation.

Consider linking in with some of the online communities and forums to help answer any questions about juggling life and diabetes **(see page 90)**. And remember that your diabetes team is always there to support you.

Don't forget your parents or guardians

Although you may not live with your family anymore, they still care about you and are probably really missing you. Try to let them know regularly that you are ok and remember to ask for their advice when you aren't quite sure.

"I didn't find it too difficult moving out of home as I was pretty independent for a long time and always did all my own cooking and cleaning. I think as I was growing up I was never made to feel that I was any different just because I had type 1 diabetes and I needed to put in just as much effort around the house as my sister (who doesn't have type 1) did. I got a job early on to help out and got my driver's licence as soon as I could so that mum and dad didn't have to drive me around everywhere. The actual moving out process can get quite stressful so just trying to keep on top of your sugars by lots of monitoring is about all you can do I guess."

Claire, aged 27, type 1 diabetes for 26 years

FOR THE FAMILY – SUPPORTING YOUR LOVED ONES

For parents or carers of teenagers or young adults living with diabetes it can be very challenging 'letting go' and encouraging them to start managing their diabetes independently.

A mother's perspective

Growing up I wanted to give my son the tools that would enable him to look after himself as best he could. He knows how much better he feels (and the health benefits) when he eats well, exercises, maintains control of blood glucose levels and gets enough sleep. He also knows how bad he feels if he neglects these things and especially if he has too much alcohol. Ongoing talks with him about food options and the benefits of exercise, blood glucose range and adjusting insulin has enabled him to make his own choices as he is ultimately responsible for himself.

My son is now travelling so I have become a great fan of Facebook. A simple "I am OK-love you" is all I need to know that he is alright. We also use Skype, email or phone.

I don't think you ever really let go of your children whether they have diabetes or not.

From a mother of a young adult living with type 1 diabetes

We asked some young adults with diabetes how they wanted their families to support them as they started to become more independent.

"When I was younger and was starting to become independent I wanted my family to help transition me into managing it all myself but still be there helping me in the background if I needed it."

Beth, aged 23, type 1 diabetes for 17 years

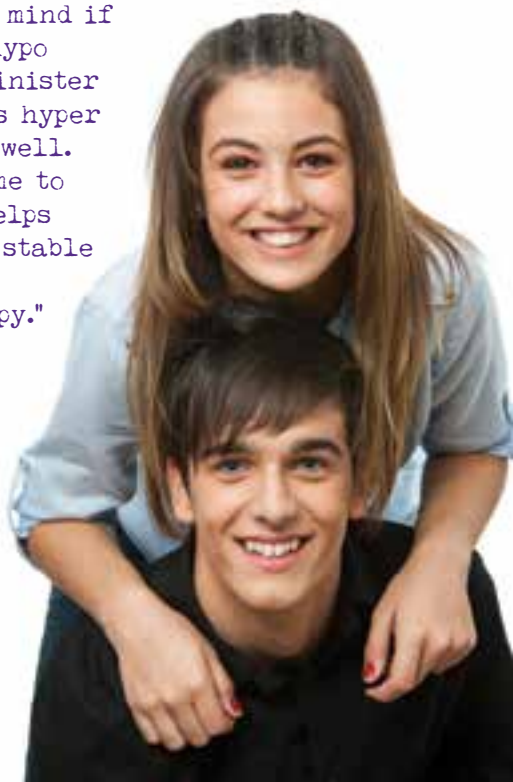
"The biggest support for me from my family growing up was just knowing that they were there if I ever needed anyone to talk to. If I was having a tough time I knew they were there to reassure me that everything was going to be ok and to motivate me to keep putting in 100% effort in looking after myself."

Claire, aged 27, type 1 diabetes for 26 years

A partner's perspective

"I believe I support Claire by providing an ear for her to vent her frustrations and worries when she needs. By being contactable to provide peace of mind if she ever has a hypo and helping administer insulin if she is hyper and not feeling well. Allowing her time to exercise as it helps her sugars stay stable and keeps her healthy and happy."

Jules, partner of Claire who was diagnosed with diabetes when she was 1 year old.



TELLING NEW FRIENDS AND PARTNERS

Throughout life we continually meet new people and form new friendships and romantic relationships. Telling a new friend or partner about your diabetes can be really daunting for some people, and how and when you tell them is totally up to you. Telling your boss and colleagues has been covered in section five but what about the more important relationships like a new partner or friend?

We asked some young adults to tell us their point of view on this topic.

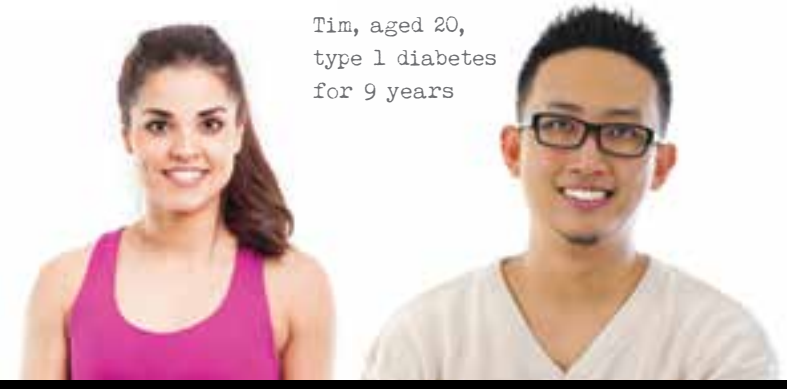
Telling a new partner

"I felt it was important to tell my partner about my diabetes early on in the relationship as it is such a big part of my life. I also didn't want to feel uncomfortable about having to eat at strange times or worrying about if I was going to have a hypo in front of them. I think they would want to know. Their reaction to me telling them about it would also tell me a lot about them! I think my diabetes affects my partner almost as much as it does affect me so they need to know what they're in for!"

Claire, aged 27, type 1 diabetes for 26 years

"As you go into new situations with new people, you quickly decide whether you need to tell anyone about your diabetes."

Tim, aged 20,
type 1 diabetes
for 9 years



Telling new friends

"I have come a long way and have learnt to respect myself and my health and realise that my boluses, BGL testing and hypo treatments are only as awkward as I'm making them out to be. People are generally pretty understanding (and in fact, probably embarrassed themselves) when they learn of what you're really doing under the table."

Mary-Anne, aged 21,
type 1 diabetes for 3 years

"Being honest from the word go. I found that it was just part of the 'getting to know you' conversation and was something interesting about myself. I've never had a bad experience when telling a partner that I have type 1 diabetes."

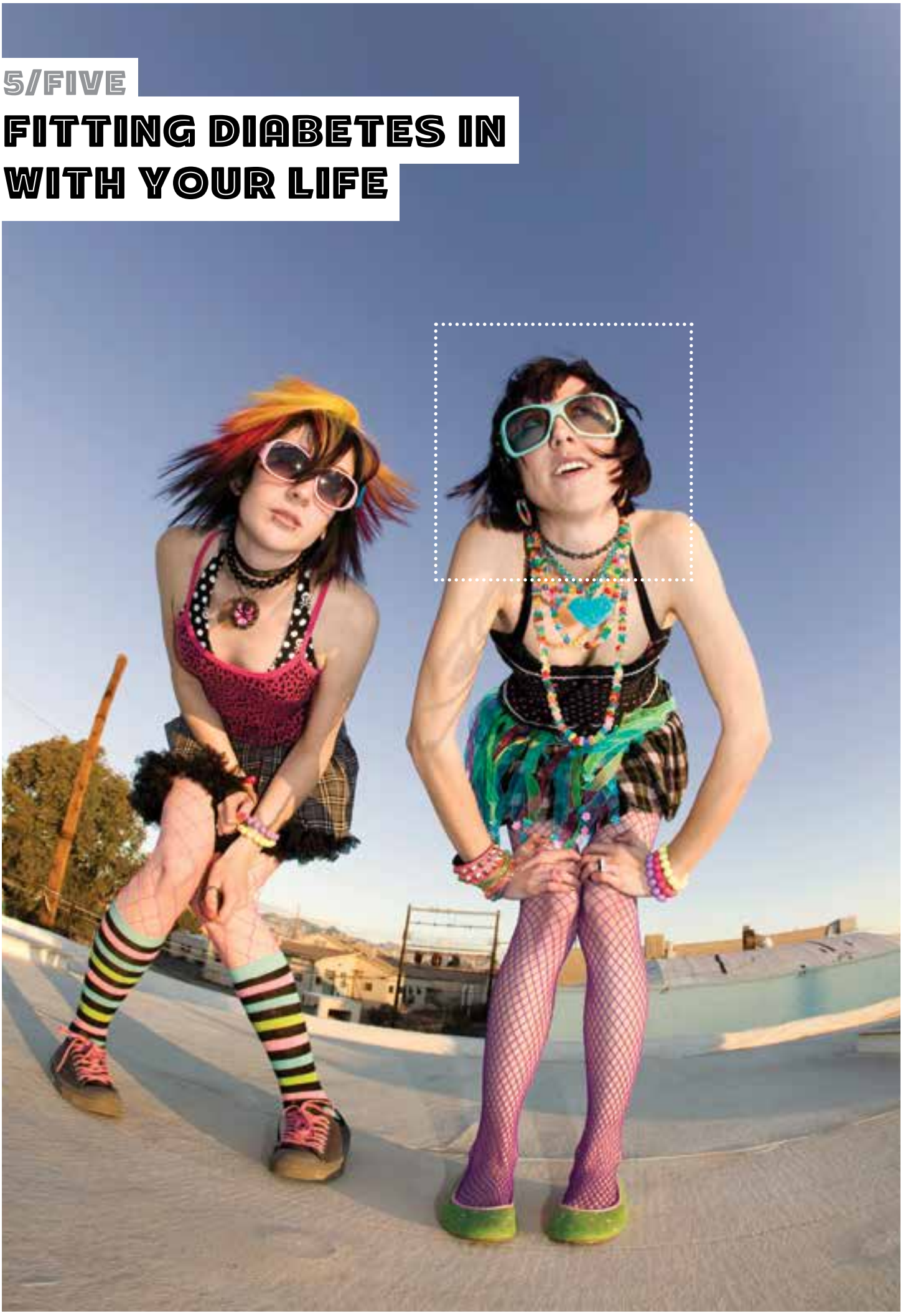
Beth, aged 21,
type 1 diabetes
for 15 years

It's good if the people in your life understand the day-to-day management of diabetes and how to manage hypoglycaemia or help you out when you need them. There are lots of resources available that you can just hand them to explain all of this – especially if you aren't comfortable talking about it yourself.

Check out the Diabetes SA website and online learning platform to assist with this.

5/FIVE

FITTING DIABETES IN WITH YOUR LIFE



THE HIGHS AND LOWS OF EXERCISE AND DIABETES

Exercising regularly is essential for our long term health and well-being. But if you experience fluctuating BGLs during exercise, you may be reluctant to exercise regularly. This section will talk about how diabetes may affect your BGLs and provide some advice to help you to exercise confidently and safely.

High or low BGLs (or BOTH!) may be experienced during and after exercise. Low BGLs can occur when diabetes is managed with insulin or sulphonylureas (an oral diabetes medication).

The impact of exercise on BGLs is different for everyone and will even vary from sport-to-sport; therefore there are no "one size fits all" guidelines to follow to help you manage BGLs during exercise.

Spending time getting to know how your BGLs respond to different types of exercise can help you to deal with any highs or lows. This can be done by:

- Monitoring BGLs before, during and after exercise.
- Working with your diabetes team to implement strategies to manage BGLs during planned activity.

Hypos during exercise (for people on insulin and sulphonylureas)

During exercise, muscle contraction leads to insulin sensitivity and the ability for muscles to easily take up glucose from the bloodstream. This means that having a hypo is common during exercise, especially during longer bouts.

If you are experiencing frequent hypos during or after exercise, you may require less insulin or medications, or more carbohydrate foods, before and / or during exercise. Talk to your diabetes team about the best strategies to take as recommendations will be based on your individual response and goals of exercise (i.e. weight loss versus training for events).

Exercise impacts people differently. The highs and lows can be managed and these should never stop you from participating in sport. There are some very high achieving athletes living with type 1 diabetes.

Delayed hypoglycaemia

Delayed hypoglycaemia (hypoglycaemia that occurs hours after exercise) occurs because the body remains sensitive to insulin for up to 24 hours after exercise. Delayed hypoglycaemia commonly occurs if you have been exercising for a long period of time or if the exercise has involved repeated bouts of high intensity activity. BGLs should be monitored regularly after exercise and if delayed hypoglycaemia occurs, strategies around insulin adjustments and food intake need to be implemented.

Hyperglycaemia during exercise ('the highs')

Hyperglycaemia may occur before and during exercise as anxiety and short, explosive activities such as sprints cause the body to release hormones (ADRENALINE!) that cause BGLs to rise. Not enough insulin on board and insulin resistance during exercise can further impact on hyperglycaemia.

If people with type 1 diabetes have BGLs ≥15mmol/L before exercise they should test for ketones. If ketones are present exercise should be postponed as exercising with ketones can cause a further rise in BGLs and lead to severe illness. For more information on ketones **see page 31.**

"If I was to say one piece of advice it would be don't let having type 1 stop you, talk to your friends, family and doctors and they will always help with any troubles that you have. Talking over things makes everything so much clearer and other people may have new ideas."

Claire, aged 27,
type 1 diabetes for 26 years.

The following hints are a general guide only; please discuss your individual plan with your diabetes team.

Considerations before exercise

Monitor BGLs before exercise, if BGLs are:

- <7mmol/L consume 15g of carbohydrate such as a slice of bread, a muesli bar or a piece of fruit.
- ≤4mmol/L, postpone exercise and treat hypo.
- ≥15mmol/L delay exercise and test for ketones (type 1 only). If ketones are present, delay exercise and normalise BGLs using insulin as directed by your diabetes team.

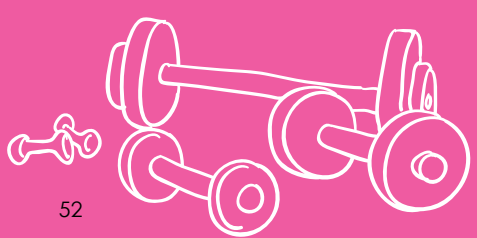
Considerations during exercise

- Monitor BGLs when possible during exercise.
- Carry quick acting carbohydrate such as sports drinks and glucose lollies or gels incase BGLs start to fall.
- Carbohydrate requirements during exercise will vary depending on the type, intensity and duration of exercise.

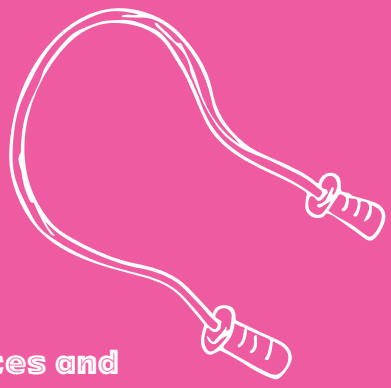
Considerations after exercise

- Monitor BGLs frequently after exercise to monitor for delayed hypoglycaemia.
- Ensure BGLs are >7mmol/L before going to bed.
- Check BGLs at 3am on active days to watch for overnight hypoglycaemia.
- Consume ~10–15g of low GI carbohydrate before bed (e.g. a glass of milk, fruit toast or yoghurt and fruit).

There are ways to manage your insulin pump while participating in high-contact or water sports. Consider if your pump can withstand water contact or if you need to disconnect your insulin pump while participating in sport, however check with your pump manufacturer and diabetes team. It is advisable to go no longer than one or two hours without insulin.



CLAIRE



PERSONAL STORY

About Claire and her love for exercise

I am 27 years old and have had type 1 diabetes for 26 years. I have worked in the fitness industry for over seven years and have always been involved in sport when I was growing up. When I was younger I was heavily involved in gymnastics and I always remember Saturdays at 2:30pm I had to stop and have afternoon tea when everyone else kept training. It was annoying but all the coaches were always very understanding and that helped a lot.

Currently I work at a small privately owned gym and teach classes and personal training. I have always used insulin injections and only recently was tempted to going on an insulin pump to try and help me with sugar level control. My endocrinologist advised against it as it would be a big change and I have no diabetes complications and look after myself as well as I can, so I monitor my BGLs at least six times a day to manage.

For me, I have found over the years that it is almost impossible to have my HbA1c below the recommended 7% without having regular hypos as I do so much exercise. However, myself and my endocrinologist agree that the benefits of regular exercise far outweigh ensuring my HbA1c lowers by a small margin. This is advocated by the fact that I have had no complications or problems from diabetes even though I have had diabetes for many years.

From teaching exercise classes to playing sport

I teach up to 15 different group exercise classes a week that includes boxing, pilates, cycle, aerobics and general circuit classes. Outside of work I also run, participate in boxing classes and play social soccer and basketball.

Managing diabetes and different exercises

Different types of exercise will affect my BGLs differently.

The majority of the classes that I teach and general 'fitness' exercise (e.g. running & boxing) generally drop my BGLs whereas playing sport does the opposite (maybe from the adrenaline response). For the exercise that makes my BGLs drop, I eat some form of carbohydrate very close to doing the exercise to avoid hypoglycaemia.

