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KNOW DIABETES. FIGHT DIABETES.

Everyday life with
Type 1 diabetes

Contents

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Everyday life with Type 1 diabetes

You're bound to have a lot of questions about living with Type 1 diabetes. There's a lot of information out there, and it can be confusing to understand what it all means. We'll help you get to grips with it.

In this guide, we set the record straight, giving you the facts about diabetes and how you can treat it. We tell you what you need to do to look after yourself to stay healthy, and list the care you should get from your diabetes healthcare team.

We also hear from people like you on how they manage their lives with Type 1 diabetes. We give you lots of tips to make your life easier – and there's a handy glossary and index at the back to help you get the most out of this guide.

If you sometimes find it all a bit overwhelming, there's a lot of support available to you, so don't be afraid to ask for help from your healthcare team.

And you can always send us an email or pick up the phone if you want to talk (see the back cover for ways to get in touch).

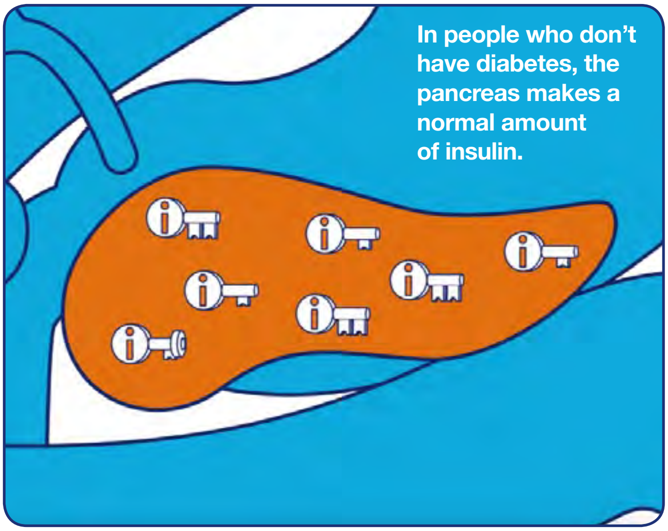
Armed with all the facts, and understanding what you and your healthcare team need to do, means you can look forward to living a full, long and healthy life with Type 1 diabetes.

What is Type 1 diabetes?

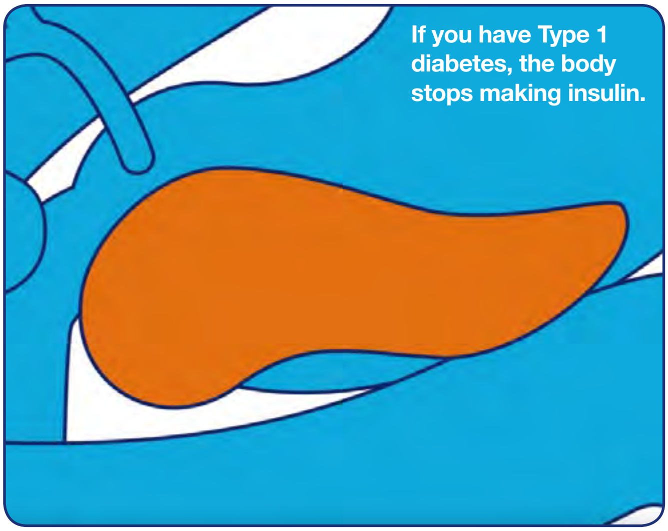
Type 1 diabetes is an autoimmune condition. It develops when the insulin-producing cells in your body have been destroyed and you can't produce insulin.

It's not caused by your lifestyle.

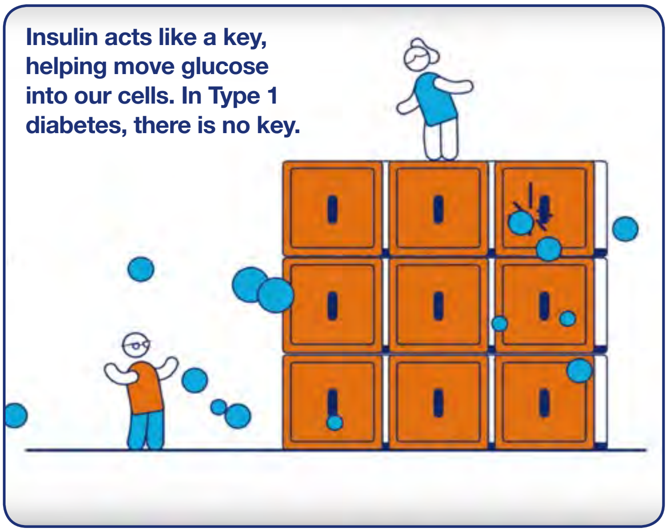
To watch our 'What is Type 1 diabetes' video, go to www.diabetes.org.uk/t1-what-is



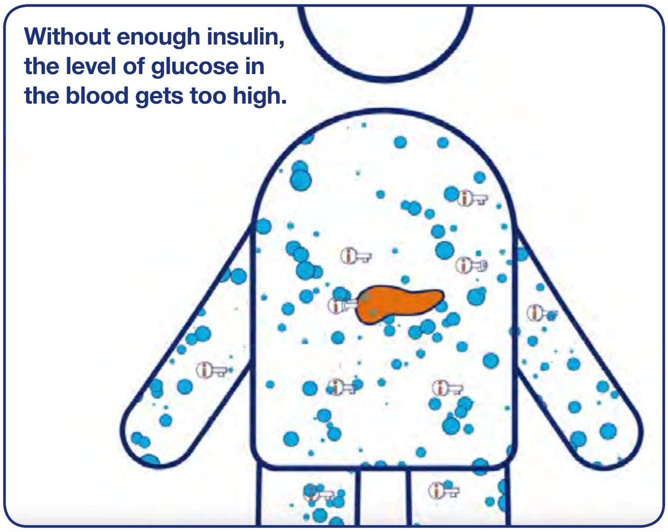
In people who don't have diabetes, the pancreas makes a normal amount of insulin.



If you have Type 1 diabetes, the body stops making insulin.



Insulin acts like a key, helping move glucose into our cells. In Type 1 diabetes, there is no key.



Without enough insulin, the level of glucose in the blood gets too high.

Type 1 diabetes explained

When you eat, your body breaks down carbohydrates into glucose (sugar). Carbohydrates are in starchy foods, like bread, potatoes and pasta. They're also in fruit, some dairy, sugar and other sweet food.

The glucose is taken into your bloodstream. Insulin is needed to move this glucose into the cells in your body, so that it can be used as energy. In a person without Type 1 diabetes, that insulin is produced by the pancreas.

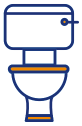
In someone like you, with Type 1 diabetes, an autoimmune reaction in the pancreas has killed off the insulin-producing cells. So you don't make any insulin – and glucose builds up in your blood. We tend to call blood glucose by its other name, blood sugar. This can be an easier way to remember what it is, and it's what we'll call it in this guide.

Symptoms

The build-up of blood sugar leads to lots of different symptoms. Before you were diagnosed, you were probably:

feeling really thirsty

feeling really tired



needing to wee more often

losing weight (your body will have been breaking down fat to try to get energy).

Treatment

It's treated by taking insulin – either by injection, or by using an insulin pump. A healthy diet and physical activity are also really important (see pages 35 and 43).

Who it affects

Type 1 diabetes isn't caused by your lifestyle.

Around 345,000 people in the UK are living with the condition. Most are diagnosed between the ages of 9 to 14, but you can be diagnosed as a younger child, or adult. It's the most common type of diabetes in childhood.

This guide is for you as an adult with Type 1. If your child has been diagnosed with Type 1, see our guide for parents, **Everyday life with Type 1 diabetes for parents**. Order or download it from our shop at **www.diabetes.org.uk/t1-shop** or call 0800 585 088.

Need to know ☆

Type 1 diabetes shouldn't stop you from enjoying a full and active life.