For the team sport I monitor my BGLs just before the game and react accordingly. If it's under 10mmol/L I usually have something small to eat but if it's over 10 I would generally leave it (this also depends on when I have had my insulin and what I have eaten before).

Things don't always go to plan so to manage my BGLs when exercising I just make sure that I monitor, have some food on hand for whenever I need it and stop if I ever feel strange.

Claire's advice

Always make sure you have some form of carbohydrate on you when exercising so you can treat a hypo straight away. Also listen to your body, if something doesn't feel right it probably isn't so check and see what's going on.

Also if you enjoy any form of exercise whatever it is, don't let having type 1 diabetes stop you. It can be a pain and get in the way at times but the enjoyment and accomplishment I get from doing it far outweighs the inconvenience and risk of exercising with diabetes.

For more information on balancing food, activity and insulin visit: www.diabetessa.com.au

Reference: National evidence-based Clinical Guidelines for Type 1 Diabetes in Children, Adolescents and Adults.

BEING PREPARED FOR TRAVEL

Your travel plans should not be limited because you have diabetes. Whether you dream of heading overseas to back pack, trek or tour, or you wish to stay local, with a little extra planning you can enjoy your dream destination without diabetes getting in the way.

Give yourself time to get organised before you go on any trip. Some situations you need to be prepared for; including lost or damaged supplies and luggage, needing to stay away for a longer time than expected, varying climates, illness and hypoglycaemia. If you are well prepared, even unexpected situations can be easily managed.

Preparing for your travels does depend on your diabetes management regimen, how you are travelling and whether you are staying local or travelling overseas. The following information will highlight some aspects to consider before you leave and whilst you're away.

Before you leave

Organise an appointment with your GP or endocrinologist and your diabetes educator well in advance before you leave. This appointment should allow time to review your diabetes management and organise the following:

- Prescriptions for your medications and insulin making sure you can access more than what you will require while you are away.
- Discuss the need for adjusting the time you take your insulin and medications if you will be experiencing a change in time zones.
- Review your sick day management plan.
- Organise a letter from your doctor outlining your full name, the type of diabetes that you have, what medications you take and all of the equipment that you require to manage your diabetes. Make multiple copies as this may be required at customs.
- There are restrictions on the amount of PBS medicine that you can take overseas so talk to your doctor before you leave.
  You can also find out more information here:
  www.humanservices.gov.au/customer/services/medicare/travelling-overseas-pbs-medicine

Other considerations before you leave

- Organise travel insurance making sure the policy covers pre-existing conditions such as diabetes, the places you will visit and the activities that you will do.
- Find out the temperature of your destination and organise the best way to carry and store your insulin and supplies. If you are going to freezing or very cold climates there is no product available that can stop insulin from freezing. The safest thing is to keep the insulin close to your body to prevent it from freezing.
- Find out if you need any vaccinations. Discuss this with your doctor and visit:
  www.traveldoctor.com.au
- Investigate health care options in other countries in case you become unwell or need some advice. Some websites to help you include:
  www.humanservices.gov.au/customer/services/medicare/reciprocal-health-care-agreements
  and
  www.iamat.org

While you are away

- Experiencing new foods is an important part of travelling and you shouldn't have to miss out. If you are heading overseas do a bit of research around the carbohydrate content of typical foods to help you manage the amount of carbohydrate you eat or match your insulin accordingly. There are different websites and smart phone apps to help you with carbohydrate counting.
- Carry a list of your medications, dosages and copies of your prescriptions.
- If necessary, have the statement "I have diabetes," and a list of your prescriptions translated into the languages of the countries you are visiting.

- Carry contact details of your endocrinologist, GP, diabetes educator and insulin pump company (if relevant).
- Always carry more medication and diabetes supplies such as a spare BGL meter, test strips and lancet than you will need in case your medication or supplies get lost or are damaged. The cost of diabetes supplies can be very expensive in other countries.
- Keep your medication and insulin in the original packaging whilst you are travelling.
- Monitor BGLs whilst you are travelling to see how different types of food and changes in your exercise schedule can impact on your management.
- Reduce your risk of gastroenteritis by avoiding contaminated food or water and using bottled or boiled water, even to brush your teeth! If you will not have access to bottled water during your travels take some water purification tablets. Gastroenteritis can lead to unstable blood glucose levels and the risk of diabetic ketoacidosis in people with type 1 diabetes.
- If you are at risk of hypoglycaemia (if you are on insulin or sulphonylureas) be prepared with hypo treatment (**see page 28** for more information on hypoglycaemia). Travelling can be unpredictable and you may experience hypoglycaemia due to a delay in meals, different than usual carbohydrate quantities, increased physical activity or if you have been vomiting and unable to tolerate carbohydrates foods.

Travelling by car

If you plan to travel by car check out the driving information on **page 72.**

Travelling by air

- Have a copy of your doctor's letter and NDSS card ready to show to customs officers. If you have any problems with a customs officer ask for the supervisor who is employed by DOTAR (Department of Infrastructure, Transport, Regional Development and Local Government).
- Take all of your diabetes supplies and medication in your carry on luggage and split the spare supplies amongst the people who you are travelling with. Insulin will freeze if it is in the underneath luggage compartment.
- Monitor your BGLs regularly during your flight as there are many factors that may affect them such as change in time zones, different types and amounts of foods, sitting for long periods, altitude and any stress from travelling.
- There is no need to order a special 'diabetic' menu for your flight.
- Take some extra carbohydrate containing snacks with you on the plane if you are at risk of hypoglycaemia. Snacks may include dried fruit, muesli bars or crackers.
- Stand up and walk around as often as possible to increase circulation, keep BGLs under control and prevent clots.
- If you are wearing a continuous blood glucose monitor you must turn it off for take off and landing, just like other electronic devices.
- If you wear an insulin pump change your pump's clock when you get to your destination.
- Drink plenty of water and limit alcohol intake.

Watch our online program to learn more about travelling with diabetes www.onlinelearning.diabetessa.com.au

For more written information on travelling with diabetes and a checklist for people with type 1 diabetes please visit:

www.diabetessa.com.au and www.ndss.com.au

MARK

PERSONAL STORY

About Mark

Mark is 31 years old, works as a physiotherapist and is a seasoned traveller. Mark has had diabetes "live with him" for 19 years and currently administers insulin via an insulin pump.

When Mark was 22 he set off on a 2 year European adventure on a work visa. He certainly made the most of this time and his new found freedom by exploring many countries including England, Scotland, France, Spain, Germany, Norway, Sweden, Portugal, Italy, Malta, Croatia, Hungary, Belgium, Netherlands, Liechtenstein, Luxembourg, Switzerland, Austria, Monaco, Czech Republic, Slovakia, Poland and Turkey!

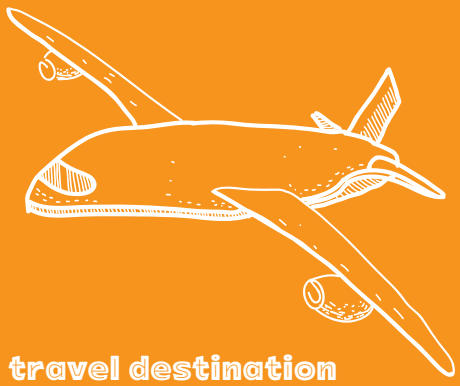
Getting off the beaten track

Since his first adventure at a very young age he has had the opportunity to back pack through South America, North America, Asia and Northern Africa on a couple of different big trips from 2009 until 2012.

His favourite part of travelling is 'getting off the beaten track' especially in continents like South America and Asia. He describes these countries as offering wonderful countryside and undiscovered little villages that home incredibly genuine, friendly and welcoming people. These people are usually very poor. Mark believes that these experiences make you realise that you can live a very simple life but also be very happy.

Enjoying active adventures

During his travels Mark has trekked the Everest base camp in Nepal, Machu Picchu in Peru and an amazing 6000m in the Andes in Bolivia. He has surfed in Norway and the Philippines, snowboarded in Canada, USA, Norway and Switzerland and sailed in Croatia. He has also been deep sea diving in Columbia and mountain scrambling on Volcano's in Peru and Columbia!



His favourite travel destination

This is a hard one for Mark to answer, as you can imagine. He loves Columbia for its incredible variety (stunning Caribbean coast, amazon jungle/basin, Andes mountains, huge volcanos, coffee fiends and amazing people), and Nepal for its sheer vastness and beauty of the Himalayas and simple living.

On the whole for continents he loves South America for the pure variety of landscapes, amazing cultures and people... plus the food!

Mark's advice for those keen travellers

"Just do it!! As long as you are prepared when you go, even with major unexpected circumstances you should be fine with your diabetes control and supplies."

How Mark prepares for his travels

When preparing for a trip Mark believes that the most important thing without doubt is thorough preparation before you head off. Before he heads off overseas he always follows this simple checklist on the right:

TRAVEL

Mark's checklist for travelling

1. Very simply, take at least double everything you think you may need (2 finger prickers, double pump consumables, batteries, double the insulin etc.)

2. Have back up for your insulin delivery: I take a couple of insulin pens and supplies in case something unforeseen happens with my pump which has happened before. I had one pick pocketed (somehow!?) at a party in Brazil.

3. When travelling on planes take all of your insulin on board with you to avoid the insulin freezing or getting too cold in the cargo section.

4. When travelling I always keep my diabetes gear separated between my main travel pack/locker and day-pack so that if one bag gets stolen or lost you always have a full supply elsewhere.

5. Use your insulin / diabetes consumables evenly between your two supplies incase you lose one lot and the other is very low.

6. I am aware it is recommended to keep your insulin refrigerated whenever possible and I agree with this, but I want to share that on two trips over 12 months I've kept my insulin unrefrigerated (due mainly to no regular availability) in insulated lunch boxes from the supermarket and insulin efficiency has not changed at all. You still need to be aware of avoiding extreme temperatures at both ends of the spectrum of course.

7. Also be aware that if you are going to be in England for an extended amount of time, you can register with a doctor there and through the NHS get free insulin and diabetes consumables.

8. Because my pump is Medtronic, I also have a couple of cards with contact offices around the world and their phone numbers, and also carry the email of my Australian contact person.

STUDYING AND DIABETES

Often studying comes with new found friendship groups, new routines, late nights, parties and potentially more stress! This may mean that a new routine with your diabetes management needs to be put in place, to make sure you can be an effective student and not miss out on all of the fun.

"University is very different to school. You aren't always with your friends, you may only be with the same class for a short period of time and times don't exactly match up with eating and some insulin regimes. I was lucky to be on a pump and like multiple daily injection regimens it gave me a little bit more flexibility with the timing of my eating. Uni is all about life and being out in the real world so it's great if you can fit diabetes in with your life."

Beth, aged 21, type 1 diabetes for 15 years

Dealing with stress

The stress of studying, finishing assignments and sitting exams can upset your BGLs. Stress generally makes BGLs rise, however if you find that you are snacking a lot whilst studying and not doing much activity, your BGLs are likely to rise even higher.

In comparison, if the stress of studying and finishing assignments reduces your appetite and you are on insulin or take sulphonylureas you may be at risk of more hypos.

Monitoring your BGLs regularly will help you to understand how a new regimen, exam periods or late nights of completing assignments is impacting on your BGLs. Having a good understanding will help you to implement strategies to manage your BGLs as best as you can through these times. Maintaining BGLs as close to your target range as possible will help you to concentrate and give you the confidence when approaching exams.

Talk to your diabetes team if you need specific advice about this.

For more information on managing stress and diabetes visit: www.diabetessa.com.au

"Just like I was in my school days I was a stress head at uni and this affected my BGLs conveniently when I didn't have time to think about it. Just like everyone with diabetes at different stages of life you have to pretty much stop time, manage whatever is happening with your diabetes, recover and start time again. Yes it sucks that you have to do all these extra things and it can stop what you are doing, but in the end we are the more resilient people. We are the ones who bounce back from the small things in life and we are the ones who are empowered within ourselves."

Beth, aged 21, type 1 diabetes for 15 years

Telling lecturers

You may be wondering if you need to tell your lectures about your diabetes and how you should tell them. Like all things diabetes, how you approach this situation depends on you and what you are comfortable with.

Telling your lecturers and tutors about your diabetes will help if you need to:

- Monitor your BGLs during a lecture or an exam.
- Take hypo treatment and extra snacks into lectures and exams.

If your lecturers and tutors are aware of your diabetes it might be possible to have a bit of extra time during an exam in case you need to treat a hypo or if you need more toilet breaks because your BGLs have been running a bit high due to nerves and stress.

"By letting your lecturers, tutor and close friends know about your diabetes you are ensuring your own safety and wellbeing. They will also be aware why you might be sneaking out of a lecture or an exam, which will be no big deal if they know. Being discreet by sending your lecturer or tutor an email to let them know that you have diabetes can be easily done without attracting too much attention."

Beth, aged 21, type 1 diabetes for 15 years

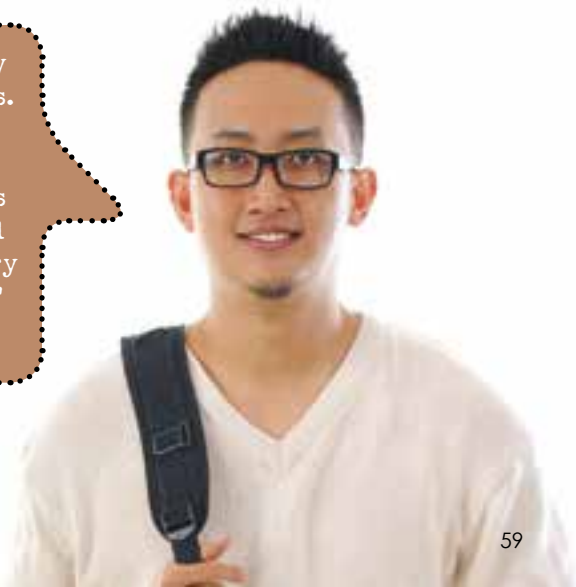
Tips for dealing with stress and getting through tertiary education

- Try and take some time out to do some exercise each day.
- Be prepared with healthy snacks and meals to make sure you are eating nourishing meals to provide you with the energy required to concentrate and get through long days and nights. Snacks such as fruit, yoghurt, milk drinks, wholegrain crisp bread, sushi rolls, mini frittatas, wholegrain sandwiches, nut and seed bars and unsalted nuts are helpful.
- Check BGLs regularly to help you to understand how stress and new regimens impact on your BGLs.
- Before you enter an exam, monitor your BGLs and have a low GI snack if you are on the lower side and remember to put your meter on silent.
- If you are nervous and need to eat to prevent a hypo try a liquid meal or carbohydrate containing fluid to get you through.
- If your lecturers or tutors know that you have diabetes just remind them before an exam so they understand why you may need to monitor your BGLs, treat a hypo or go to the toilet during the exam.
- If you're moving to a different area to go to university, try to find a new GP in the area. Make sure you take plenty of medications and insulin or have prescriptions ready in case there's any delay in seeing your new GP.
- Consider if you will stay with your original diabetes team or if you want to look for a new diabetes team closer to where you will be living and going to university. Talk to your current diabetes team for advice.

Telling new friends

"As you go into new situations with new people, you quickly decide whether you need to tell anyone about your diabetes. I have been at university now for two years and only one lecturer knows that I have diabetes. I also have a close friend who is studying the same course as me who knows that I have diabetes. I have decided that there is no need to alert the university. This again was my choice and every person needs to make decisions like those for themselves."

Tim, aged 20, type 1 diabetes for 9 years



MANAGING DIABETES IN THE WORKPLACE

You should be considered for almost any job that you wish, without diabetes causing too many problems. However there are some jobs where diabetes may impact on the requirements of the job.

The following information will cover many frequently asked questions about applying for jobs, telling your current and potential employer about your diabetes, discrimination in the workplace, your rights and responsibilities, your employers rights and responsibilities and staying safe in the workplace.

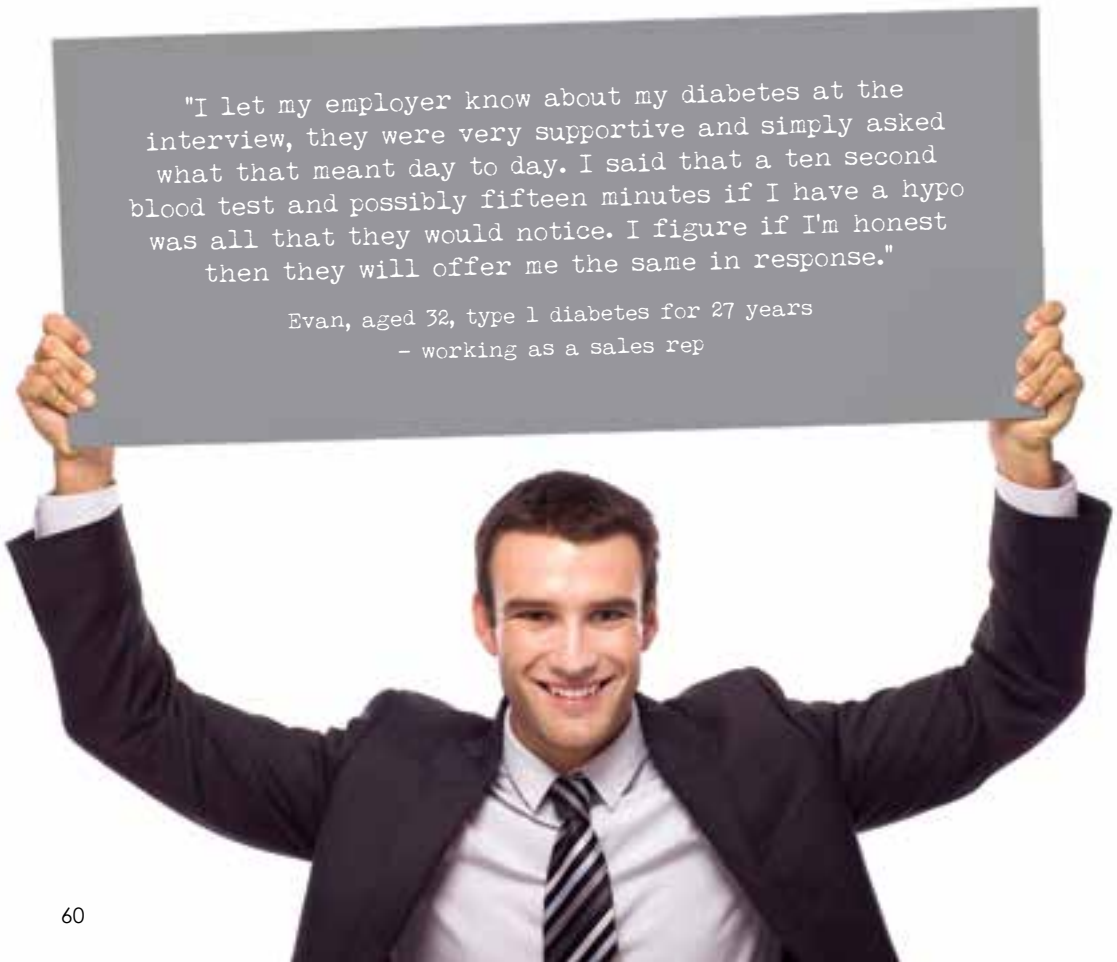
Applying for a job

When applying for any job it is important to consider if you are suitable for the position. To make this assessment, request a copy of the job specification and position description and determine if you are able to carry out all of the required duties.

In regards to your diabetes, additional things to think about when considering applying for a job include:

- Assess whether or not your diabetes could prevent you from completing any of the roles and responsibilities.
- Is there a potential that hypoglycaemia, hyperglycaemia and/or diabetes complications could put you, colleagues, the general public, the environment or the workplace at risk?
- How will diabetes impact on your safety in the workplace?
- How will you manage hypoglycaemia or hyperglycaemia at work?
- Will the hours of work cause problems with your diabetes management? Some work schedules can make it difficult (although not impossible) for people with diabetes to manage their blood glucose levels.
- Will you need to travel for work and what will you need to consider to manage your diabetes?

If you have concerns about diabetes impacting on any job requirements, contact the human resources department or seek further advice from a member of your diabetes team.



Telling your employer

Telling your employer that you have diabetes is often referred to as disclosure. People with diabetes often ask whether they should, or have to disclose their diabetes to potential or current employers.

For most jobs it is not compulsory to tell your employer that you have diabetes and it is your personal choice. It is still recommended that you do so, to ensure the following:

- That you are eligible for workers compensation.
- To ensure that all insurance requirements can be filled – if you have an accident at work as a result of your diabetes and you had not disclosed this, you may not be entitled to an insurance claim.
- To ensure your safety in the workplace.
- To ensure your colleague's safety in the workplace.
- To make allowances for you including extra breaks and flexibility for appointments.

You should also consider how your diabetes may impact directly on your duties and safety in the workplace when decided whether to disclose or not.

You will find that most employers will be very understanding and happy to accommodate your needs. However if you are not sure about disclosing, discuss this with your endocrinologist, treating doctor or your diabetes educator.

If you are not sure whether to disclose your diabetes at an interview or to a current employer, seek advice from a member of your diabetes team.

"About two years ago I started part-time work. I was worried that if I told my employer that I had diabetes they wouldn't want to employ me. For that reason, I chose to keep it a secret. A few months later I was having a bad day at work where my insulin pump stopped working and my blood glucose levels went very high. I had no choice but to tell my boss what was going on. She didn't know much about type 1 diabetes, however the very next day she told me that she had spent the night researching diabetes and was willing to help me when required. Since this occurred, living with diabetes at work has become much easier. The team that I work with all know that I have diabetes, but they also know that things rarely go wrong because I have good control over my health."

Tim, aged 20, type 1 diabetes for 9 years – working in a supermarket and studying to become a teacher.

Mandatory disclosure

If you are asked to identify a medical condition on an application form or during a job interview you should always state that you have diabetes. It is good to be prepared to discuss how you can manage diabetes in the workplace. This will show potential employers that you can still be a healthy and productive employee. For example:

- Emphasise the positive aspects of having diabetes such as the fact that you follow a healthy lifestyle, have regular medical checks and follow routines.
- Explain how you can adjust your insulin, medications and/or eating routine to accommodate the work involved.
- Mention that you may need occasional short breaks to monitor your blood glucose levels, have a snack, take medications or administer insulin – explain that these things take limited time out of your work day and help you stay on track with your diabetes management.
- Offer to answer any questions about diabetes.

Not only will some jobs require you to disclose that you have diabetes on application, if hypoglycaemia, hyperglycaemia and/or diabetes complications could put yourself, colleagues, the general public, the environment or the workplace at risk you will likely have to prove your fitness to work through a medical assessment. This will usually involve a letter from your diabetes specialist or endocrinologist regarding your diabetes management.

When applying for these jobs most will be assessed on a case-by-case basis. If you are interested in a particular job contact the human resources, recruitment and/or medical advisory staff to determine if there are any restrictions in place for people with diabetes.

If you are employed in one of these jobs certain measures may be put in place to ensure workplace safety.

Jobs requiring disclosure and medical assessment

Please note that this information was true at the time of the development of this resource. Always enquire to check out updated policies.

The defence force

You must disclose that you have diabetes on your application for the defence force. This will be directed to the Medical Officer at the time of testing, as all medical issues are considered on a case-by-case basis.

Passenger transport (e.g. taxi or bus)

It is likely that you will have to disclose that you have diabetes on your application for jobs that require passenger transport. If you take medications and/or insulin to manage your diabetes you are legally required to inform the Driving Licence Authority (DLA) of your diabetes and determine your fitness to drive. This is to ensure that all insurance requirements can be fulfilled and that the standards for driving are met.

You can find out more about driving with diabetes on **page 72.**

Police, fire and ambulance services

Entrance requirements for jobs with these services vary across Australian states and territories. Most applications will be assessed on a case-by-case basis. For any questions contact the relevant human resources department.

"I feel that not being afraid to share my diabetes with those around me, including those people I work with, having a sense of humour, understanding that it is normal in diabetes to have some low and high blood glucose levels has helped me to cope with the demands of managing this condition."

Rachel, aged 44, type 1 diabetes for 42 years – working as a Registered Nurse.

Pilot

If you are a pilot and develop diabetes or have changes made to your management (for example, change of medication) you must ground yourself and await clearance from Civil Aviation Safety Authority (CASA). Medical certification to continue to fly is assessed on a case-by-case basis with the consideration of current management and the presence of complications. The ongoing requirements to fly include ongoing reports from your treating doctor and policies around blood glucose monitoring and BGLs.

If you wish to become a pilot you must declare the type of your diabetes you have and provide as much information in relation to diabetes as possible. Applications will be assessed on a case-by-case basis considering current management (HbA1c, record of blood glucose levels and hypoglycaemic episodes), hypoglycaemia awareness, presence of complications and ability to self-monitor BGLs. You will also require regular reports from your treating doctor and have to follow blood glucose monitoring requirements in order to fly.

For further information contact CASA: www.casa.gov.au 131 757

Operating heavy machinery

If you are required to operate heavy machinery as part of your job you should have your diabetes management and complications status reviewed by your endocrinologist or treating doctor. Safe operation of machinery can be affected by low or high blood glucose levels, complications of diabetes and some prescription medications. If you are at risk of hypoglycaemia, it is important that you take regular food breaks and monitor your blood glucose levels regularly.

For more information on telling your employer on application for a job visit:

www.diabetesaustralia.com.au/en/Living-with-Diabetes/Everyday-Life/Diabetes--Work/

"As a requirement of the Work Health and Safety (WHS) Act, it was important that I shared my diabetes with the management team. Although I told the management staff, that was ALL I did, as I didn't want to make a fuss and be treated differently to other employees. I made the choice to keep my diabetes separate and to manage it when necessary, rather than make a big scene. As I have now been present in the work force for some time, I now share more about my diabetes with colleagues, as I feel comfortable in the workplace environment."

Liam, aged 17, type 1 diabetes for 14 years – working in a supermarket and completing year 12 at high school.

Colleagues may be interested in the workplace flip chart available from Diabetes SA.

Your rights and responsibilities in the workplace

Your rights

- Access to regular breaks (in addition to the minimum award provisions) for snacks, taking medications/ administering insulin and blood glucose monitoring.
- To keep your diabetes supplies and hypo treatment with you at your work station so it is there when you need it (remember to restock it regularly).
- To store medications and insulin in an appropriate place.
- Privacy for blood glucose monitoring, taking medications and administering insulin.
- Confidentiality about your medical history.

Your responsibilities

- To maintain your health and wellbeing in the workplace, including hypoglycaemia management.
- Disposal of sharps in a certified sharps container – **see page 65.**
- Provide a hypo kit for your workplace – **see page 68.**
- Provide a letter from your endocrinologist regarding your diabetes management if requested by your employer.
- Not to put others at risk.

Although it is advisable to wear or carry some form of medical identification, it is a personal choice. Wearing or carrying medical identification may be helpful if you have not disclosed your diabetes to your colleagues.

Funds for workplace adjustments

The federal government provides funds for employers to help with costs that may be associated with workplace adjustments under the workplace modification scheme as well as job access advisors.

For more information on workplace adjustments visit: http://jobaccess.gov.au and search for workplace modifications and adjustments.

Disposal of sharps in the workplace

A sharp is any device that is used to penetrate the skin including a finger pricking device or lancet, insulin syringes, pen needles used with insulin pens and needles used to insert insulin pump sets. Once any of these sharps have been used they should be disposed of in a sharps container.

A sharps container is a non-reusable container that is rigid, leak proof, puncture resistant and shatter proof with a tight fitting lid. A sharps container should comply with Australian Standards. Once a sharps container is full it must be sealed and disposed of in an approved sharps/medical waste bin. Contact your local council for your nearest location.

Sharps containers are yellow in colour and are clearly labelled as seen in the image.

Your employer's rights and responsibilities in the workplace

Rights

- To determine if you are suitable for a job based on merit.
- To control, direct and monitor work performance.
- To give legitimate comment on performance or work related behaviour.
- To request a medical report from your endocrinologist or treating doctor to determine your fitness and safety to undergo required tasks.

Responsibilities

- To ensure the health and safety of all employees in the workplace.
- To ensure confidentiality and respect for all employees in the workplace.
- To prevent discrimination in the workplace.
- To provide reasonable workplace adjustments within the financial capacity of the business. Workplace adjustments may include:
  - Accommodating (including a clean and private location) your need for extra breaks for snacks, blood glucose monitoring, hypoglycaemia treatment, taking medications or administering insulin.
  - Flexibility to accommodate your medical appointments.
  - Access to enlarged computer screens if you have impaired vision.
  - Access to safe sharps disposal or medical waste.
  - Access to a first aid kit and emergency hypoglycaemia prevention and treatment provisions at your work station.

DISCRIMINATION IN THE WORKPLACE

What is discrimination?

Direct discrimination is treating a person unfairly because of a particular personal characteristic or because they belong to a certain group. Diabetes is categorised as a disability within the Equal Employment Opportunity Commission and it is against the law to discriminate against a person with a disability in the workplace.

Discrimination can also be indirect. Indirect discrimination may appear to be equal but is unfair on some people because of an attribute such as a disability.

Discrimination may include:

- Refusing to employ you after a medical examination identifies that you have diabetes.
- Unnecessarily or unfairly limiting your job responsibilities because you have diabetes.
- Unwillingness to accommodate your need for blood glucose monitoring.
- Unwillingness to provide a clean and private location for you to take medications or administer insulin.

If your employer questions your ability to perform necessary tasks in the workplace you may be required to provide a letter from your endocrinologist or treating doctor declaring your fitness to carry out jobs safely. Your employer does have the right to request this information.

Exemptions from discrimination

An employer can discriminate if:

- You genuinely cannot perform the requirements of the job without endangering yourself or others.
- You cannot respond adequately to emergency situations reasonably anticipated in connection with the work required.
- You are unable to carry out the inherent requirements of the job.
- In order to carry out the inherent requirements of the job your employer would have to provide facilities or services in the workplace that would impose unjustifiable hardship.

Further advice

The following organisations can advise you on your rights and responsibilities in the workplace and provide advice around discrimination.

Equal Opportunity Commission of SA

Equal Opportunity Commission of SA provides you with up-to-date and accurate information about Equal Opportunity and Human Rights Laws in SA.

Telephone: (08) 8207 1977
www.eoc.sa.gov.au

Fair Work Commission South Australian Office

Level 6, Riverside Centre, North Terrace,
Adelaide, 5000
PO Box 8072, Station Arcade, Adelaide, 5000
Out of hours emergency: 0419 563 601
Email: adelaide@fwc.gov.au

Telephone: (08) 8308 9863
www.fwc.gov.au

Fair Work Ombudsman

Fair Work Ombudsman provides information and advice about Australia's workplace rights and rules.

Telephone: 131394
www.fairwork.gov.au

Legal Services Commission of SA

The commission provides free legal advice for minor assistance through its telephone advice line and face-to-face appointments. The commission receives some funding by the Commonwealth and State Governments and has a central office in Adelaide and offices in metropolitan and regional SA.

The free legal helpline 1300 366 424
www.lsc.sa.gov.au

South Australian Central Community Legal Service

Central Community Legal Service is a community organisation set up to provide free legal information, advice, referral and assistance.

2/59 Main North Rd, Medindie Gardens SA 5081
PO Box 962, Prospect East, South Australia, 5082

Ph: (08) 8342 1800
www.saccls.org.au

"I learnt early on from my diagnosis that if you have a supportive diabetes team to assist you, the burden is shared and your confidence improves. I always know where to get help, and seeking advice helps me to stay up-to-date and feel well supported. This has helped me discuss diabetes with work colleagues and deal with any stigma that may arise. I look forward to many more years of a fulfilling work life."

Sharon, aged 48, type 2 diabetes for 26 years – working as a Registered Nurse.

Managing diabetes in the workplace

You may require some advice around managing diabetes in the workplace. Your diabetes team can advise you around blood glucose monitoring and when this may be required, managing insulin and medications, administering insulin and managing hypoglycaemia and hyperglycaemia in the workplace.

Blood glucose monitoring

You will more than likely need to monitor your blood glucose levels during work hours. This will not impact on daily work tasks.

It is up to you whether you monitor your blood glucose levels in your work space or do this in a private location.

You should be given privacy and respect when monitoring your blood glucose levels at work. Your employer cannot legally ask to see your blood glucose levels or diary and should not ever comment on your blood glucose levels.

Administering insulin or taking medication

You may need to take medication or administer insulin during work hours. Although you may be able to manage this independently, you may require:

- A safe and suitable storage place for insulin or medications.
- Access to a fridge to store spare insulin.
- A private location to administer insulin.
- Access to a sharps container.

Discussing your requirements with your employer will ensure that all of your needs are met, and that you feel comfortable taking medications and administering insulin in the workplace.

It is up to you whether you take medications or administer insulin in your work space or do this in a private location.

For more information about managing medications at work visit: www.jobaccess.gov.au and search medication at work.

Managing hypoglycaemia

If you are experiencing hypoglycaemia at work you will need to:

1. Stop work immediately.

2. Monitor blood glucose levels as often as needed.

3. Take treatment as required (covered below).

4. Resume work tasks once your blood glucose level rises above 4mmol/L and you have made a full recovery. If you are driving, your blood glucose level needs to be above 5mmol/L for 30 minutes before you can resume driving, as explained on **page 72**.

The impact of hypoglycaemia can take 30 minutes or longer to resolve. You should not resume your work until this happens.

For more information about hypoglycaemia **see page 27.**

Treatment of severe hypoglycaemia

If your blood glucose level continues to fall your brain function can deteriorate. When BGLs drop below a certain level this is considered severe hypoglycaemia, which can lead to unconsciousness, coma or seizures. Although this is rare, it is important for your colleagues and employer to understand how to manage this situation.

If you are ever unconscious, convulsing or unable to swallow you should NEVER be given food or fluids. The only way to manage severe hypoglycaemia is to inject glucose into the vein (by a doctor or paramedic) or an injection of Glucagon. Your colleagues and employer should call 000 immediately and perform first aid:

- Check your airway and breathing.
- Lie you on one side and protect you from any harm.
- Dial 000 to call for an ambulance and inform the operator that there is a diabetes emergency.