Taking insulin every day is essential. And there are other things you can do to help you manage your diabetes successfully and keep yourself healthy. These include:

- being as physically active as you can
- keeping to a healthy weight
- getting support to look after yourself, like going on an education course (see page 32)
- going to your healthcare appointments.

If Type 1 diabetes isn't managed well, it can lead to devastating complications like heart attacks, stroke, kidney failure, blindness, amputation and death. But there are things you can do to avoid them. This guide is here to help you manage your diabetes and reduce your risk of these complications.

You can also go to our website at **www.diabetes.org.uk** or call our helpline on **0345 123 2399***, or **0141 212 8710***, if you're in Scotland, for information and support.

*Calls may be recorded for training and quality purposes.

Meet Sarah

A Type 1 diagnosis in early adulthood was a shock for Sarah. But diabetes has quickly become part of her life…

“I was diagnosed in February 2015, just before my 23rd birthday – and the day before I was supposed to run a half marathon!

Looking back, even though I wasn’t feeling well, I never put it down to being ill – I just thought I needed to get more sleep. I was eating so much, but still losing weight, gradually needing to go to the toilet more and feeling thirsty. But I just got used to it – it’s funny how much you put up with before you think that, actually, this isn’t normal.

At first, I didn’t really register what my diagnosis meant. I was in so much shock that I asked the doctors if I could still do the half marathon the next day. When the nurse was telling me how to do a finger prick, I thought I’d do it for a few weeks and then I’d work out how to give myself insulin, so I wouldn’t need to do it any more.

About a week later, I saw my diabetes nurse and a dietitian. There were lots of little things that needed to be worked into my day, like when to do blood tests, when to inject and where to inject when I was at work. I was used to grabbing food on the go, and suddenly I was fumbling around in my bag because I’d need to test and inject. But it was really surprising how quickly it became the new normal.

Positive mindset

It probably took a good few months after being diagnosed for it to hit me that I’m going to have diabetes forever, and that I’ll be looking after it every day for the rest of my life. There are times when I think, ‘Why can’t things be like they used to be again?’. But I feel that living well with diabetes is as much about my mindset as knowing how to keep on top of my levels. Having the motivation to keep it under control takes a lot of strength because it would be so much easier if I could forget about it for a day.

Yes, it can be hard, but, I think, what’s always key is having the knowledge and the solution alongside that. Diabetes UK’s message is about how knowing diabetes helps fight diabetes, and that really runs true with my experience. It’s only with the knowledge that I was lucky to get early on that really helped me get control.”

Some questions

Will my family be at risk of getting Type 1 diabetes?

Most people – 85% – who develop Type 1 diabetes don't have any family link to it. But, if your immediate family have it, the risk is higher than the general population. On average, the stats are:

- if a mother has Type 1, the risk is about 2% to 4%
- if it's a father, the risk is about 6% to 9%
- if both parents have Type 1, the risk is up to 30%
- if a brother or sister has it, the risk is 10% (but 10% to 19% for a non-identical twin, and 30% to 70% for an identical twin).

What's the difference between Type 1 and Type 2?

If you have Type 1 diabetes, your body can't produce insulin at all. People with Type 2 diabetes can produce insulin – but not enough, or it doesn't work properly.

Unlike Type 1, the risk of developing Type 2 is affected by lifestyle, among other things.

Type 2 usually develops at an older age than Type 1 – over the age of 40. But, in people of African-Caribbean, Black African or South Asian origin, it often appears from the age of 25.

Is Type 1 diabetes serious?

The complications can be serious. But this guide is here to help you manage the condition, make sure you're getting the right care and reduce your risk of complications.

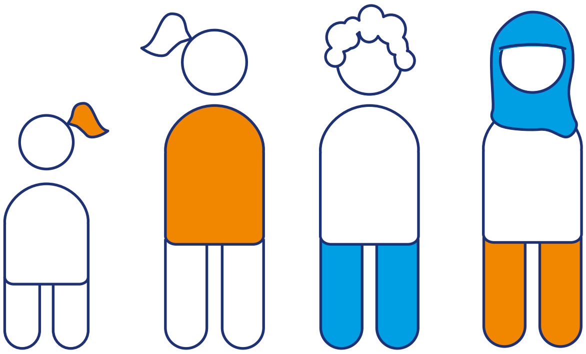
Is there a cure?

No, but there's ongoing research into transforming care and treatment, and to help find a cure – go to **www.diabetes.org.uk/t1-research** to see how we fund vital projects and the breakthroughs we've made so far.

Talk to us

Do you have a question about Type 1? We can give information and advice on all aspects of living with diabetes. Get in touch for answers, support or just to talk to someone who knows about diabetes. Call our helpline on **0345 123 2399*** or email **helpline@diabetes.org.uk**

If you're in Scotland, call **0141 212 8710*** or email **helpline.scotland@diabetes.org.uk**



*Calls may be recorded and monitored for training and quality purposes.

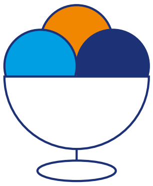
Putting the record straight

People say lots of different things about diabetes – but not all of it's true. And knowing the facts about diabetes is important when it comes to managing it. There's so much information out there, and it's often difficult to know what's right and what's not.

Here are some of the most common myths about diabetes…

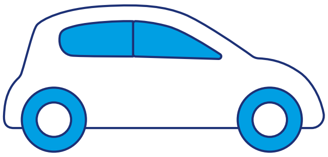
Myth: "Having diabetes means you can't do certain jobs"

It shouldn't stop you from getting and keeping a job. But people still face blanket bans in some areas of employment, including the armed forces. We campaign to lift discriminatory blanket bans and have been successful. Find out more about work and diabetes on page 60.



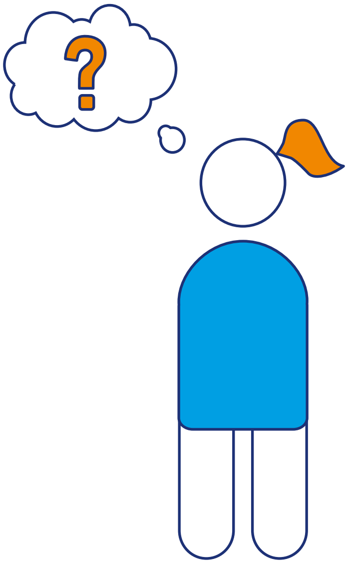
Myth: "People with diabetes can't have sugar"

That's not true. But as a nation, we eat too much sugar and could all do with reducing how much we eat. We don't need sugar in our diets – that's why sugary drinks and foods should only be eaten in small amounts and not very often. See page 35 for more on healthy eating.



Myth: "It's not safe to drive if you have diabetes"

Yes, you can drive. So long as you have control of your blood sugar levels, it's as safe for you as it is for anyone else out there. For more on driving, go to page 56.