A hypo kit

If you are at risk of hypoglycaemia it is your responsibility to provide a 'hypo kit' for the workplace. You and your colleagues have the right to have access to this at all times. A hypo kit may include:

- A hypoglycaemia emergency information sheet – contact Diabetes SA for a diabetes emergency information sheet.
- Quick-acting carbohydrate such jelly beans, regular soft drink or glucose tablets.
- Long-acting carbohydrate such as muesli bars or small packets of dry biscuits or crackers.

Make sure the contents of your hypo kit are always in-date.

Glucagon

Glucagon is a hormone that releases stored glucose from the liver into the blood stream. This results in a rise in blood glucose levels within 10 minutes. Glucagon is given by an injection into the muscle. The hormone will work for approximately 30 minutes, which should allow you to regain the ability to consume some carbohydrate via food or drinks by mouth to manage hypoglycaemia. People are required to be trained to administer glucagon.

Hypoglycaemia unawareness in the workplace

If you experience hypoglycaemia unawareness it is important to consider if it is safe to continue in your current role and complete your required workplace duties. It is recommended that you discuss this with your endocrinologist or treating doctor.

If hypoglycaemia unawareness is impacting on your ability to complete your duties as part of your job description you may be able to discuss with your employer:

- Alternative roles and responsibilities that you could undertake within your place of employment while you are working with your endocrinologist or treating doctor to regain your hypoglycaemia awareness.
- An option to take some sick leave while you work with your endocrinologist or treating doctor to regain your hypoglycaemia awareness.

Hypoglycaemia safety risk in the workplace

The safety risk of experiencing hypoglycaemia at work depends on the type of work that you do. If you are operating heavy machinery or driving, the risk is greater compared to if you sit at a desk to complete your duties.

If you are at risk of hypoglycaemia, it is important that you take regular food breaks and monitor your blood glucose levels regularly.

"I have worked in the fitness industry for over seven years and I currently teach up to 15 different group exercise classes a week which include boxing, pilates, cycle, aerobics and general circuit classes. Different types of exercise will affect my blood glucose levels differently. To manage at work I just make sure that I monitor my blood glucose levels regularly, have some food on hand for whenever I need it, and stop if I ever feel that I need to."

Claire, aged 27, type 1 diabetes for 26 years – working as a personal trainer

Regular hypoglycaemia

If you are experiencing regular hypoglycaemia which is affecting your ability to carry out regular work-place responsibilities, your employer can request that you have an assessment from your endocrinologist to determine your fitness to carry out duties as described in your position description.

If you work in a safety sensitive area, personal/sick leave or changes to your roles and responsibilities may be required until you are deemed medically fit to resume your full duties.

Driving in the workplace

For information about driving in the work-place **see page 72** and see notes on driving a commercial vehicle. In addition if you drive a company car, it is advised that you inform your employer of your diabetes to ensure that all insurance requirements have been met.

"Being a health professional I have worked in various community settings where driving company vehicles has been an integral part of my role. When driving a company vehicle I have had to produce my conditional licence and I have always felt comfortable in informing my immediate manager of my condition. In 26 years I have not had any conflict or concerns raised by my present and past employers."

Sharon, aged 48, type 2 diabetes for 26 years – working as a Registered Nurse.

Always remember, 'Above 5 to Drive,' for those on insulin and sulphonylureas, and the importance of monitoring your BGLs every two hours while driving as outlined on page 73.

Hyperglycaemia in the workplace

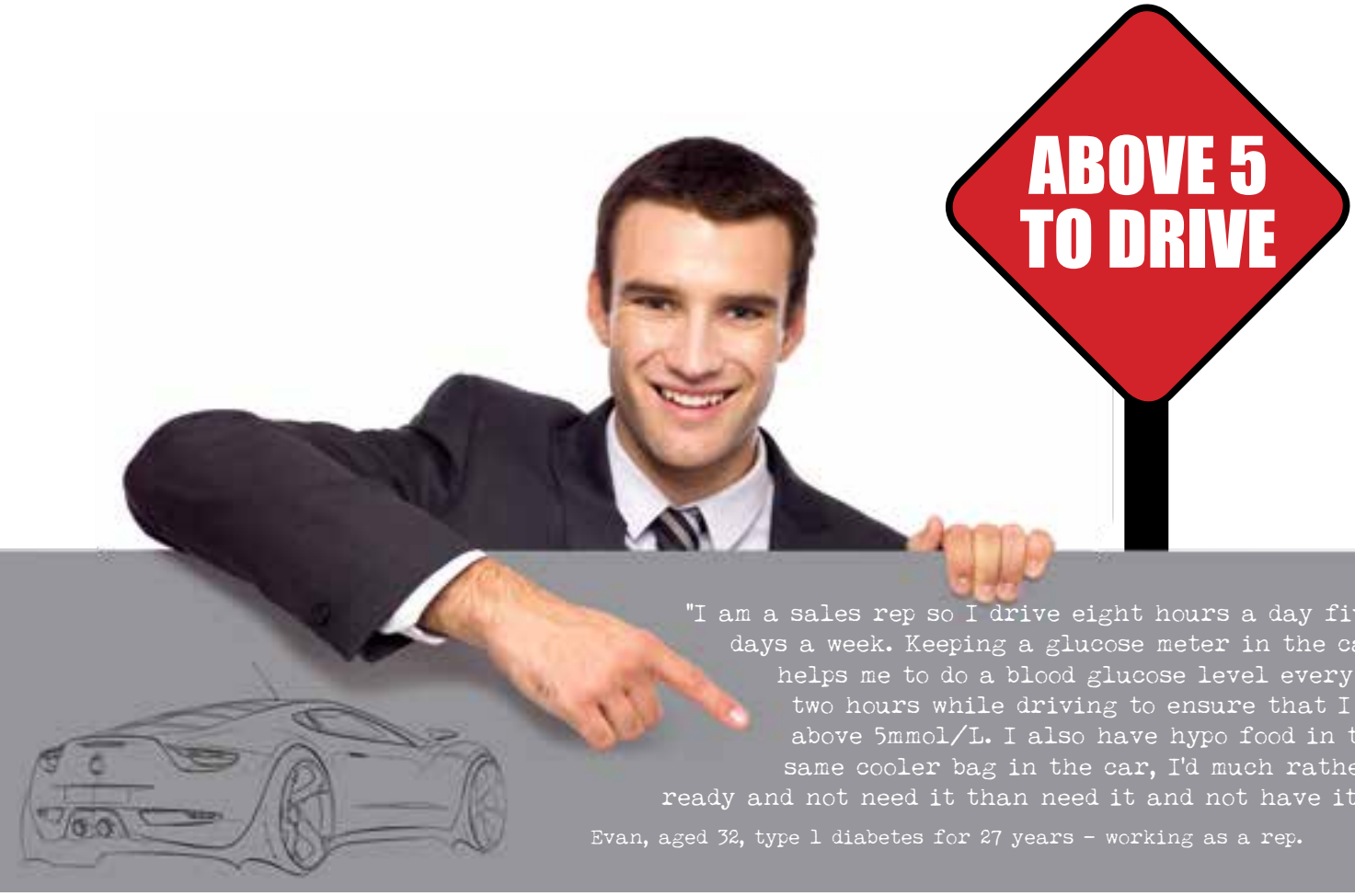
Every person with diabetes will occasionally experience high BGLs. There are many reasons why this may occur and everyone is different in regards to what causes BGLs to rise.

You may be well enough to continue working when you experience hyperglycaemia, however if you start to feel very unwell and/or start to vomit, you should seek medical attention immediately.

Discuss the management of hyperglycaemia with your diabetes team (including ketone testing for those with type 1 diabetes) and ensure that you have a sick day management plan in place.

Other considerations

Some jobs, such as those involving shift work and frequent travel, may pose some extra challenges when managing diabetes. However, with a good plan and a good diabetes team behind you, anything is possible.



"I am a sales rep so I drive eight hours a day five days a week. Keeping a glucose meter in the car helps me to do a blood glucose level every two hours while driving to ensure that I am above 5mmol/L. I also have hypo food in the same cooler bag in the car, I'd much rather be ready and not need it than need it and not have it."

Evan, aged 32, type 1 diabetes for 27 years – working as a rep.

Shift work

Shift work can impact on your blood glucose levels due to various factors including:

- Changes in meal times.
- Changes in sleeping patterns.
- Changes in your body's circadian rhythms.

The body's circadian rhythms regulate daily processes, including your sleep-wake cycle over 24 hours. When you start eating and sleeping at different times because of night work or changes in shifts, your body's circadian rhythms are disrupted. This can impact on BGLs.

If you take on a role that involves night work, split shifts or regular changes in shift times, it is good to plan ahead so that you can manage your blood glucose levels as best as you can. Some points to consider include:

- Regular blood glucose monitoring to determine how your shifts impact on your blood glucose levels.
- Talk to your diabetes team about insulin options that can provide more flexibility with meal timing and dose adjusting.
- Work with your diabetes team to adjust your insulin or medication doses to accommodate changes in your routine.
- Talk to your employer about the need for extra breaks for blood glucose monitoring and meals/snacks – it is your employer's responsibility to accommodate (including a clean and private location) your need for extra breaks for snacks, blood glucose monitoring, hypoglycaemia management, taking medications or administering insulin.
- Be prepared with healthy meals and snacks for work, including emergency snacks.
- If you are at risk of hypoglycaemia, organise a 'hypo kit' for the workplace and ensure that some of your colleagues are aware of hypoglycaemia and how to manage it if you require assistance **(see page 29)**.
- Organise a time to fit in regular physical activity.

Travelling for work

Travelling interstate or overseas may be a requirement for your job. This should not be limited because you have diabetes. With a little extra planning you can confidently travel anywhere without diabetes getting in the way.

Give yourself enough time to get organised before you go on any trip. Some situations that you need to be prepared for include lost or damaged supplies and luggage, needing to stay away for a longer period of time than expected, varying climates, illness and hypoglycaemia. If you are well prepared, even unexpected situations can be easily managed.

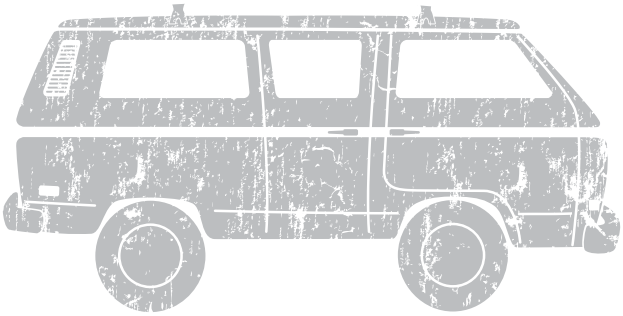
Preparing for your travels does depend on your diabetes management regimen, how you are travelling, and whether you are staying locally or travelling overseas.

For more information on travel see page 54.

Tips for staying safe in the workplace

Managing diabetes safely in the workplace may require some planning and support from your employer, colleagues and your diabetes team. Some considerations include:

- Seek advice about discussing your diabetes with your current or potential employers if you are not sure.
- Discuss the need to adjust your insulin or oral medication dose with your GP or diabetes specialist if your activity levels are higher or lower at work than usual.
- Take opportunities to monitor your blood glucose levels and eat if required.
- Keep a well-stocked 'hypo kit' at your work station (check that your hypo treatment is in date).
- Dispose of sharps in a sharps container.
- If you feel like you are experiencing hypoglycaemia, stop work to manage it.
- If you do shift work or travel regularly, discuss adjustments to your insulin or medication regimen that you may require.



DIABETES AND DRIVING

You can hold a driver's licence when you have diabetes. You just need to be aware of some rules and regulations that are in place to help keep you and other drivers safe on the road.

Getting your licence

If your diabetes is managed with insulin you will need to show that your diabetes is managed adequately by providing a medical report from your doctor or endocrinologist before you get your licence. This is for your safety, your passenger's safety and the safety of other drivers on the road. The main concerns are hypoglycaemia while driving and the impact diabetes complications such as eye damage may have on driving.

Maintaining your private licence

If you already had your licence when you were diagnosed with diabetes it is your legal responsibility to notify the Driving Licence Authority (DLA) of your condition if you:

- Have been diagnosed with type 1 diabetes.
- Have been diagnosed with type 2 diabetes and manage with oral medications and/or insulin.

If you have type 2 diabetes and commence onto insulin from other glucose lowering medications you need to notify the DLA of this change.

Diabetes managed by diet and exercise alone

For private and commercial drivers there are no licence restrictions. You should be reviewed by your treating doctor periodically regrading the progression of your diabetes.

If you manage with glucose-lowering medications (not insulin)

Private vehicle driver

You may generally drive without licence restriction (i.e. on an unconditional licence) unless you have end-organ complications that may affect driving or had a recent severe hypoglycaemic event.

If you hold an unconditional licence you are still required to have 5-yearly reviews by your doctor to ensure your fitness to drive by the DLA.

Commercial driver

If you drive a commercial vehicle you require a conditional licence based on advice from an Endocrinologist or diabetes specialist. You are required to have an annual review by a medical specialist to monitor the progression of your condition and ensure you meet the criteria to hold a conditional licence to ensure your fitness to drive.

If you have type 2 diabetes and manage with metformin alone your ongoing fitness to drive may be assessed by your GP by mutual agreement with the treating specialist.

If you manage with insulin

Private vehicle driver

If you are a private driver and your diabetes is treated with insulin you will require a conditional licence and must have a review at least every two years conducted by your GP, Endocrinologist or diabetes specialist to ensure you meet the criteria to hold a conditional licence.

Commercial driver

If you drive a commercial vehicle you will require a conditional licence and have an annual review by your Endocrinologist or diabetes specialist to ensure you meet the criteria to hold a conditional licence.

"When I was first diagnosed with type 2 diabetes at the age of 22 I could drive on an unconditional licence. When I reached the age of 40 I required a conditional licence as I required corrective glasses for driving and reading. For the last 8 years I have attended annual licensing reviews with my doctor. I have maintained a positive attitude towards my diabetes self-management and had no difficulties with renewal of my conditional drivers licence."

Sharon, aged 48, type 2 diabetes for 26 years – working as a Registered Nurse.

What is a conditional licence

A conditional licence means that you may continue to drive as long as certain conditions or restrictions are met. In the case of driving with diabetes, a condition may be that your blood glucose monitoring records are reviewed regularly and you have 'satisfactory control' of your diabetes.

'Satisfactory control' is generally defined as an HbA1c of less than 9% measured within the preceding 3 months. The use of the term 'generally' is intended to allow doctors to make their own judgement on the 'satisfactory control' of diabetes on a case-by-case basis.

The DLA always makes the final decision about whether a driver is eligible for a conditional licence, the health professional assists the authority in its decision making.

Considerations for driving

Above 5 to Drive

The main concern for those who take insulin or certain diabetes medications called Sulphonylureas when driving is the unexpected occurrence of hypoglycaemia (hypo). However this can be prevented with these guidelines – Above 5 to Drive!

1. Before you turn on the ignition of the car check your BGL and ensure it is above 5mmol/L before you drive.

2. Check your BGL every 2 hours to make sure that it stays above 5mmol/L.

3. At all times, carry a fast acting carbohydrate food or drink when driving.

4. If you suspect a hypo while driving, pull over safely, turn off the car (take the keys out of the ignition) and check your BGL.

5. Once your BGL has risen above 5mmol/L wait at least 30 minutes before driving again.

Recent severe hypoglycaemia

Further guides have been developed for people who have suffered recent severe hypoglycaemia. A severe hypo is one that resulted in someone else having to help you to treat, either because you didn't recognise the hypo or by the time you did, you where unable to treat yourself.

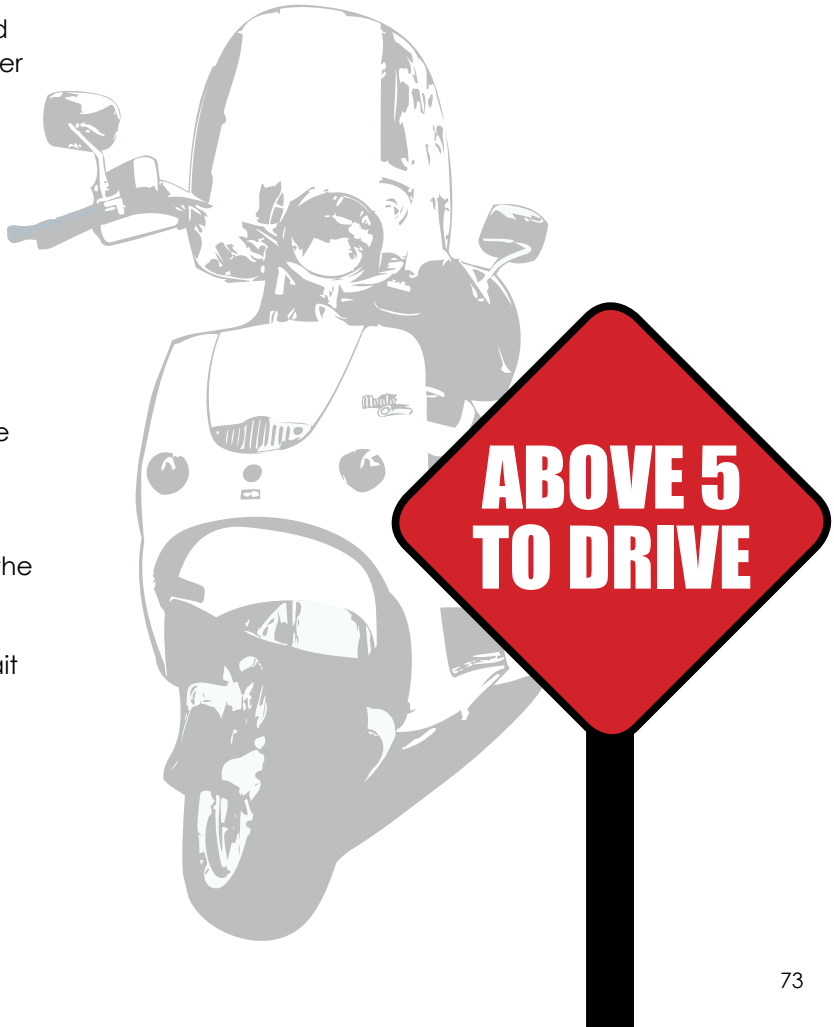
The guidelines suggest

1. Stop driving and wait until you have clearance to drive from your doctor (as per Assessing Fitness To Drive – www.austroads.com.au/aftd).

2. Thoroughly review your blood glucose monitoring and/or your diabetes management with your diabetes team.

3. Ask your doctor if you have 'reduced hypoglycaemia awareness.'

Follow this link for full details:
www.ndss.com.au



DIABETES AND PREGNANCY – MORE THAN MORNING SICKNESS AND FOOD CRAVINGS

Note: This information is equally important for women with type 1 and type 2 diabetes

The experience of becoming a mother is different for all women. First time mums enter an unknown world of morning sickness and strange food cravings. Second and third time mums find that their new experiences are different from their last. It's fair to say, that this is a time of mixed emotions. Having diabetes adds a whole new dimension to this.

It's important to know that you can have a healthy baby when you have diabetes. If you are considering pregnancy now or in the future, there are many considerations (beyond dealing with morning sickness) to help you manage a healthy pregnancy. These considerations start before you even become pregnant. The first eight weeks of pregnancy is when the baby's major organs develop. High BGLs during this time may lead to abnormal development of the heart, spine or kidneys. This is often a time when pregnancy is not realised, therefore planning to make sure that BGLs are as close to the target range before conception can help to reduce the risk of these complications.

Your diabetes and pregnancy team

Your team will be made up of a range of health professionals who can help you plan your pregnancy and manage a healthy pregnancy. Members of your team will likely include:

- Endocrinologist
- Specialist obstetrician (pregnancy doctor)
- Diabetes educator or diabetes nurse practitioner
- Dietitian
- General practitioner (GP)
- Midwife
- Psychologist
- Social worker

Make sure that you have a team that you can trust and make an appointment with them as soon as you decide that you want to become pregnant. It may take a few months to get you ready for pregnancy with the help of these specialists.

The next column provides a comprehensive checklist of topics that should be discussed with your diabetes team when planning a pregnancy.

Contraception

Using appropriate contraception will help to avoid pregnancy while you are taking the time to ensure your diabetes management and health is in check.

Target HbA1c

It is recommended that women planning a pregnancy maintain an HbA1c below 7% (53mmol/mol) for at least three months prior to becoming pregnant and during pregnancy. This is a general target (and often challenging to achieve) so discuss your individual target with your Endocrinologist.

Regular blood glucose monitoring

Optimal blood glucose management is one of the most important factors before and during pregnancy. This reduces the risk of complications developing for the mother and baby and helps to ensure the best chance of a successful pregnancy.

Review type 2 diabetes medications

Some diabetes medications are not known to be safe during pregnancy, therefore your doctor may advise you to transfer onto a different or similar medication. If you're taking cholesterol lowering medication or blood pressure medication it's important to talk doctor before you get pregnant. You may also be advised to transfer onto insulin before or during pregnancy.

Review insulin doses (including insulin pump settings)

Insulin regimens and doses may need to be adjusted in order to achieve your target HbA1c before conception. These doses will continuously be monitored, as they will change during pregnancy, delivery and while breast-feeding.

Check and stabilise blood pressure

Blood pressure may become elevated during pregnancy and should be measured at every appointment.

Screening for diabetes complications

Complications may worsen during pregnancy and become difficult to manage. Women should have their eyes tested before pregnancy and during the first trimester. Kidney function is monitored during pregnancy and ultrasounds

may be recommended by your diabetes team and any adjustments made to your diabetes management plan.

High dose (5mg) folate supplementation

This is much higher than the usual 0.5mg tablet available and should be taken one month before conception and for the first 12 weeks of pregnancy. Your doctor may suggest that you take half to one 5mg tablet each day depending on other pregnancy supplements you may be taking. Seek advice from your GP prior to taking a supplement.

150 microgram iodine supplementation

This is recommended during pregnancy and breastfeeding unless you have an overactive thyroid or Graves disease.

Learning or refreshing carbohydrate counting skills

This can help to match insulin doses to food intake to help manage blood glucose levels.

Optimal nutrition

A well balanced diet is essential for the growth and development of a growing baby. Important nutrients to consider during pregnancy include protein, iron, iodine, calcium, omega-3 fish oils and vitamin D. Check with your dietitian before becoming pregnant that you are meeting requirements and determine the need for additional supplementation.

Maintaining a healthy weight

Carrying extra weight can affect fertility and affect how insulin works (insulin resistance). Seek the support of a health professional to manage your weight in a healthy way to optimise your health and chances of falling pregnant.

Regular movement

Regular movement is essential to help maintain general fitness, muscle mass, an optimal weight and reduce insulin resistance that occurs during all pregnancies. Always discuss new exercise regimens with your GP or specialist before getting started.

Quit smoking, alcohol and drugs

Smoking increases the risk of damage to large and small blood vessels in the body, especially in people with diabetes. Smoking also harms the growth and development of your unborn baby. If you smoke, talk to your diabetes team about quitting or call the QUITLINE on 13 78 48.

For more information visit: www.quit.org.au

Alcohol and recreational drugs increase the risk of miscarriage and damage to your baby and should be completely avoided.

Rubella (German measles) and chicken pox

Ask your doctor to check your immunity to rubella and chicken pox before you become pregnant – you may require vaccinations before becoming pregnant.

The risks associated with unplanned pregnancies

During the first eight weeks of pregnancy the baby's major organs develop. High BGLs prior to conception and for the first 12 weeks of pregnancy may lead to abnormal development of the heart, spine or kidneys, during a time when pregnancy may not be realised. This may lead to miscarriage, still-birth or congenital abnormalities.

If BGLs remain high during pregnancy, complications at birth may occur. During pregnancy, glucose can cross the placenta wall therefore if the mother has high BGLs, the baby will also have high BGLs. From 15 weeks gestation a baby starts to produce its own insulin. If high BGLs are present, the baby will make extra insulin and grow faster and bigger than necessary (macrosomia). A larger baby is at risk of low BGLs after birth as it continues to make extra insulin for a day or two, even though they are not exposed to the same amount of glucose as they were in the uterus. There is also a risk of an early delivery or the need for instrumental delivery or a caesarean section with a larger baby.

Although there is a lot to think about, there is so much support available and mothers living with diabetes will tell you that this hard work is totally worth the reward of a healthy bundle of joy!

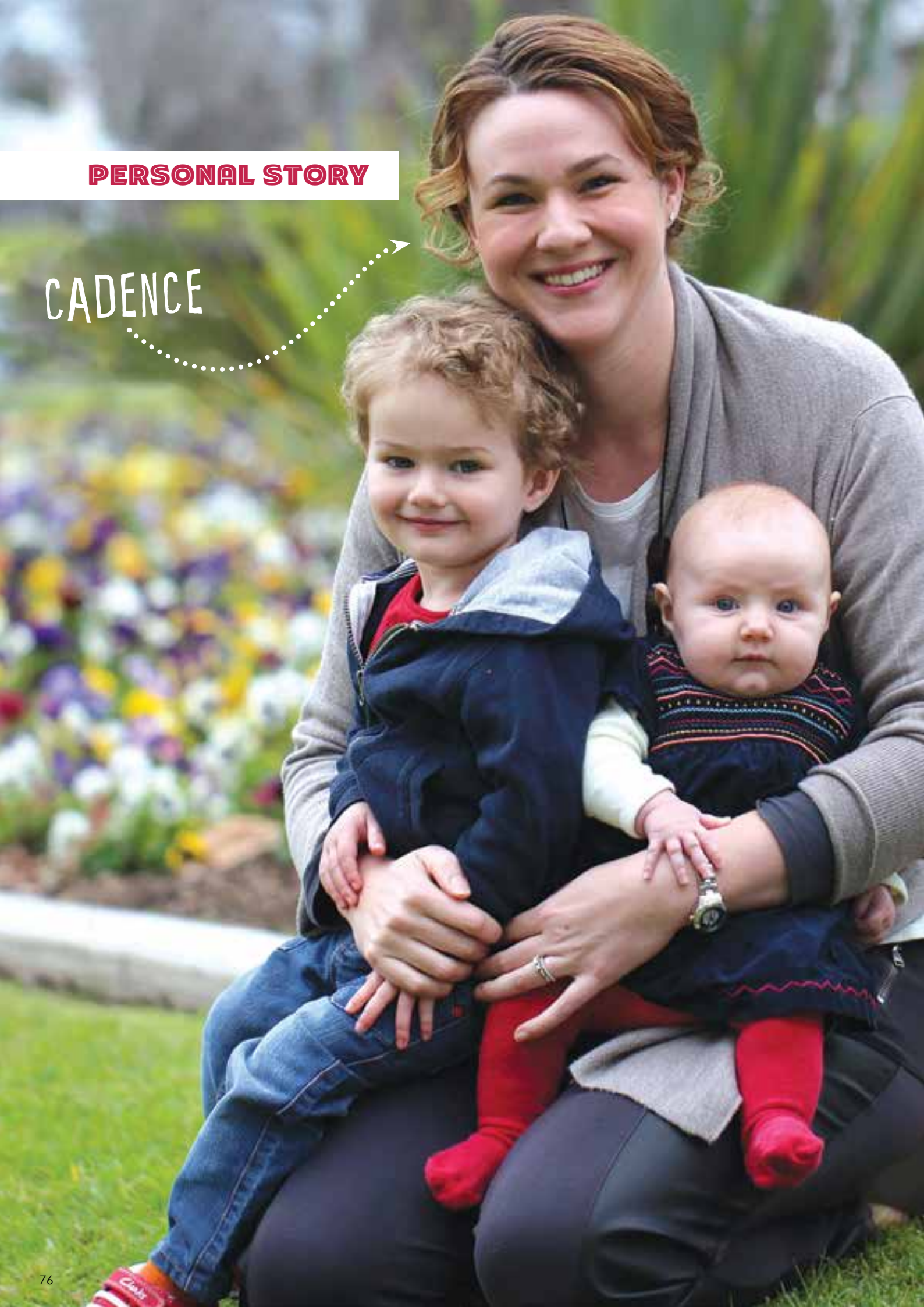
For further information on pregnancy planning, labour, birth, breast-feeding and the future, order or download a copy of the NDSS diabetes and pregnancy booklets. You can download them here:

www.diabetessa.com.au

If you need support because of miscarriage, stillbirth or neonatal death please contact the Miscarriage, Stillbirth and Neonatal Death Support Network SANDS on 13 000 SANDS (13 000 72637) to talk to another bereaved parent.

PERSONAL STORY

CADENCE



Diabetes, pregnancy and me

Cadence Haynes, a Senior Research Grants Officer at The University of Adelaide shares her story of managing diabetes during pregnancy.

I have known from diagnosis at the age of 18 that pregnancy could be a challenge. I was anxious for a long time as it seemed an overwhelming responsibility to undertake! However, every pregnancy is different, and I was pleased to discover that a healthy, normal experience is possible. I am now close to delivering my second baby*, and although this pregnancy has impacted my diabetes differently, it is just as manageable and even enjoyable!

My first baby was born a healthy and beautiful 3.5kg at 40 weeks (full term) following an induced labour that lasted about 10hrs. My second pregnancy has seen insulin resistance emerge much sooner.

My daily insulin requirements are now about double/triple what they were at the start, and will probably continue to rise until I give birth. However, I know that as soon as the baby is born, things will very quickly return to normal.

For me, the key ingredients for a healthy pregnancy when living with diabetes are:

- Checking my BGL a lot (every hour some days, and at least once overnight). It is the only way you can know that your body is as healthy as possible.
- Finding an Endocrinologist who is experienced with supporting women through pregnancy.
- Selecting an Obstetrician who is confident caring for pregnant women with diabetes. We present unusual challenges for providers of obstetric care, but that should not stop you having your wishes about the type of delivery or post-natal care you receive being heard and understood. For me this included controlling my own insulin pump throughout labour, offering my baby colostrum before formula should his BGL be low at birth, and aiming for a vaginal delivery with minimal interventions. I was thankful to achieve all of these.
- Support, love and trust from the people who are sharing this journey with you. Everyone needs to be fully informed, vigilant for when you might need extra help, and committed to trusting that you are doing the best you can.

Good resources:

www.realitycheck.org.au

is a great forum and online community that has a consistently active "Pregnant or Trying to Conceive" group.

https://mewithd.wordpress.com

one of many blogs produced by women with T1DM.

"Balancing Pregnancy with Pre-existing Diabetes: Healthy Mom, Healthy Baby" by Cheryl Alkon

*Since writing this article, Cadence has delivered a healthy baby girl.

PARTYING – DEALING WITH ALCOHOL, DRUGS AND SMOKING

As a young adult you will probably start to go out whether that to be to music festivals, clubs, pubs or parties and you will definitely come across alcohol, drugs and smoking. We all know the negative impact this can have on our health and can certainly complicate diabetes management. It is important however that you know how all of these can impact on your diabetes management, and how to stay safe in certain situations.

Alcohol

Drinking alcohol is a normal part of being an adult, and having diabetes doesn't mean that you can't enjoy a drink. However, having diabetes does mean that you have to do a little more planning to safely enjoy your night.

The way alcohol affects your BGLs may be different to another person with diabetes.

"For me, alcohol really plays with my BGLs. Even if I drink the sugar free alcoholic drinks my sugars will still go high due to the alcohol itself and then the next morning my levels will drop low. Making sure I know what my BGLs are doing while I am drinking is important to me and regularly testing is essential. I know this can be difficult when you're out in a pub or club but just bring the essentials including hypo treatment (I know it's not fair that we have to think about lots of other things)!

"Remember that everybody's body will react differently; it's just about learning how your body reacts and learning how to appropriately manage it."

Beth, aged 22, type 1 diabetes for 16 years

Type 1 diabetes

If you have type 1 diabetes the following risks are associated with drinking alcohol:

- Increased risk of hypos as the alcohol stops your liver from releasing glucose. Your risk is further increased with the more you drink and how active you are during this time – think about how active you may be dancing at a club.
- Alcohol will make it more difficult for you to recognise hypo symptoms and your friends and people around you may just think that you are drunk.
- Drinking too much may cause vomiting, which may lead to dehydration and DKA.
- You may experience a delayed hypo overnight or even the next day.

Type 2 diabetes

If you have type 2 diabetes and take insulin or sulphonylureas to manage your diabetes the following risks are associated with drinking alcohol:

- Increased risk of hypos as the alcohol stops your liver from releasing glucose. Your risk is further increased with the more you drink and how active you are during this time – think about how active you may be dancing at a club.
- Alcohol will make it more difficult for you to recognise hypo symptoms and your friends and people around you may just think that you are drunk.
- You may experience a delayed hypo overnight or even the next day.

"Alcohol affects different people in different ways. Some people's BGLs will go high and others will go low when drinking. The first few times you drink alcohol, I recommend drinking at home with your parents around so they can help you work out how alcohol affects you.

Tim, aged 20, type 1 diabetes for 9 years

SURVIVAL TIPS FOR DRINKING ALCOHOL SAFELY

What is a safe amount?

For anyone over the age of 18 years the safe amount of alcohol is:

- No more than 2 standard drinks each day, and
- At least two alcohol free days a week.

One standard drink is:

- 285ml regular beer or
- 425ml low alcohol beer (a schooner) or
- A nip / shot of spirits (30ml) or
- 100ml of wine.

These amounts may be very different to what you usually pour yourself.

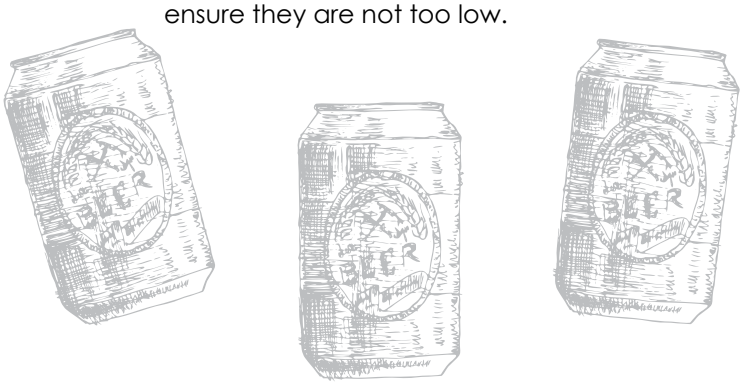
Consuming alcohol above these recommendations regularly may affect your brain, liver and pancreas, increase your weight and increase your risk of heart disease and some cancers.

The reality...