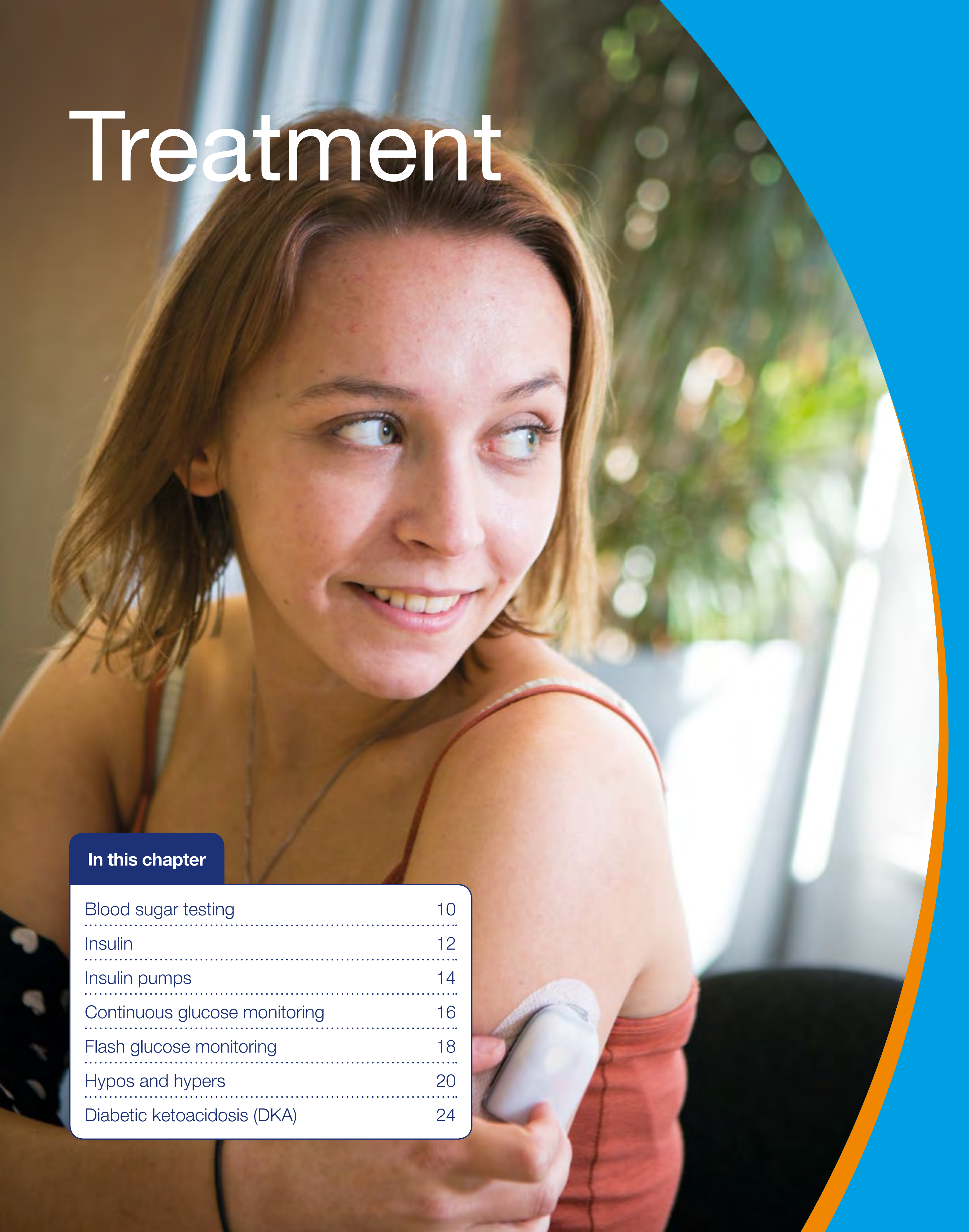
Myth: "People with diabetes can't play sport"

That's rubbish. It's good for you to be active – physical activity and exercise have lots of health benefits and reduce your risk of diabetes complications. For more on exercise, go to page 43.

Myth: "People with diabetes should eat 'diabetic' foods"

There's no need to eat special 'diabetic' foods. They don't have any health benefits, are often high in fat and calories, and can cause an upset stomach. In fact, companies aren't allowed to label their food and drinks 'diabetic' anymore under EU regulations.

Treatment



In this chapter

Blood sugar testing

Regularly testing your blood sugar with a blood glucose meter is an essential part of managing your diabetes. It helps prevent lows (hypoglycaemia) and highs (hyperglycaemia). It also lets you and your healthcare team track your levels over a period of time, and gives you the best chance of avoiding long-term complications.

After time, it should become part of your day-to-day routine. The ideal range to aim for is different for each person, so your target levels must be agreed between you and your diabetes team. As a guide, the target blood sugar ranges for adults with Type 1 are:

- on waking: 5–7mmol/l
- before meals at other times of the day: 4–7mmol/l
- 90 minutes after meals: 5–9mmol/l.

My agreed targets

On waking:

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Before meals at other times of the day:

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90 minutes after meals:

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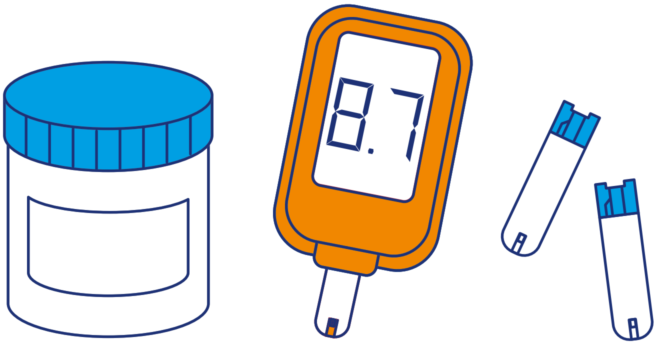


Tips for testing blood sugar

1. Wash your hands with water – don't use wet wipes as the glycerine can affect the test result.
2. Make sure your hands are warm – it's easier to get blood and it doesn't hurt as much.
3. Prick the side of your finger – not the index finger or thumb. Don't prick the middle, or too close to a nail.
4. Use a different finger each time and a different part.
5. Keep a diary of your results – you'll be able to spot trends and help your healthcare team decide whether your treatment needs to change.

Need to know ★

- Ask what your target is. It's important to know your target blood sugar level – it lets you and your healthcare team know how you're doing, and if things can be improved.
- Insulin, food and activity levels affect your blood sugar levels every day. If you understand how they affect your own levels, you can change what you eat, what you're doing and get advice on your medication.
- It's all about knowing your own diabetes so that you can plan it around your life (and not the other way around).

Some questions ?

What blood glucose meter should I use?

It can be confusing. New meters come on to the market all the time, so it can be tricky choosing the right one. There are also some computer software packages available that can show trends in your blood sugar levels.

The best thing to do is to ask your healthcare team for advice on a meter that suits what you need. It's essential that you're taught how to carry out a test properly – otherwise you could get incorrect results. This means you could then take the wrong amount of insulin.

If you choose to buy your own meter, you might not get a prescription for the test strips it uses. Check with your healthcare team.

My doctor won't prescribe any more test strips for me. What can I do?

We're aware that this is happening to about one in four people.

The best thing you can do is to challenge it with your GP practice. And if that doesn't work, then with your local health decision makers. Most people who challenge it like this normally find that the decision is reversed.

If this is something you are concerned about, see our support pack: **www.diabetes.org.uk/t1-test-strips**

Meet Amanda

Between travelling, trekking and looking after her daughters, Amanda also worked as a regional fundraiser for Diabetes UK

"I was diagnosed with Type 1 diabetes in October 1990 at the age of 11. It was a huge learning curve. I'll never forget my mum and dad pacing the ward learning how to inject by practising into an orange.

Since I've worked for Diabetes UK I've learned every single person is different. I didn't realise how many people really struggle with the condition.

It can be really emotional at times but I'm all for getting the word out about the serious nature of diabetes.

I've also become aware of the huge difference in care across the UK. The funding for diabetic management tools and technology varies massively and doesn't seem fair. Everyone with diabetes should be given the same treatments regardless of where they live.

To mark my 25th year of being diagnosed, I trekked the Great Wall of China and raised more than £25,000."

Insulin

Insulin is a hormone made in the pancreas. It helps us move glucose (sugar) from our blood into our cells where it's used for energy.

The carbohydrates we eat are broken down into sugar in the blood. They're in starchy foods (like bread, potatoes and pasta), as well as fruit, some dairy products, sugar and other sweet food.

With Type 1 diabetes, you don't make any insulin. So you need to take it either by injection or pump.

Learning how to use insulin

Your healthcare team will explain to you exactly how you inject insulin. They'll also explain how to use a pump if – after taking their advice – that's what you choose. See page 14 for more on pumps.

When to have insulin

It depends on the type of insulin. Your healthcare team will tell you when to take these types of insulin, and times when you may need to do something different.

Injecting insulin

You'll need to inject insulin with a needle or a special pen. Your healthcare team will show you how. The places to inject are usually the thigh, bottom, stomach and upper arm. Basically, where there's plenty of fatty tissue. These are the steps you'll be shown:

- Decide where you're going to inject.
- Make sure your hands and the place that you're injecting are clean.
- If you're using a pen, squirt out two units of insulin into the air. This makes sure the top of the needle is filled with insulin.
- If the nurse has told you to do this, lift a fold of skin (but not so tightly that it causes your skin to whiten or go pale, or is painful), then insert the needle at a 90 degree angle. You shouldn't need to do this unless you're very thin – check with the nurse.
- Put the needle in quickly.
- Inject the insulin. Make sure the plunger (syringe) or thumb button (if using a pen) is fully pressed down and count to 10 before removing it.
- Let go of the skin fold if you're doing this method, and dispose of the needle safely.
- Always use a new needle. Reusing a needle makes it blunt and painful to inject with.

Tips for injecting

1. Change the place you inject. Don't go to the same place – rotate where you inject. This stops the build-up of small lumps under the skin. These lumps don't look or feel very nice and they make it difficult for your body to absorb the insulin properly.
2. If you're finding it difficult or painful to inject, speak to your nurse who'll be able to help.

Some questions ?

Do I have to pay for my insulin?

No – all your prescriptions are free when you have Type 1 diabetes. But if you're in England, you'll need to have a medical exemption certificate to claim your free prescription, unless you're 60 or over. Go to **www.diabetes.org.uk/t1-prescriptions** for more details.

Where can I keep my insulin?

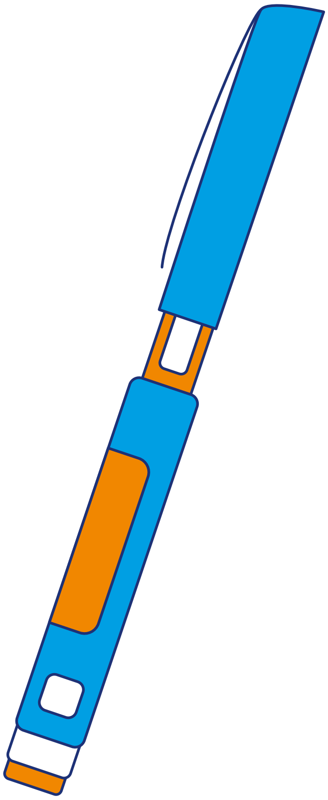
All insulin needs to be kept at temperatures lower than 25°C/77°F, ideally 2–6°C/36–43°F.

Normal room temperatures are below 25°C, but they can be warmer in the summer, so any insulin you're not currently using should be stored in the fridge all year long. Don't put it in – or too close to – the freezer compartment, though, as the insulin may be damaged.

Throw away any insulin that's been out of the fridge for 28 days or more. Some insulins need to be stored differently, so always read the patient information leaflet (PIL) that comes with yours.

Need to know ☆

- Different insulins are absorbed at different rates from different injection sites. And there are some things that can speed up the action of the insulin too, like:
  - heat: sunbathing or a hot bath
  - exercise: for example injecting your leg just before you go for a run, so try a different place to inject instead
  - massage.
- Always dispose of needles in a special sharps disposal bin, not a rubbish bin. It's also where you need to put used lancets (the device used for a blood sugar test).
- Sharps disposal bins and needle clippers are free on prescription. Talk to your clinic about how to dispose of the boxes when they're full.



Insulin pumps

An insulin pump gives you regular insulin throughout the day. It's instead of having injections.

You get the insulin via a tiny, flexible tube (cannula), inserted under the skin. The cannula can be left in for two to three days. You'll then need to change it with a new one and move it to a different place.

With a pump, you can give yourself extra insulin when you're eating. It's called the 'bolus' dose. Your healthcare team will help you work out how much insulin you need.

There are pros and cons to having an insulin pump.

Pump pros

- You'll have better control of your blood sugar levels, with fewer highs and lows (see page 20).
- You'll need fewer injections. The cannula only needs replacing two or three times a week.
- You'll have more flexibility with what, when and how much you eat.
- There's less chance of highs and lows when you're exercising.
- It's easier to predict the absorption of insulin than injections.
- You can change your basal (background) insulin if you're ill.
- You'll have more accuracy at bringing down high blood sugar levels.
- You'll have better control of blood sugar levels when travelling across time zones.

Pump cons

- You'll need to test your blood sugar levels more often – the insulin is short-acting, which means you constantly need to be aware of how much insulin you need.
- You need to have the pump constantly attached, with only short breaks for a shower or exercise.
- There's a risk of infection from the cannula.
- The infusion line can become blocked, which means changing it more often.
- A lot of time is needed to learn about the pump and your diabetes, especially in the beginning.

Tips for getting help with a pump

1. You should get training from your healthcare team when you start to use a pump.
2. If your team doesn't have experience of using them (it's rare, but does happen), then you may need to see another team.
3. There's also a lot of support from the company that makes the pump. Most have helplines you can call.
4. INPUT (**www.inputdiabetes.org.uk**), IPAG (in Scotland, **www.iPAG.co.uk**) and Insulin Pumpers UK (**www.insulin-pumpers.org.uk**) are support groups for pump users. It's worth getting in touch with them.

Some questions

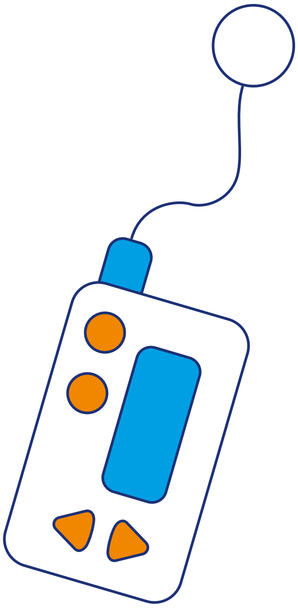
Can I use a pump?

NICE (the National Institute for Health and Care Excellence) has certain criteria that people should meet in order to use a pump. You can find this by going to the NICE website at **www.nice.org.uk** and searching for 'TA151'.

Talk to your healthcare team about these criteria and whether they think a pump is a good idea for you.

Need to know

- If you'd like to use a pump, talk to your healthcare team about whether it's suitable.
- If you use a pump, join a support group (see 'Tips for getting help with a pump', on page 14).



Continuous glucose monitoring (CGM)

CGM is a small device that sits under your skin. It measures your blood sugar levels continuously, day and night.

It shows trends in your levels, and alerts you to highs and lows. And as it measures every few minutes, you can get a graph of your blood sugar levels over time.

There are two types:

- **Real time.** Checks your blood sugar levels at any time. You can also download them.
- **Retrospective.** You can't check in real time – you need to download and look back at results.

A CGM has three parts:

- A sensor that sits just under your skin. It's usually worn for seven days before you replace it.
- A transmitter attached to the sensor that sends your blood sugar levels to your display device.
- A display device showing your blood sugar levels. It's either a separate handheld device (standalone CGM) or a pump (integrated system).

A CGM comes with software to analyse results. You can see patterns in your blood sugar levels.

CGM doesn't actually measure your blood glucose levels, but the amount of glucose in the fluid that surrounds your body cells – called interstitial fluid. There is a small time delay when checking this fluid, especially after eating or if you're exercising. So, you'll still need to do a finger-prick test if you're thinking of taking more insulin or treating a hypo.

As with a pump, there are pros and cons:

CGM pros

- Tracks blood sugar levels all through the day and night.
- Shows your levels at times you don't normally test, like at night.
- Shows trends when levels are starting to rise or drop. You can then do something about it sooner.
- Generally, not so many finger-prick checks.
- Can help improve your HbA1c (see page 26), as you can tailor your insulin dose more carefully.
- Can help reduce hypos, as you see a downward trend before it happens.
- Can set an alarm for high/low levels.