The reality is there may be times when you consume more alcohol above these recommendations. The most important thing is to ensure that you keep safe during that time including the next day, by planning ahead.

Before you start drinking

- Have a meal including some carbohydrates before you start drinking.
- Talk to your diabetes team about any changes in your normal insulin dose you may require if you are going to be drinking.
- Test your BGLs before you start drinking to ensure they are not too low.



While you're out

- Have fun but be safe.
- Try not to drink too quickly and have a non-alcoholic beverage between alcoholic drinks.
- Eat some carbohydrate while you are drinking. This may include chips, crackers or pizza. Regular soft drinks or juice as mixers can give you some extra carbohydrate if there's no food available.
- Carry your hypo treatment with you.
- Tell at least one of your friends (preferably the one that is not drinking) that you have diabetes and make sure they know what to do if you have a hypo - tell them that if you're unconscious to call an ambulance.
- Wear or carry some ID so that if anything happens, the ambulance, hospital or people around you know that you have diabetes.

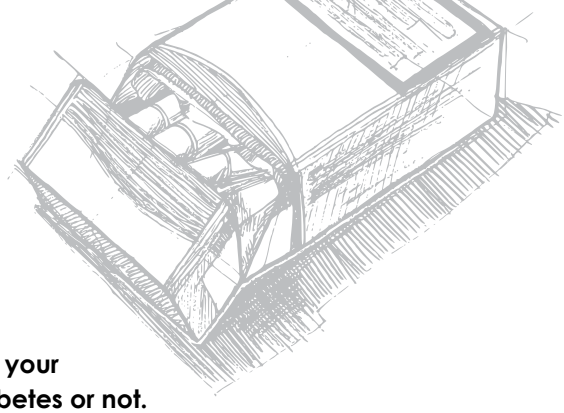
When you're home

- Check your BGL when you get home. If you're low, treat the hypo and have some extra carbohydrates to keep your BGLs up. Even if you are not low, the extra carbohydrate before bed can help to prevent an overnight or delayed hypo.
- Ask a friend, partner or family member to wake you up or check your BGL for you overnight.

The next day

- Ask a friend, partner or family member to wake you up in the morning to check your BGL.
- Check BGLs to monitor for hypos and make sure you eat enough that day – the blood glucose lowering effects of alcohol can last up to 24 hours after your last drink!
- If you're a little under the weather after a night out and have been vomiting or forgot to take your insulin, use your sick day management plan as discussed with your diabetes team. **See page 32** for more information on sick day management.

For more information on managing alcohol and type 1 diabetes see: www.ndss.com.au



DRUGS

It is well understood that illicit drugs have a negative impact on your mind and body and may cause death – whether you have diabetes or not.

There is very limited research around how recreational drugs directly impact on BGLs but we know that obviously they are not good for anyone to take and we do not recommend that you take them!

It is important however for anyone with diabetes to understand the added dangers and potential impacts on their diabetes, so they know how to manage a situation if they were to take recreational drugs. Some possible impacts of recreational drugs on diabetes management include:

- Staying awake longer than usual and dancing more, therefore increasing risk of hypoglycaemia for those on insulin or sulphonylurea medication.
- Masking the symptoms of hypoglycaemia.
- Sleeping for long periods of time when 'coming down,' which means you may skip meals or skip insulin or medication dose.
- Altering your perception resulting in the inability to manage your diabetes increasing risk of hyperglycaemia (and ketoacidosis in type 1 diabetes) and hypoglycaemia.
- Decreased appetite increasing risk of hypoglycaemia in those who take insulin or sulphonylurea medication.
- Increased appetite resulting in eating more and leading to hyperglycaemia.
- Disruption to normal diabetes routine due to tiredness.

Like when you drink alcohol, make sure you are as safe as possible using some of the these tips:

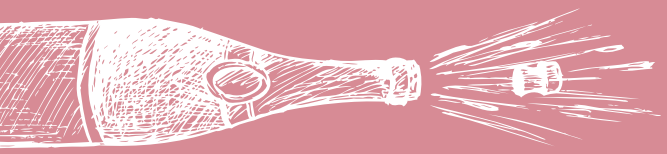
- Be as well informed as possible and consider the potential impact on your health.
- Choose as safe an environment as possible.
- Never experiment for the first time without someone else being present.
- Carry something with you explaining that you have diabetes in case of an emergency.
- Make sure at least some of the people with you are aware you have diabetes, know what to do in an emergency and will be capable of providing any required assistance.
- If you do take drugs you should talk to your Endocrinologist or another member of your diabetes team about how to minimise risk when taking them.
- Stay hydrated as many drugs can increase your body temperature.
- Don't mix drugs with alcohol due to the many effects on the body at one time.
- Always carry some quick acting carbohydrate when you take drugs.
- Take your insulin and medications as directed at all times.
- If you will be dancing for long periods of time drink carbohydrate containing, non-alcoholic drinks.

For more information on illicit drugs use and diabetes visit: www.diabetessa.com.au

Smoking

Having diabetes means that you already have a higher risk of developing cardiovascular disease compared to people who don't have diabetes. Smoking will further increase this risk as it accelerates blood vessel damage.

Call Quitline on 13 11 20 or for more information visit www.quit.org.au



PERSONAL STORY

Mary-Anne is 21 years old and was diagnosed with type 1 diabetes when she was 18. She shares her story around dealing with a new diagnosis at such a hectic and socially important time in her life.

Someone once said, "when life gives you lemons", – well you know the rest. As a person with diabetes diagnosed as an adult and living a relatively hectic life, I've consistently found myself inspired by those who've lived with the condition since childhood yet still achieved greatness. This includes Channel 7's Better Homes and Gardens' chippy Rob Palmer, and international pop sensation Nick Jonas, both type 1 diabetics.

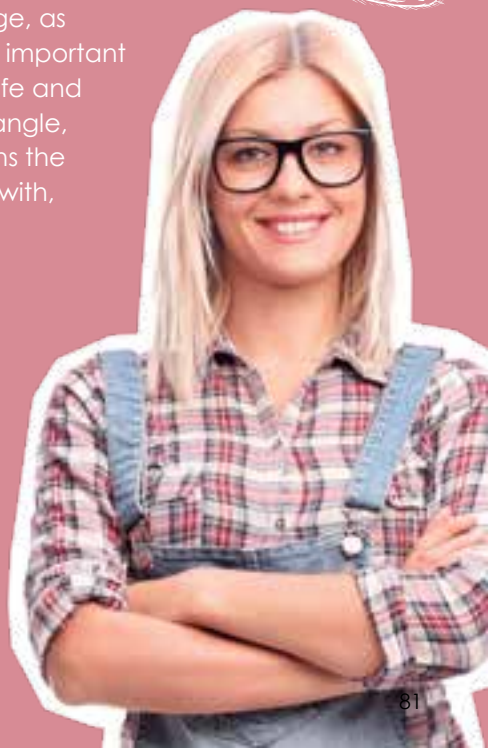
I'm in my third year of Uni and will soon graduate with a Bachelor of Arts (Communication and Media Management), and although diabetes has at times held up my personal progress with my studies, it isn't my career that I've felt is necessarily being compromised by my condition. Having a consistent, strong social life is something I find important in maintaining my way of wellbeing, and in turn evidently balancing out my glucose levels (as they say, sound mental wellbeing can greatly increase physical health). Yet by the same token, getting diabetes at 18, straight out of school, sure of myself and about to take on the world, has meant having to see every aspect of what is 'normal', through a new set of lenses. This at times impacted on my social life.

Making friends at Uni can be daunting at the best of times, but having to awkwardly pretend to not be doing anything with your hands under the table at the First Years' Dinner when testing your BGL, doesn't help. Neither does whacking out another insulin pen and needle and randomly injecting yourself in public. Despite all of my own insecurities regarding my diagnosis, the lingering stress of my parents worrying over the prospect of me passing out on a nightclub toilet floor constantly hanging over me, which results in many reminders of 'don't drink too much, Mary-Anne. You have water, okay?!' has also added to the pain. Countlessly having to say 'no' to another drink, or being designated driver to avoid awkward conversations about why I'm not drinking, aren't always fun, either.

My parents are beginning to become more lenient, and although I know they look at this condition from a different perspective, I've learnt to also accept that they only ever do what they feel is best for me. This is something that I probably do need to take on for myself more often than not, especially when out on a pub crawl or drinking with friends on an empty stomach because I didn't allow myself enough time to eat properly amongst doing my make-up and organising my outfit for a big night ahead!

The main thing I have learnt and believe, is that what we do needs to be what is physically best for us at that point in time. True friends will understand if you need to stay home and get some extra rest, and hey, I know when my body feels like alcohol and partying, and when it doesn't.

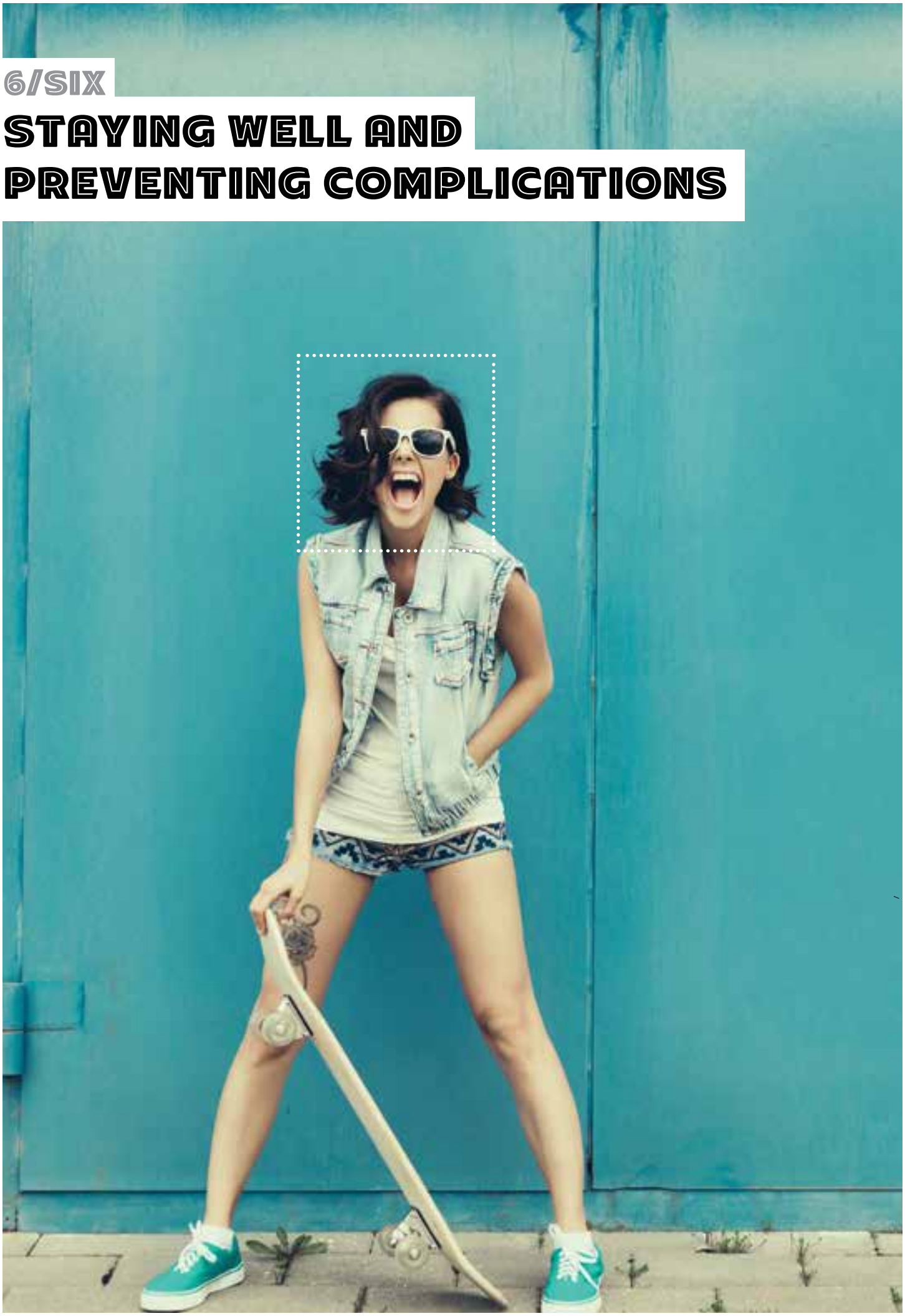
Since my diagnosis I have come a long way and have learnt to respect myself and my health and realise that my boluses, BGL testing and hypo treatments are only as awkward as I'm making them out to be. People are generally pretty understanding when they learn of what you're really doing under the table. At the end of the day, I've learnt, with a bit of help from my fellow diabetic friends at Diabetes SA, that my health is the most important asset I own, and that diabetes is nothing I need to be ashamed or embarrassed about and that on the flipside, my liver, wallet and mind will love me all the more for keeping the heavy partying to a low. Don't get me wrong, alcohol, partying and having fun is a natural part of life and something I will NEVER deprive myself of completely, but I will use it as a 'sometimes' treat to maybe get through a week of eating as healthily as possible, or even as a reward for going a few days maintaining sugar levels which are as consistent within my desired range, as possible. I think it's just important to take everything in life and see it from a positive angle, and truly let the lemons the universe provides me with, never go to waste.



MARY-ANNE

6/SIX

STAYING WELL AND PREVENTING COMPLICATIONS



STAYING WELL WITH DIABETES

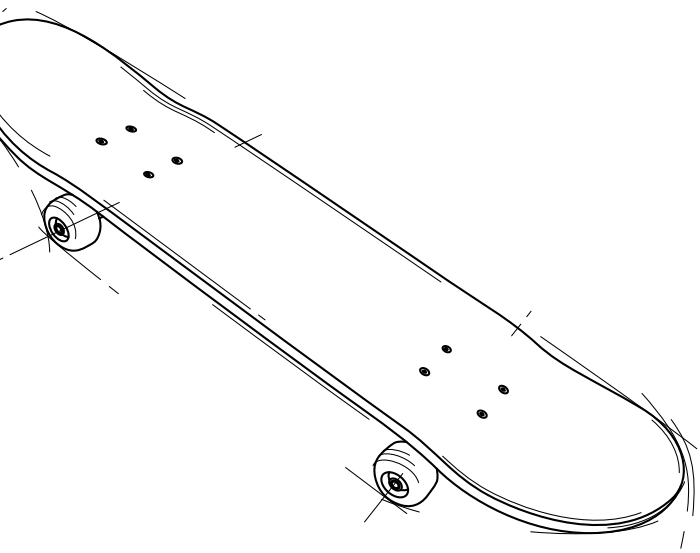
Living with diabetes can be all consuming and overwhelming at times. How do you keep focused and on track with the everyday demands of managing your diabetes, and still enjoy a full and active lifestyle?

Positive moves to prevent and manage complications

Rachel's story on the following page illustrates that managing diabetes is more than just focusing on BGLs. Other aspects of your physical and emotional health should also be monitored by you and your doctor to ensure that you are staying healthy and preventing diabetes-related complications.

The risk of developing diabetes-related complications is reduced when BGLs, cholesterol and blood pressure are well managed. Regular screening of the eyes, feet, urine, teeth and gums can also detect early problems and avoid further damage. Sometimes early problems can also be reversed.

The following checklist outlines positive moves to help you stay on track with diabetes management and ensure you are on top of the recommended health checks. Discuss your individual needs, including your target ranges with your diabetes team.



Daily positive moves

- Blood glucose monitoring.
- Rotate injection sites (if relevant).
- Rotate pump insertion sites (type 1 only).
- Take all medications as prescribed.
- Check your feet for any abnormalities (swelling, redness, broken skin).
- Ketone checks when BGLs are above 15mmol/L (type 1 only).
- Brush your teeth twice per day and check for signs of swelling, tenderness or bleeding gums.
- Make positive moves with regular exercise.
- Healthy eating.
- Quit smoking.

3 monthly positive moves

- HbA1c check.
- Blood pressure check.

3-6 monthly positive moves

- Insulin pump check to review settings with your diabetes team (type 1 only).
- Dental check.

Yearly positive moves

- Podiatry check every 6-12 months.
- Kidney check (microalbumin and GFR).
- Cholesterol and triglyceride check.
- Emotional health check.
- Education about diabetes management.

1-2 yearly positive moves

- Eye check.
- Thyroid and coeliac check (type 1 only).

Watch the Diabetes SA online program about screening for and prevention diabetes-related complications here: www.onlinelearning.diabetessa.com.au

PERSONAL STORY

RACHEL

About Rachel

I was diagnosed with type 1 diabetes 42 years ago at the age of 2 years. The local doctors and even the specialists at the Women's and Children's Hospital had minimal understanding of diabetes at that time. My parents would inject me with insulin, which at this time involved using a very large needle and a glass syringe. My mother would hold me down while my father did the injection. There was no blood glucose monitoring, and the urine testing was not much fun, and did not provide accurate results. We basically guessed my blood glucose levels based on how I was feeling.

Fears for the future?

When I was eight years old I remember a doctor at the Women's and Children's Hospital telling my mother, that I may not be able to become pregnant and have a healthy baby after developing type 1 diabetes at such a young age. That same doctor also said I would likely develop diabetes-related complications, including losing a leg. Because of that conversation, when I was ten after I cut my toe on the bottom of a friend's swimming pool, my mother made me wear socks in the pool, which was quite embarrassing!