CGM cons

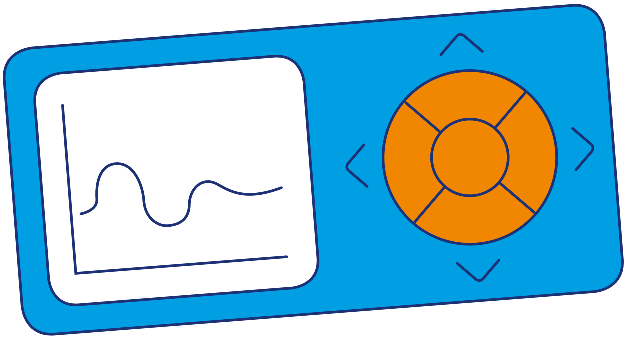
- Too much information could confuse or worry you.
- You still need to do some finger-prick checks.
- You might not like wearing the sensor.
- You need to be motivated to use the information.

Tips for getting a CGM for a short time

1. You might find it useful to use a CGM for a week or two, to look at your blood sugar level trends. You can then look at these with your healthcare team to see if you need to make any changes to your treatment. Ask whether they think it's worthwhile for you, and if it's available.
2. As long as your clinic has a CGM it can loan out like this, you don't need to worry about funding. But there could be a wait.

Need to know ☆

- You need to calibrate a CGM by checking your finger-prick blood sugar levels, generally twice a day.



Some questions ?

How can I get a CGM?

If you want a CGM long-term, it'll need funding. They're available on the NHS, but not for everyone. The NICE guidelines say that CGMs are:

- Not recommended for all adults with Type 1. But can be considered for people who have:
  - had more than one severe hypo in a year without obvious cause
  - complete hypo unawareness
  - more than two hypos a week, with symptoms that affect day-to-day life
  - extreme fear of hypos
  - an HbA1c level of 75mmol/mol, despite testing at least 10 times a day.
- Used at least 70 per cent of the time.
- Real-time CGMs need to be provided by a centre expert in using it, as part of strategies to improve HbA1c levels and reduce hypos.

You can buy your own, but they're expensive. Around £1,000 for a standalone system, or £500 if you already have a pump. Sensors are about £60 each.

It's best to speak to your healthcare team first, to see if you're eligible under NICE criteria.

Flash glucose monitoring

A flash glucose monitor is made up of a small sensor you wear just under your skin. There's also a reader that you use to scan the sensor whenever you want to. The reader shows your blood sugar levels and the trend of your levels. There's currently only one type available.

The software lets you analyse your results and see patterns in your sugar levels, and can help improve your diabetes management.

Like the CGM, it's actually not your blood sugar levels it measures, but the amount of glucose in the fluid surrounding your cells (called interstitial fluid).

The pros and cons are similar to those for CGM.

But, unlike a CGM, you can't set an alarm for high or low blood sugar levels, so it won't help you recognise a hypo.

How can I get a Flash monitor?

The NHS announced an end to the flash glucose monitoring postcode lottery in England. From April 2019, the life-changing technology will be available on prescription across England to those who meet the criteria – no matter where they live. This follows announcements already about availability in Wales and Northern Ireland. All but one area in Scotland has also agreed access. This is a huge step forward for people with Type 1 diabetes.

Find out more about how to get Flash at **www.diabetes.org.uk/t1-flash**

Meet Adrian

Adrian has been using a flash glucose monitor for more than two years. It's completely changed the way he manages his Type 1 diabetes

"I've lived with Type 1 diabetes since I was diagnosed 19 years ago. In the early days, I suffered night-time hypos which sometimes caused alarming seizures. At the time, I used to test my blood sugar using a meter, two to four times a day. I always checked at bedtime and 1:30am (because of the night-time hypos), but apart from that only when I had reason to suspect lows or highs.

When I came across reports of Flash in 2015, I could see immediately this offered a real leap forward in helping me better understand my blood sugar levels – and not only the current figure but also whether it was rising or falling.

This little piece of tech has significantly changed how I manage my diabetes. I now test multiple times a day – typically more than 20 – yet it's far easier and more discreet than finger-prick testing. And I'm able to keep far closer to target levels, not only by reacting to the current reading, but more importantly to the trend arrow.

My average glucose reading is now between 7 to 8% [53–64mmol/mol], and has fallen significantly. My most recent HbA1c reading was 5.9% [41mmol/mol], having been over 8% [64mmol/mol] a few years ago."

Advertisement

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Sure and simple
blood glucose and β-ketone
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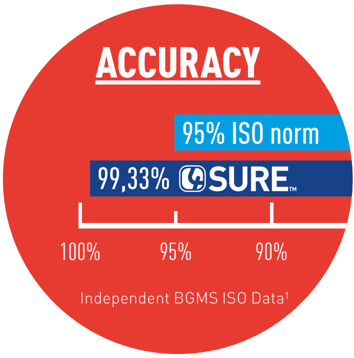
Diabetes : M
Nipro has partnered with Diabetes:M and offers you free access to the full functionality of their award winning app.



Visit our new website to learn more:

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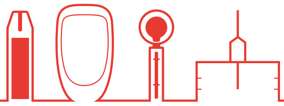

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1. Assessment of System Accuracy, Intermediate Measurement Precision, and Measurement Repeatability of a Blood Glucose Monitoring System Based on ISO 15197. Jendrike N, *et al.*, J Diabetes Sci Technol. 2018 Dec 14.

Please check with your GP or nurse to see if this meter is suitable for you.

Hypos and hypers

Hypos

A hypo or hypoglycaemia is when your blood sugar level is too low – that's below 4mmol/l.

You're likely to have a hypo at some stage.

Hypo signs

They can come on quickly. Everyone has different symptoms, but the most common ones are:

- trembling and shakiness
- sweating
- becoming anxious or irritable
- becoming pale
- palpitations and a fast pulse
- lips feeling tingly
- blurred sight
- feeling hungry
- tearfulness
- tiredness
- headache
- confusion.

If you test your blood sugar levels regularly, it can warn of a hypo before you get symptoms.

Why they happen

You can't always know why, but these things make them more likely:

- missing or delaying a meal or snack
- not having enough carbohydrate (like pasta or potato) at your last meal
- strenuous exercise without taking extra carbohydrate or reducing your insulin dose
- taking more insulin than you needed
- drinking alcohol on an empty stomach.

Treating a hypo

You must do something as soon as you notice symptoms, or if a test has shown your blood sugar levels are too low.

If you don't act quickly, it could become worse and you could start feeling confused and drowsy. You could fall unconscious or have a fit.

If you're conscious

Treat the hypo immediately by eating or drinking 15 to 20g of fast-acting carbohydrate. This could be:

- a sugary (non-diet) drink
- glucose tablets
- sweets, like jelly babies
- small carton of pure fruit juice
- glucose gel.

To find out how much you need to take, check the food label to see how much carbohydrate it contains. It's important to check often as products and ingredients, like the sugar and carbohydrate content, can change. If you're not sure how much to take, speak to your healthcare team.

You can get glucose gel on prescription. Someone else can help you take it if you're feeling too drowsy or confused to do it. But it can't be given to you if you're unconscious.

The choice of hypo treatment is up to you. Some people choose to get their hypo treatment on prescription, while others buy theirs. Your choice may also depend on what works best for you, taste, convenience, or how easy it is to store or carry around. Your healthcare team can help you decide.

After a hypo, you may need to then eat or drink a bit more: 15 to 20g of a slower-acting carbohydrate to stop your sugar levels going down again. It could be a sandwich, a piece of fruit, cereal or milk. Or, it could be your next meal if that's due.

If you become unconscious

Someone else needs to act very quickly. They should:

- put you into the recovery position (on your side with head tilted back and top knee bent)
- give you a glucagon injection (if you have been prescribed these)
- call an ambulance if there isn't a glucagon kit or you haven't recovered 10 minutes after the injection
- call an ambulance immediately if no one is trained to give a glucagon injection.