It was at this time that I decided I would prove these doctors wrong. I knew that if I "followed the rules", by eating healthy and keeping active, I could live a full and healthy life with diabetes and do what-ever I wanted with my life. My parents encouraged me with this and helped me to understand the consequences of not following the recommendations, which generally resulted in either elevated blood glucose levels or a hypoglycaemic episode.

Her take on "following the rules"

As I grew up I attended the diabetes kid's camps and eventually became a leader on these camps. The diabetes camps inspired me to take control of my diabetes and not let diabetes get in the way of the things that I wanted to do. But to do this I had to always keep on top of blood glucose monitoring, eating well and exercising regularly. The camps also inspired me to follow a career working as a diabetes educator.

I have learnt that "following the recommendations" including regular blood glucose monitoring, treating hypos appropriately (being careful not to over or under treat), keeping informed about the latest trends in diabetes and trying to maintain a positive outlook on life has helped me to remain in control of my diabetes. I would often tell myself that I was healthier than my friends because I live such a healthy lifestyle!

In addition to managing my diabetes, I do take time to relax and ensure I manage my stress levels. I have also had times where I reduce my blood glucose monitoring to allow myself a break, which is important in order to stay on track long term.

Checking in regularly

Having regular complication reviews is important. This includes 2 yearly eye reviews, yearly microalbumin checks, Glomerular Filtration Rate (GFR), podiatry, cholesterol checks and 3 monthly HbA1c and blood pressure checks. If something changes I would rather know so I can have early treatment and prevent complications such as blindness or kidney failure.

Peer support

I catch up with a group of girlfriends every 3 months who also have type 1 diabetes. It is great to get together with other people who understand what it is like to live with diabetes. This provides a lot of support.

Words of wisdom

I feel that not being afraid to share my diabetes with those around me, including those people I work with, having a sense of humour, understanding that it is normal in diabetes to have some low and high blood glucose levels has helped me to cope with the demands of managing this condition. I thank my Endocrinolgist and diabetes team for their support and guidance.

Lastly, I am proud to say that I have lived with type 1 diabetes for 42 years, done all the things I wanted to do in life, and have been blessed with 3 wonderful children, including a healthy twin pregnancy. I have no evidence of any diabetes complications and I thank my genetics, and dedication to managing diabetes with the support of family, friends and medical team.

DIABETES AND EMOTIONAL WELLBEING – WHAT'S PLAYING ON YOUR MIND?

Everyone deals with things differently and often we feel that our worries are no big deal, or that we can handle them on our own. The fact is, diabetes can really play on everyone's mind at some stage and it's ok to seek help to work through these times.

Have you experienced diabetes related distress?

Diabetes distress refers to the emotional burdens and worries that arise from managing diabetes. It is common for anyone with diabetes to experience distress. You may experience distress because you are worried about diabetes complications, you may feel anxious or guilty about blood glucose levels, or you may feel constantly stressed or concerned about food or potential hypoglycaemia.

Learning about your diabetes and how it can be effectively managed can increase your confidence and reduce some distress associated with managing diabetes.

Have you experienced diabetes burnout?

It is likely that every person (no matter their age) has experienced diabetes burnout at some stage in their life. This is a normal part of diabetes management, which involves growing tired of managing the everyday demands of diabetes. This may lead to you ignoring your diabetes.

The important thing is to know where to seek help or find out what will help you get back on track. This may be catching up with a friend who also has diabetes, connecting with an online community **(see page 90)** or simply catching up with your doctor or diabetes educator for a chat.

Feeling burnout for an extended period of time may lead to depression.

What is depression?

Depression is a serious and chronic condition that affects a person's physical and mental health, resulting in the inability to enjoy and carry out usual daily activities. The risk of developing depression is double in people who are living with diabetes and this can sometimes be attributed to all of the different elements of diabetes. Living with diabetes can make you feel alone or set apart from your friends and family because of all the extra work required for the management of the condition.

Depression can get you into a vicious cycle. It can block optimal diabetes self-care, resulting in less desired health care outcomes and sometimes serious consequences, such as more frequent episodes of severe hypoglycaemia and diabetic ketoacidosis (DKA). If you are feeling depressed and have no energy, chances are you will find such tasks as regular blood sugar testing too much. If you feel so anxious that you can't think straight, it will be hard to keep up with a good diet. You may not feel like eating at all. Of course, this will affect your blood sugar levels.

Understanding how diabetes may impact on your emotional health, implementing strategies to improve your emotional wellbeing and looking out for signs and symptoms of depression are important considerations. With positive steps in the right direction for the treatment of depression, you will start enjoying life again.

For further information on depression and diabetes visit: www.diabetessa.com.au and refer to the information sheet.

I have kept in contact with the friends that I have made on the previous camps and on this one and I know the friendships will last a life time. Although we only see each other a couple times a year it doesn't matter because everyone gets each other. Everyone knows exactly how you feel in areas that no one else will ever understand and just being able to talk about that with them has given me a great sense of security and confidence in the way I manage my diabetes.

Georgina, aged 15, type 1 diabetes for 5 years

How stress affects diabetes management

Stress can have a direct effect on blood glucose levels, potentially causing them to rise. This is due to the release of stress hormones, such as adrenaline and cortisol. The potential impact of stress depends on the individual as everyone deals with stress in different ways.

For more information on managing stress and diabetes visit: www.diabetessa.com.au

Sexual health

Sex is an important part of life and relationships, but it can be a big decision. It is ok to have safe, respected and consented sex when you're living with diabetes, but there are a few things to consider.

Speaking with your GP or going to a family planning centre can give you advice and practical help all in confidence, if you don't feel comfortable discussing the subject of sexual health with family or friends.

We all know the importance of protection from sexually transmitted diseases (STDs) and unwanted pregnancy. To prevent STD's, safe sex is a must and all forms of contraception are suitable for people with diabetes. To protect both of you from sexually transmitted diseases, always use a condom regardless of other contraception you might use. Women with diabetes who take the Pill are susceptible to the same – but no higher – risks (e.g. high blood pressure, thrombosis, etc.) as any other woman who goes on the Pill. You'll need to talk to your nurse or doctor about what's right for you, but for some idea of the main methods, have a look at: **www.shinesa.org.au/health-information/contraception**

Diabetes, especially when unstable increases the risk of multiple complications, including the incidence of infections of oral or genital thrush (or candida). Although thrush is a relatively common and mostly harmless fungal infection, the combination of thrush and diabetes can make life extremely uncomfortable and, in some cases, produce further and more serious yeast infections.

Thrush can affect both men and women and tends to congregate in warm, moist areas of the body such as the mouth, vagina, penis and certain areas of skin. It is likely to happen from time to time and is more likely if your blood glucose levels are high, so attempt to keep your diabetes managed the best you can. Thrush treatments are available over-the-counter at a pharmacist, and can also be prescribed by a doctor. However it is important to get an accurate diagnosis from your doctor. Thrush is not sexually transmitted, so you don't need to avoid sex, however it is worth treating your partner as well – thrush can easily be passed backwards and forwards. If using condoms, creams and pessaries can weaken the latex and cause the condom to break or split.

Hypoglycaemia can occur at any time, including during sex. You could also experience hypoglycaemia at night because the physical exertion of sex means that in some ways, it makes sense to treat intercourse in the similar way that you would exercise. You might want to tell your partner what to expect if you have a hypo, but how you handle your blood glucose levels around sex will come down to personal preference. If you have an understanding partner it certainly helps, but how you handle things yourself is also key.

If your relationship is new, it may be tempting not to tell your partner about your diabetes and you may find yourself taking great pains to hide your diabetes. However, your diabetes will likely come up in conversation sooner or later so it's best to be open where possible. If your partner is supportive and understanding, you may have found yourself a great partner in life.

Some people with diabetes, however, can have less interest in sex because of depression, anxiety or changes in blood glucose levels that can leave them feeling tired or irritable. If you find that you don't enjoy sex anymore, it's normal to feel upset. You may blame yourself or your partner, feel angry or depressed. These feelings can make it hard for you to talk openly with your partner, but don't give up! Find someone in your health care team to talk with, such as your GP, Endocrinologist or diabetes educator.

For further information on sexual health visit: www.diabetessa.com.au and refer to the information sheet.

Eating disorders

An eating disorder is a serious mental illness, defined by abnormal eating and/or exercise habits, severe distress or concern about body weight or shape that becomes a negative preoccupation of someone's life.

Eating disorders are common among teenage and young adult women and are probably more common among women with diabetes than women who do not have diabetes.

The most common eating disorder in women with type 1 diabetes is bulimia, which is characterised by periodic binge eating (the rapid controlled consumption of large amounts of food). Purging may occur with self-induced vomiting, laxatives diuretics, the reduction or omission insulin, severe diets, fasting or vigorous exercise.

In women with type 2 diabetes, binge eating disorder (also known as compulsive overeating) is more common. This is characterised primarily by periods of continuous, impulsive, or uncontrolled eating beyond the point of feeling comfortably full. While there is no purging, there may be random fasts or repeated diets and often feelings of remorse or self-hatred after a binge.

Because both diabetes and eating disorders involve attention to the state of the body, weight management, and supervision of food, some people develop a pattern in which they use the disease to justify or conceal the disorder. Because the complications of diabetes and eating disorders can be serious or even fatal, responsible, healthy behaviour is essential.

While eating disorders are serious, potentially life threatening illnesses, there is help available and recovery is possible. If you feel you may have an eating disorder, seeking help and treatment from a team of health professionals is important.

There are a range of health professionals who have specific training and experience in the area of eating disorders that may be able to help you. This includes your GP, an Endocrinologist, your diabetes educator, a social worker and other mental health professionals (e.g. counsellor or psychologist). Your GP can refer you to a psychologist or dietitian who can assist you in taking the next step towards recovery.

If you are worried that someone you know with diabetes could have an eating disorder, encourage them to seek professional help whilst maintaining the need for privacy. The fact that you are there to help will be appreciated. Also if you can, express your concern for your loved one to the diabetes team and get support for the person.

For further information on eating disorders and what you can do to help visit: www.diabetessa.com.au and refer to the information sheet.

Where to get help

- Your local General Practitioner
- The Butterfly Foundation 1800 33 4673
- The Eating Disorders Foundation 1300 550 236

Useful websites to support people with an eating disorder:

www.thebutterflyfoundation.org.au

www.eatingdisorders.org.au

www.diabetescounselling.com.au

Socialising with others with diabetes has given me an insight on how people deal with different situations and to compare how I do things with others, to see whether I can improve or help someone else out.

Bryan, aged 15,
type 1 diabetes for 1.5 years.

"I catch up with a group of girlfriends every 3 months who also have type 1 diabetes. It is great to get together with other people who understand what it is like to live with diabetes. This provides a lot of support."

Rachel, aged 44,
type 1 diabetes for 42 years.

Working towards better emotional well-being

- Knowledge is power! Learning about diabetes and how to effectively manage it may increase your confidence and reduce some stress associated with managing diabetes.
- Understand that one size does not fit all with diabetes management. Each person will have individual targets and goals tailored to their needs.
- Understand that it is normal to have some lower and higher blood glucose levels when you have diabetes.
- Don't think of blood glucose levels as 'good' or 'bad 'or feel guilty when blood glucose levels are out of your target range. Many factors impact blood glucose levels so use blood glucose monitoring as a tool to help you make decisions about your diabetes management.
- Talk to supportive family members or friends particularly when you feel overwhelmed.
- Seek peer support from organised support groups, social activities, group education sessions and online forums. Sharing experiences with others who have similar experiences may be helpful.
- Exercise can improve your physical and emotional health. Find an exercise you enjoy and make it part of your everyday routine.
- Regularly take some time out for yourself.
- Participate in relaxation techniques such as meditation, listening to music, yoga, tai chi, or gardening. This may help to reduce stress.
- Identify any areas of diabetes self-management that you find challenging (e.g. blood glucose monitoring) and seek some advice to deal with these challenges.
- Set small, achievable and realistic goals to overcome any barriers to self-management.
- Healthy eating can assist with emotional well-being and the management of diabetes.
- Find a health professional that you can work effectively with.
- Have realistic expectations about your diabetes care.

Where to get help

- Your health care professional (GP)
- Other people with diabetes
- Beyond Blue 1300 224 636
- Lifeline 13 11 14 (24 hours 7 days a week)
- Mental Illness Fellowship of South Australia (08) 8378 4100
- QUIT line 13 78 48
- Drugs and Alcohol Services 1300 131 340
- ACIS (Assessment Crisis Intervention Service) 13 14 65
- Public hospitals
- Kids Help Line 1800 551 800 (24 hours 7 days a week)

Medicare may provide a rebate on psychologist fees if you have a chronic condition and are referred by your doctor. Discuss this with your doctor if you would like to seek counselling.

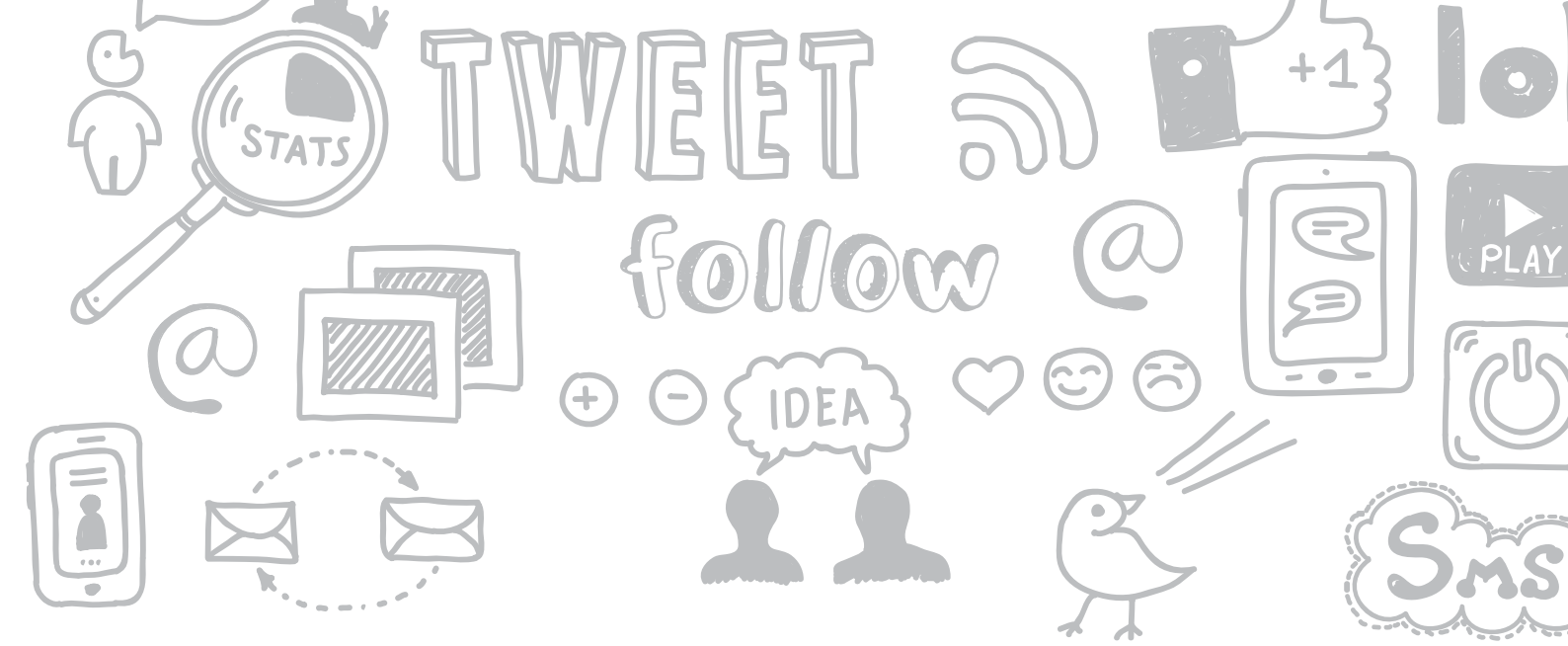
Useful websites to support emotional wellbeing

- www.diabetessa.com.au
- www.diabetesaustralia.com.au
- www.mifsa.org
- www.ndss.com.au/myD
- www.diabetescounselling.com.au
- www.sane.org
- www.beyondblue.org.au
- www.reachout.com.au

Diabetes etiquette

Occasionally you may find it challenging to express your emotions and feelings about diabetes to others, especially to your parents or friends. However you may even experience some unhelpful advice yourself, from others who are not living with diabetes. With this is mind, the Behavioural Diabetes Institute has released a guide about good diabetes etiquette for both parents of teens with diabetes and for people who do not have diabetes. The guide might be useful for the time of year that family and friends come together and where genuine support and respect is desired.

For more information on diabetes etiquette visit: www.behavioraldiabetes.org



ONLINE FORUMS, WEBSITES & COMMUNITIES

Websites, online communities and forums can help anyone with diabetes stay connected with new information and other people living with diabetes. The following table outlines some common diabetes online communities.

Websites

My D

myd.ndss.com.au

Suitable for people with type 1 and 2 diabetes aged 16-25 years.