Make sure your family and friends know they shouldn't try to give you any food or drink (or put anything in your mouth) when you're unconscious or unable to swallow.

Tips for preventing a hypo

1 Test your blood sugar levels regularly.

2 Take your insulin correctly.

3 Don't miss a meal.

4 Try to estimate carb counts as accurately as possible.

5 Eat more carbohydrate if you're more active than normal.

6 Don't drink alcohol on an empty stomach or drink too much alcohol.

Need to know ★

- Keep hypo treatments with you at all times.
- Check the carbohydrate content of your hypo treatment regularly, as products can change.
- If you have night-time hypos, test your blood sugar levels before bed and during the night. Speak to your healthcare team about the best times.
- It's a good idea to carry some diabetes ID, like an identity card, bracelet or necklace.
- If you have a hypo, don't go for foods rich in fat like chocolate or biscuits. The fat slows down how quickly the sugar is absorbed and they don't work quickly enough.

Some questions ?

Should I keep my blood sugar high to avoid hypos?

No, it's bad for you to live with high blood sugar levels. You could feel thirsty, go to the toilet often and feel tired. And in the long-term, it's much worse. It could cause complications like blindness, heart attack, stroke, kidney disease and lower-limb amputations. It also risks diabetic ketoacidosis (DKA) (see page 24).

How will a hypo affect my blood sugar levels?

After a hypo, your blood sugar levels may go up. It could be because the hypo made you hungry and you ate a lot. It could be because the hypo caused your body to try to correct the blood sugar levels from its own store of sugar in the liver. But don't increase your dose of insulin.

Hypers

A hyper or hyperglycaemia is when your blood sugar is too high. That's usually above 7mmol/l before a meal or above 8.5mmol/l two hours after a meal.

Hyper signs

- weeing more than usual, especially at night
- being very thirsty
- headache
- tiredness.

But you don't always have symptoms. Regularly testing your blood sugar is essential so that you can spot a hyper early.

Treating a hyper

It depends on the cause. If you have them often, speak to your healthcare team about your insulin, medications and/or lifestyle. If your blood sugar level is high for a short time, you don't need emergency treatment. But if it stays high, you need to:

- drink lots of sugar-free fluid
- have extra insulin
- contact your healthcare team if you feel ill – particularly if you're being sick.

Tips for preventing a hyper

1. Know your carbohydrate portions and how they're affecting your blood sugar levels.
2. If you're ill, keep taking your insulin even if you're not eating. Contact your healthcare team if you need more information.
3. Be as active as possible.
4. Remember your insulin and any other medications, and always take them correctly.
5. You may need more insulin, so talk to your healthcare team.

Some questions

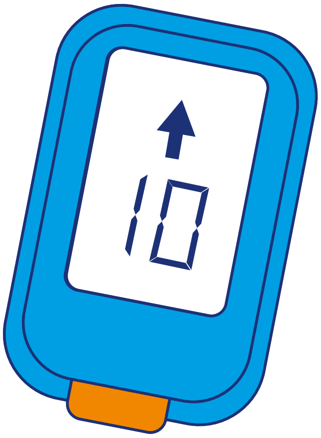
Why do I get hypers?

There are lots of reasons. It may be that you:

- have missed an insulin dose
- didn't have enough insulin for the carbohydrate you've eaten
- are stressed
- are unwell from an infection
- overtreated a hypo.

Need to know

- Recognise the signs of a hyper.
- Know what to do when you're ill.
- Carry diabetes ID.
- If your blood sugar levels are very high, it can be very dangerous and lead to diabetic ketoacidosis (DKA). It's a life-threatening emergency if it's not treated in time (see page 24).

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Diabetic ketoacidosis (DKA)

Consistently high blood sugar levels can lead to diabetic ketoacidosis (DKA). It's a life-threatening emergency if it's not treated in time.

It happens when a severe lack of insulin means the body can't use glucose (sugar) for energy, so it starts to break down other body tissue as another energy source. Ketones are the by-product of this process. They're poisonous chemicals which build up and, if left untreated, cause the body to become acidic.

The most likely times for DKA to happen are:

- when you were diagnosed (if you were very unwell then)
- when you're ill
- during a growth spurt/puberty
- if you haven't taken your insulin for any reason.

DKA usually develops over 24 hours, but can be faster – particularly in young children.

You'll need to go to hospital for treatment. This involves closely monitored intravenous fluids, insulin and glucose.

Recognising DKA

It can cause symptoms like:

- abdominal pain
- nausea and/or vomiting
- rapid breathing and a smell of ketones on your breath (like the smell of pear drops).

If DKA is picked up early enough, it can be successfully treated. The best way to check is by testing for ketones in your blood or urine. You should be given urine ketone testing strips, or blood ketone testing strips (if your blood glucose meter has this function).

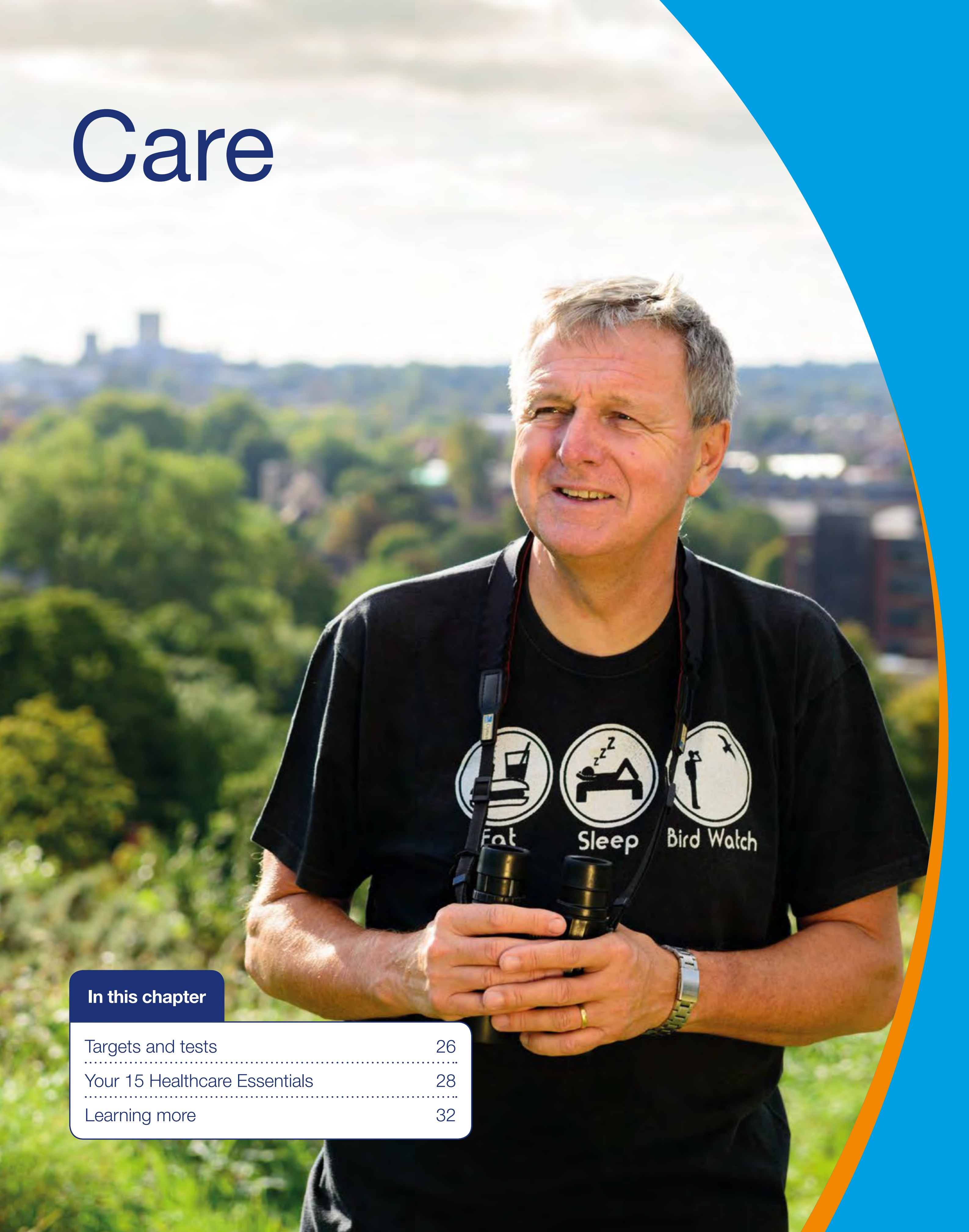
When to test

You should test for ketones if:

- Your blood sugar level is 13mmol/l or more.
- You feel ill. This is a high-risk time for DKA, as your body's response to illness is to release more glucose from the liver into your blood. Even if you're not eating, your blood sugar levels could still go high. So, it's essential you still take your insulin.

If you have high blood sugar levels and any symptoms of DKA, you need to get to hospital for urgent treatment.

Care



In this chapter

Targets and tests

At least once a year, you should have a full review of your diabetes with your healthcare team. It’s called the annual diabetes review. It’s a bit like an MOT of your diabetes.

Your healthcare team will discuss your overall health and your lifestyle, and how they play a part in your diabetes management. Together, you’ll work up a healthcare plan for the year ahead.

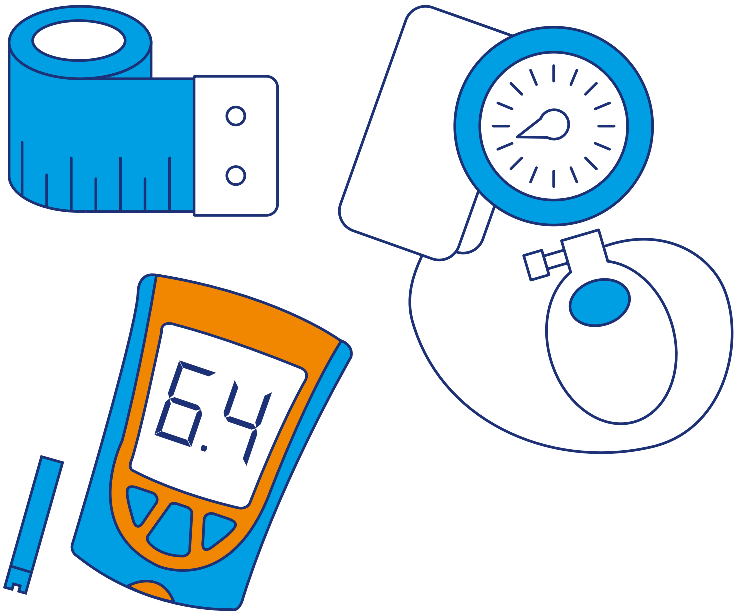
Even though you’ll be looking after your diabetes every day, there are certain things the healthcare team will need to check. This is to make sure you’re in good health. Checks include your blood sugar levels, cholesterol levels, blood pressure, your weight, your feet, your eyes and how well your kidneys are working.

Some of these checks will have targets to aim for. These are:

- **Blood sugar levels.** HbA1c is what we call the long-term measure of blood sugar. It should usually be below 48mmol/mol.
- **Body Mass Index (BMI).** If your BMI figure is 25kg/m^2 (or 23kg/m^2 if you’re from a South Asian background) or higher, you may be told that losing weight would help your diabetes. Your healthcare team will work out your BMI and set a target for you. A healthy range is 20 to 25 and you should be given the support to achieve this. See page 48.
- **Waist measurement.** It should be less than:
  - 80cm (31.5in) for women
  - 90cm (35in) for South Asian men
  - 94cm (37in) for other men
- **Blood pressure.** It should be under 130/80mmHg. Speak to your healthcare team for your individual target.
- **Cholesterol.** Your healthcare team will give you your target for this as there is no general figure to use.

Tips

Keep a copy of your own targets and results. You can then track how you are doing and know where you may need help.



Some questions

What if I don't meet my targets?

Don't worry if you don't reach your targets straight away – it can take time. Once you know what your results are, you and your healthcare team can do something about it. They can help you make changes to your lifestyle and/or adjust your insulin to come closer to meeting your targets.

Need to know

- The general targets are a helpful guide, but the most important ones are the ones you agree with your healthcare team.

Meet Stewart

Going on a diabetes course made life easier

"I was diagnosed with Type 1 diabetes when I was 46. I was fortunate enough to know for a long time what it was like not having diabetes. And I didn't want my life to change significantly, simply because I had it.

I'm now 62, and went on a DAFNE course eight years after being diagnosed.

Before the course, I used to carb count and tried to match my insulin, but it was through trial and error. I would often get it wrong and find myself yo-yoing. What DAFNE does is help you get a grip of that. It took the guesswork out of it.

Before the course, I was really screwing my levels down – I was absolutely paranoid about my sight. One of my main interests is that I'm a birdwatcher and I didn't want that complication. I learned that, if you keep your HbA1c at a reasonable level, you don't have to be hung up about it all the time. I spent years not realising that. I now know my hobbies aren't suddenly going to be taken away from me.

Going on DAFNE also had a huge impact on my family. I realised it was OK to have ice cream again, and it was up to me if I wanted chocolate. As those things started to kick back in, I realised how much my family had been managing themselves around my diabetes.

Meeting others

I think one of the most useful things about the course was spending time in the company of other people with diabetes. Previously, I didn't know whether my experience of diabetes was a normal one, but sharing and learning from each other was a really important part of the course.

A course gives you the toolkit to manage your diabetes. It gives you confidence. By and large I now know that, if I have a hypo, or find myself with a very high reading, I can work out what has happened.

Having diabetes is low down on the list of things that I am because it doesn't have an impact on what I can or can't do any more. It's given me my life back."

Your 15 Healthcare Essentials

We've created the 15 Healthcare Essentials checklist so you can make sure you're getting the best care. Use this list to check you have all the help you need to manage your diabetes successfully.

1 ☐ **Know your blood sugar levels.** These must be measured at least once a year by your healthcare team. It's an HbA1c blood test (the long-term test for blood sugar levels).

2 ☐ **Know your blood pressure.** Your doctor or nurse must measure your blood pressure at least once a year. They'll agree a personal target for you.

3 ☐ **Know your cholesterol (blood fats).** You need to have your blood fats tested each year. You need your own target set.

4 ☐ **You'll be invited to an eye screening appointment every year.** This checks for signs of retinopathy (damage to the eye). A special digital camera takes a photograph of your retina (at the back of your eye) and a specialist looks for any changes. It's a free test, which you'll be invited to. It's not the same as a regular eye test.
If you notice any changes in your sight at any time in the year you must contact your doctor or optometrist.

5 ☐ **Check your feet and legs.** The skin, circulation and nerve supply of your legs and feet need to be examined at least once a year by your healthcare team. That's because people with diabetes are at higher risk of developing problems that can lead to toe, feet or leg amputations. The good news is that these can be avoided by getting your check and following some simple tips for healthy feet on page 74. You should be told if you have any risk of foot problems and if you need to see a podiatrist or specialist foot clinic. You should also check your feet every day. Keep your heels well moisturised and check your toenails. If you see anything unusual, go straight to your doctor.

6 ☐ **Have your kidney function monitored.** There are two tests for kidney function you need each year. One tests your urine for protein (a sign of possible kidney problems). The second is a blood test to measure how well your kidneys are working. Kidney disease is more common in people with diabetes and high blood pressure.

7 ☐ **Take control of your diet.** You can be referred to a dietitian for individualised dietary advice.