This website provides general information on living with diabetes and covers everyday topics like school, work, travel, driving, transition and general health. The site also provides information and links to other sites of interest and places to go for more information. There is a section for young people with diabetes to tell their story.

As 1 Diabetes

www.as1diabetes.com.au

Suitable for kids and teenagers with type 1 diabetes

This website provides information for kids, teenagers, parents, schools and other supporters on managing type 1 diabetes.

RealTime health

portal.realtimehealth.com

For people diagnosed with various conditions including type 1 diabetes

This website includes a section for young people living with type 1 diabetes. Includes 'Speaking from Experience' clips featuring seven young people talking about the ways in which type 1 diabetes has affected their life. It was produced in partnership with Diabetes Australia VIC and Aboriginal Medical Service of Western Sydney.

Disclaimer: While every effort is made at the time of publication, no responsibility is accepted by Diabetes SA for the accuracy contained in the text and provided on online chat forums. Medical matters must always be referred to a medical professional.

Online forums and communities

Diabetes SA Facebook page

www.facebook.com/DiabetesSA

All people living with diabetes and their families

The Diabetes SA Facebook page provides information about upcoming events, recent articles and personal stories.

The type 1 diabetes network

t1dn.org.au

People living with type 1 diabetes and parents.

This website has two chat forums – a reality check for people living with type 1 diabetes and a munted pancreas forum for parents

Includes a starter kit for newly diagnosed adults with type 1 diabetes, providing comprehensive information written by people with type 1 diabetes.

HypoActive

www.hypoactive.org

HypoActive facebook page

Active people with type 1 diabetes.

The aim of this forum is to inspire and enable people with type 1 diabetes to live a more physically active lifestyle. HypoActive is a community network group under Diabetes Australia - Victoria (DA-Vic).

Tu Diabetes

www.tudiabetes.org/forum/

All people with type 1 and type 2 diabetes.

A program of the Diabetes Hands Foundation, TuDiabetes is a "community of people touched by diabetes." Patients and family members share personal stories, post helpful resources, and ask questions about diabetes.

Oz Diabetes Online Community

www.facebook.com/OzDiabetesOC

All people with type 1 and 2 diabetes.

The Australian Diabetes Online Community has an official Facebook page providing a forum to discuss any diabetes related topic. They are very active on Twitter @OzDiabetesOC and moderate a TweetChat about all things diabetes-related every Tuesday at 8.30 AEST. Follow #OzDOC.

USING TECHNOLOGY FOR DIABETES MANAGEMENT

Technology has come a long way since the days of type writers, cassette tapes, VCR's and the first mobile phone (now known as 'the brick'). We now live in a world where technology is a part of our daily lives and our slim, smart phone that can do just about anything and is always by our sides.

If you own a smart phone or a tablet you would know too well that there is an Application (App) available for pretty much anything, so why not consider an App to help you manage your diabetes?

Whether you are looking for a way to track your BGLs, give you a hand with carbohydrate counting or looking for ways to stay motivated, there is an App available for you.

Apps to track

There are many Apps available for FREE download that can help you to log various factors associated with diabetes management such as BGLs, insulin and medication doses, carbohydrate intake, exercise and HbA1c. Some of these Apps have the ability to generate graphs and charts based on the data that you have entered. This can help you and your diabetes team to identify patterns in your blood glucose levels. Identifying patterns can help you to learn about YOUR diabetes and help you and your team adjust your insulin or medications as required.

Apps to count

Many people count carbohydrates as part of their diabetes management. Carbohydrate counting basically means to identify the amount of carbohydrate in meals and snacks. Those who count know too well that it is not that basic and it is often difficult to count the carbs, especially when eating out or trying new foods. Our favourite carbohydrate counting Apps are Australian based and are regularly updated.

Tips when using Apps to help you manage your diabetes:

- Although these Apps can help you manage your diabetes, they should not replace the advice from a health professional especially regarding insulin doses and adjustments.
- Please note that some Apps are American or UK based, however there is the opportunity to change the blood glucose measurement from mg/dL to the Australian measurement of mmol/L.
- When using a carbohydrate counting App make sure it is Australian based as this will coincide with Australian products and measurements.

For an up-to-date comprehensive list of diabetes apps available visit: Type 1 diabetes at: www.diabetessa.com.au

A DIABETES GLOSSARY

Accredited Practising Dietitian (APD):
An APD can provide education around healthy eating and help you to understand carbohydrate foods and how they impact on BGLs. They can make specific recommendations around food choices that take into account your food preferences, lifestyle, any intolerances, cultural background and other conditions such as coeliac disease.

Alpha cells:
Cells in the pancreas that produce glucagon (see glucagon).

Antibody:
A protein that is used by the immune system to identify and neutralise foreign objects such as bacteria and viruses.

Autoimmune disease:
A condition when the body's own immune system destroy particular tissues. In type 1 diabetes the immune system destroys the beta cells that produce insulin.

Basal insulin:
Also known as background insulin, is the insulin administered by people with diabetes designed to replicate the insulin that is usually released by the pancreas between meals and overnight to keep blood glucose levels stable when fasting.

Basal rate:
A continuous supply of insulin delivered by an insulin pump to replicate the insulin that is usually released by the pancreas all day to keep blood glucose levels stable (when fasting).

Beta cells:
The insulin producing cells of the pancreas.

Blood Glucose:
The main sugar that the body makes from food in the diet that is transported through the bloodstream to supply energy to all the cells throughout the body.

Blood glucose monitoring:
A tool used to help people with diabetes check their blood glucose levels. This is done using a blood glucose meter, a test strip and a drop of blood (after pricking the skin with a lancet device).

Blood Glucose Level (BGL):
The concentration or amount of glucose in the blood. This is measured in millimoles per litre (mmol/L).

Blood Pressure:
The pressure of the blood within the arteries which varies in different parts of the body during different phases of contraction of the heart.

Carbohydrate:
Carbohydrate is one of the main macronutrients that is used for energy production for the body. Foods that are made up of starches and sugars are carbohydrates and are broken down into glucose within approximately two hours of digestion. Glucose is stored as glycogen in the muscles and liver.

Carbohydrate counting:
Carbohydrate counting is a tool used to identify the amount of carbohydrate in food. Carbohydrate counting can be a meal planning tool to help ensure consistency in carbohydrate intake or a tool used to help match insulin doses according to the food eaten. Some people will learn to count in carbohydrate portions (10g of carbohydrate) or exchanges (15g of carbohydrate) and others will count each gram of carbohydrate. It is important to work with your diabetes team to determine the best method for you.

Carbohydrate exchange:
A serve of food that contains approximately 15g of carbohydrate (12-18g). A carbohydrate exchange can be a way to estimate the amount of carbohydrate in a meal or snack or be used to keep a consistent carbohydrate intake.

Cardiovascular disease:
A group of diseases affecting the heart or blood vessels. Cardiovascular diseases include arteriosclerosis, coronary artery disease (CAD) such as angina and myocardial infarction (commonly known as a heart attack). Other CVDs are stroke, rheumatic heart disease, cardiomyopathy, atrial fibrillation, congenital heart disease, endocarditis, aortic aneurysms, peripheral artery disease and venous thrombosis.

Cholesterol:
A type of fat that is white, waxy and insoluble. It is produced by the liver in our body and is important for many purposes. Cholesterol is carried around the body by lipoproteins including low-density lipoprotein (LDL) cholesterol and high-density lipoprotein (HDL) cholesterol. LDL cholesterol is known as the 'bad' cholesterol as it can build up and clog up in a person's arteries when levels in the body are high. HDL cholesterol is known as the 'good' cholesterol as it removes cholesterol from the blood vessels and carries it back to the liver, where it can be processed and sent out of the body.

Credentialled Diabetes Educator (CDE):
A health professional that provides diabetes self-management education for people living with diabetes. They play a major role in self-empowering the person with diabetes by focusing on an individual's needs, providing knowledge, integrating clinical care, skills training, motivation and support to aid the prevention of diabetes–related health complications.

Coeliac disease:
An autoimmune disease that causes a permanent intolerance to gluten – the protein found in wheat, oats, barley, rye and triticale. Ingestion of gluten can damage the small intestine leading to nutrient malabsorption and long term health complications. It is estimated that up to 10% of people with type 1 diabetes have coeliac disease.

Complications:
Over time blood glucose levels above a person's target range can damage the body's small and large blood vessels affecting various organs. This damage is referred to as diabetes-related complications or diabetes complications.

C-peptide:
A substance the pancreas releases into the blood stream in equal amounts to insulin. C-peptide levels may be measured to confirm a diagnosis of type 1 diabetes as a low c-peptide level is indicative of a person not producing insulin.

CSII:
Continuous subcutaneous insulin infusion (insulin pump). Delivers a continuous supply of insulin into the body based on the individual's requirements via a small electronic device the size of a pager.

Dawn phenomenon:
The early morning (4am-8am) rise in blood glucose levels.

Diabetes:
A chronic condition where the body either cannot produce any or enough insulin, or when the insulin does not work effectively enough (insulin resistance). This leads to high blood glucose levels, which can lead to damage of the small and large blood vessels if not managed.

Diabetic ketoacidosis (DKA):
A serious condition associated with insulin insufficiency in type 1 diabetes. (This may occur during illness or infection or when an insulin dose is missed). If insulin is not available to transport glucose into the body's cells for energy, the body will break down fat stores as an alternative energy source. The breakdown of fat will produce a by-product called ketones, which upsets the chemical balance in the blood. DKA will lead to severe dehydration, which will require hospitalisation.

Endocrinologist:
Diabetes medical specialist.

Exercise physiologist:
University qualified allied health professionals that follow medically based research and best practice guidelines for exercise.

Fasting:
The metabolic status of a person who has not eaten overnight or to the metabolic status achieved after complete digestion and absorption of a meal.

Gestational diabetes mellitus (GDM):
A condition in which women without previously diagnosed diabetes exhibit high blood glucose (blood sugar) levels during pregnancy.

Glucose:
A simple sugar that is a component of many carbohydrate foods that is an important energy source for the body.

Glycemic Index:
Is a ranking of carbohydrate foods based on how they are digested and the effect they have on blood glucose levels. Foods with a low glycemic index will break down into glucose more slowly and therefore produce a more gradual and relatively low rise in blood glucose levels. Foods with a high glycemic index will break down faster and produce a more rapid and higher rise in blood glucose levels. Not only is this not ideal in order to achieve optimal glycaemic control, meals and snacks based on high GI carbohydrates may not be as satiating.

Gastroparesis:
A digestive disorder, which means 'paralysis of the stomach' causing delays in the stomach emptying liquids and solids. This is a result of damage to the nerves of the stomach caused from high blood glucose levels. Symptoms can include: severe abdominal pain, nausea, heartburn, vomiting, early satiety at mealtimes, weight loss and malnutrition.

Gestational diabetes:
A type of diabetes that can occur during pregnancy. Screening between the 24th -28th week of pregnancy is carried out.

Glomerular filtration rate (GFR):
A measure of the kidneys ability to filter and remove waste products from the body.

Glucagon:
A hormone that is produced by the alpha cells in the pancreas. Glucagon can stimulate the production of glucose by the liver helping to increase blood glucose levels when hey fall too low.

Glucose:
A simple sugar (monosaccharide).

Glycogen:
A polysaccharide (long chain) of glucose that is stored in the liver and muscles. The stored glycogen is converted to glucose and released into the blood-stream when needed.

Haemoglobin:
A protein in the red blood cells responsible for transporting oxygen in the blood.

Haemoglobin A1C (HbA1c):
The HbA1c is a laboratory test that shows the average level of blood glucose over the previous three months. When glucose enters the blood-stream it can attach to the haemoglobin which becomes a 'glycated haemoglobin' molecule known as HbA1c. The higher the HbA1c, the higher the average blood glucose. Because the red blood cell has a life span of approximately 120 days, the HbA1c can reflect average blood glucose levels over 8-12 weeks. The HbA1c can be used to help make decisions about a person's diabetes management.

Honeymoon period: Is the period of time following diagnosis of type 1 diabetes when the dose of injected insulin may be quite small due to the remaining or temporarily recovered insulin secretion from the pancreas. This period, although temporary can last weeks, months or years.

Hyperglycaemia:
Hyperglycaemia is defined as a blood glucose level above 7mmol/L when no food has been eaten for at least eight hours and above 11mmol/L two hours after a meal. However, symptoms of hyperglycaemia (polydipsia, polyuria and polyphagia) may only be felt when blood glucose levels are above 15mmol/L.

Hyperlipidaemia:
Elevated blood fats (lipids) such as cholesterol, LDL-cholesterol, non-HDL cholesterol and triglycerides.

Hypoglycaemia:
Low blood glucose level (a blood glucose level of 4mmol/L or below).

Hypoglycaemia unawareness:
When a person with diabetes does not feel or recognise symptoms of hypoglycaemia.

Insulin:
Insulin is a hormone made by the beta cells in the pancreas. Insulin helps to move glucose from our blood stream into our boy's cells to be used as energy.

Insulin pump:
A small computerized device that delivers a continuous supply of insulin into the body based on the individual's requirements.

Insulin resistance:
The body's inability to effectively use the insulin that is produced by the pancreas.

Insulin sensitivity:
Describes how sensitive the body is to the effects of insulin. Someone described as insulin sensitive will require smaller amounts of insulin to lower blood glucose levels than someone who has low sensitivity.

Intramuscular Injection:
A technique used to deliver a medication deep into the muscles. This allows the medication to be absorbed into the bloodstream quickly.

Islet cell antibodies:
Proteins that are present in the blood of people who may be developing type 1 diabetes or are newly diagnosed with type 1 diabetes. Islet cell antibodies indicate that the body's immune system has attacked the beta cells in the pancreas – leading to type 1 diabetes.

Islets of Langerhans:
Group of cells (alpha cells, beta cells and delta cells) that secrete hormones.

Ketones:
A by-product caused by the conversion of fat as an alternative fuel source due to inadequate insulin. Also see diabetes ketoacidosis.

Latent autoimmune diabetes in adults (LADA):
A form of diabetes mellitus type 1 that occurs in adults, often with a slower course of onset.

Lipohypertrophy:
Fatty lumps caused by the accumulation of extra fat where insulin has been regularly injected.

Macrovascular disease:
Damage of the large (macro) blood vessels in the body.

Microvascular disease:
Damage to the small (micro) blood vessels in the body.

Micro albuminuria:
A term to describe a moderate increase in the level of urine albumin. It occurs when the kidney leaks small amounts of albumin into the urine and in diabetes is an early sign of kidney disease (nephropathy).

Nephropathy:
Any disease of the kidneys that affects the tiny blood vessels in the glomerulus, a key structure in the kidney composed of capillary blood vessels. This structure is critical for blood filtration in the kidneys.

Neuropathy:
Diseases or dysfunction of the nerves. Nerves at any location in the body can be damaged from injury or disease. Neuropathy is often classified according to the types or location of nerves that are affected but can also be classified according to the disease causing it.

Ophthalmologist:
An eye surgeon and medical eye specialist who treats eye disease with medications and/or surgery.

Optometrists:
An eye specialist who performs eye and vision examinations, prescribes spectacles and contact lenses and treats minor eye disorders with medication such as eye drops.

Peripheral Neuropathy:
Disease or damage affecting nerve(s) apart from the brain and spinal cord. This may impair movement, sensation, organ or gland function, depending on the type of nerve affected and may exhibit signs and symptoms such as tingling, numbness, weakness, burning pain or unusual sensations in the affected area.

Polyphagia:
Polyphagia means having a strong, excessive hunger. This can be normal or related to an underlying medical condition such as diabetes.

Polyuria:
Polyuria is a condition where the body urinates more than usual and passes excessive or abnormally large amounts of urine each time you urinate. Polyuria is defined as the frequent passage of large volumes of urine - more than 3 litres a day, compared to the normal daily urine output in adults of about one to two litres.

Post-prandial:
Simply means "after eating a meal." For those with diabetes it refers to blood glucose levels that are taken at two hours following a meal. This is considered the average amount of time that glucose from a meal will reliably show up in your blood to help determine the effect it might have on your blood sugar level.

Pre-prandial:
Simply means "before a meal." For people with diabetes, it refers to blood glucose measurements taken before a meal. This is known as the pre-prandial blood glucose level. A record of pre-prandial blood sugar helps to track the effectiveness of prescribed diabetes medications and/or insulin regimen.

Psychologist:
A professional practitioner or researcher who attempts to understand the role of mental function in individuals and social behaviours, while also exploring the physiological and neurobiological processes that underlie certain cognitive functions and behaviours.

Retinopathy:
Any non inflammatory disease caused by damage to the blood vessels of the light-sensitive tissue at the back of the eye (retina).

Somogyi effect:
When the BGL swings high following hypoglycaemia. The somogyi effect may follow and untreated or undetected hypoglycaemic event overnight an is caused by the release of stress hormones.

Subcutaneous Injection:
An injection using a short needle administered into the subcutaneous layer of the skin or "under the skin" into the tissue layer between the skin and the muscle.

Type 1 diabetes:
An auto-immune condition in which the immune system is activated which then destroy the cells in the pancreas which produces insulin. This results in the pancreas producing little or no insulin.

Type 2 diabetes:
A progressive condition where the body becomes resistant to the normal effects of insulin and/ or gradually loses the capacity to produce enough insulin in the pancreas.

Living diabetesSA

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