8 ☐ **Talk about how you're feeling.** It can be hard living with a long-term condition and you're bound to worry about it sometimes. Talk to your healthcare team about any worries and, if needed, ask for specialist support.

9 ☐ **Go to a group education course.** Your healthcare team should tell you about courses you can attend to help you understand and manage your diabetes. It's a small investment of your time, to help you manage your diabetes for the rest of your life. It's well worth it.

10 ☐ **Know your diabetes specialists.** Diabetes affects different parts of the body and you should be referred to specialist professionals when needed, like a diabetes specialist nurse, dietitian, pharmacist or podiatrist.

11 ☐ **Book your free flu jab.** People with diabetes are at greater risk of severe illness, like pneumonia, if they get flu. You should also be given a personal care plan telling you what steps to take if you are ill.

12 ☐ **Get good care in hospital.** If you have to stay in hospital, you should still receive high-quality diabetes care from specialist healthcare professionals, whether you've been admitted due to your diabetes or not.

13 ☐ **Talk about any sexual problems.** Diabetes increases the risk of sexual dysfunction in both men and women. It can be caused by physical, emotional and lifestyle factors, or medication you might be taking. You should be assessed and given support and education, and referred to an appropriate service if necessary.

14 ☐ **If you smoke, get support and advice to quit.** Diabetes increases your risk of heart disease and stroke, and smoking increases this risk even more.

15 ☐ **Plan ahead if you want a baby.** Your diabetes control has to be a lot tighter and monitored very closely before and during pregnancy. You should expect support from specialist healthcare professionals at every stage from preconception to postnatal care.

Need to know

- Use this list of 15 Healthcare Essentials to check that you're getting the right care during the year, every year.
- You can learn to manage your condition with confidence using our free online education service, Learning Zone. Visit **www.diabetes.org.uk/t1-learning**

Some questions

I don't get all the right checks – what can I do?

You need to speak to your doctor or someone in your healthcare team. Take along a copy of this guide and the 15 Healthcare Essentials checklist. If you need to make a complaint, go to **www.diabetes.org.uk/t1-15-essentials** for more details.

Tips for getting the most out of your appointments

Before an appointment:

1. Decide what you need to know. Write down some points and two or three questions.
2. Take things you think will be useful, like your blood sugar results or a list of your medications.
3. Ask if you'll need any tests before going to the appointment.
4. Ask if you need to bring anything with you, like a urine sample.

During an appointment:

1. Listen and ask questions. Don't be shy to ask questions about anything you don't understand, or if you need more clarification.
2. Take notes to help you remember what's been said.
3. Ask for your test results and what they mean.
4. You can take someone with you to help with questions and remembering what's said.
5. Check that everything you wanted to talk about has been covered.
6. Make a plan with your healthcare professional about what should happen next.
7. Ask who you should contact if you have more questions.
8. Ask if there is any support available in your local area.

After the appointment:

1. Go over what was said. Make a note of anything you need to do before your next appointment.
2. Put your next appointment in your diary.

Your healthcare team

Team member	What do they do?	Name and contact details	When do I see them?
GP	This is the doctor in charge of your care and treatment. If they have a special interest in diabetes or they're an expert, they may play a bigger role in your care. Otherwise, they'll refer you to a diabetes clinic.		
Practice nurse	A nurse from your GP surgery who may support your diabetes care. This depends on their specialist knowledge.		
Diabetes specialist nurse (DSN)	A nurse with specialist knowledge of diabetes who only works with people with diabetes. They usually give support and advice between appointments with things like blood sugar testing, and adjusting your insulin and medication.		
Registered dietitian	An expert in food and nutrition. They give you information and support to help you make changes to your eating habits. You should always see a registered dietitian when you're first diagnosed. You should then have regular reviews with them.		
Registered podiatrist	An expert in feet and legs. You may need to see them to check and manage any problems with legs and feet related to diabetes.		
Ophthalmologist	A doctor specialising in eyes. They can do your retinal screening review and give treatments, if you need them.		
Pharmacist	A qualified pharmacist at your pharmacy or chemist. As well as giving you medicines and supplies on prescription, they can review your medication.		
Psychologist	An expert who can help you if you're worried about your diabetes. If these worries are affecting your life, they offer emotional support.		

Some questions ?

How will I find out who are the members of my team?

First off, it's best to ask at your GP surgery. Don't be shy of asking them to wait while you take a note of names and details. They're likely to be different healthcare professionals – you may not see them all at the same time and place.

Tips for contacts

Agree with your GP who'll be your main contact. This is usually the person you see most often – it may be the GP or practice nurse.

Meet Ross

After going on a DAFNE course, Ross now sees them as an essential part of care

"I thought I knew everything about diabetes and that you couldn't get away from the lows and highs. It wasn't something I thought I could manage properly.

But, on the course, we had people who'd had diabetes for decades, who were amazing to learn from. You realise you're not the only one going through this, and it's OK to sometimes make mistakes – everyone does.

Since going on the course, my blood sugars are way more controlled. There've been less dangerous hypos, less exhausting highs, lower HbA1c, more testing, more informed diet choices – and it's much easier to concentrate at work, and work out at the gym. It feels a lot less like an annoyance, and more something I can control and still live the life I want.

The NHS is already under pressure, and I can see courses really helping to reduce long-term complications, freeing up doctors and nurses. I think the courses are vital for the wellbeing of diabetics in the UK. It can make such a huge difference, allowing us to live healthier, more fulfilled and less stressful lives.

It's five days out of your life and, it's made some huge changes to mine already. I feel a lot more in control, more aware of what I'm eating, drinking and doing, and how that affects my blood sugars."

Learning more

There's a lot to learn about Type 1 diabetes. And knowing about diabetes is crucial to managing your diabetes.

Whether you've just been diagnosed, or have had it for a while, it's never too late to make yourself the expert in your own care and condition. If you do, it's so much easier to live with, and you can reduce your risk of developing complications further down the line.

First off, make sure you're getting the right care by checking it against our 15 Healthcare Essentials checklist, on page 28.

Next, take a free diabetes education course.

People who go on these courses are more confident about their understanding of it – and how to look after themselves.

Everyone in the UK with diabetes should be offered a free course. If you haven't been offered one, make sure you ask for a referral.

If you're unable or don't wish to attend a group course, you should be offered an alternative, which is also one of the 15 Healthcare Essentials.

The two main courses for you with Type 1 are:

- **DAFNE.** Teaches you how to estimate the carbohydrates in each meal and inject the right dose of insulin, so you can fit diabetes into your own lifestyle.
- **BERTIE.** This is an online course. It's interactive and helps you to understand and manage your diabetes in a way that's right for you.

Tips for making the most of your course

1. You'll probably need to take time off work to attend a course – but it's worth it, especially if it helps you to look after your diabetes and health better. If you're struggling to get time off, explain the benefits to your employer. The course provider or your healthcare team may be able to give you materials or a letter for your employer.
2. Courses are informal and friendly – don't be afraid to ask questions.
3. Take the opportunity to mingle and share experiences with others on the course.

Need to know ★

There are also some good, locally based courses that you can find out about from your own healthcare team.

You could also sign up to Learning Zone. It's a new way to learn about your diabetes, combining our clinical knowledge with the experiences of people living with Type 1 diabetes.

To find out more, visit **www.diabetes.org.uk/t1-learning**


mem
6.3
mmol/L
12:44
11-05
GlucoMen areo 2K
GlucoLog RapidCalc
Suggested dose RAI
8.1 units
SAVE
Meal (7.2) + Correction (0.9) - IOB (0.0)
Measured Blood Glucose 7.8 mmol/L
Planned Carbohydrate Intake 58.0 grams
BG not measured / Extra Carbs
Hypo in last 6 hours
Excess Alcohol in last 4 hrs
Planned Exercise
Basal
Diary

Some questions

Can't I just go online for information?

There's lots of useful information online, but you need to be careful. Some websites aren't always accurate. To avoid any out-of-date or wrong information, you should follow this advice:

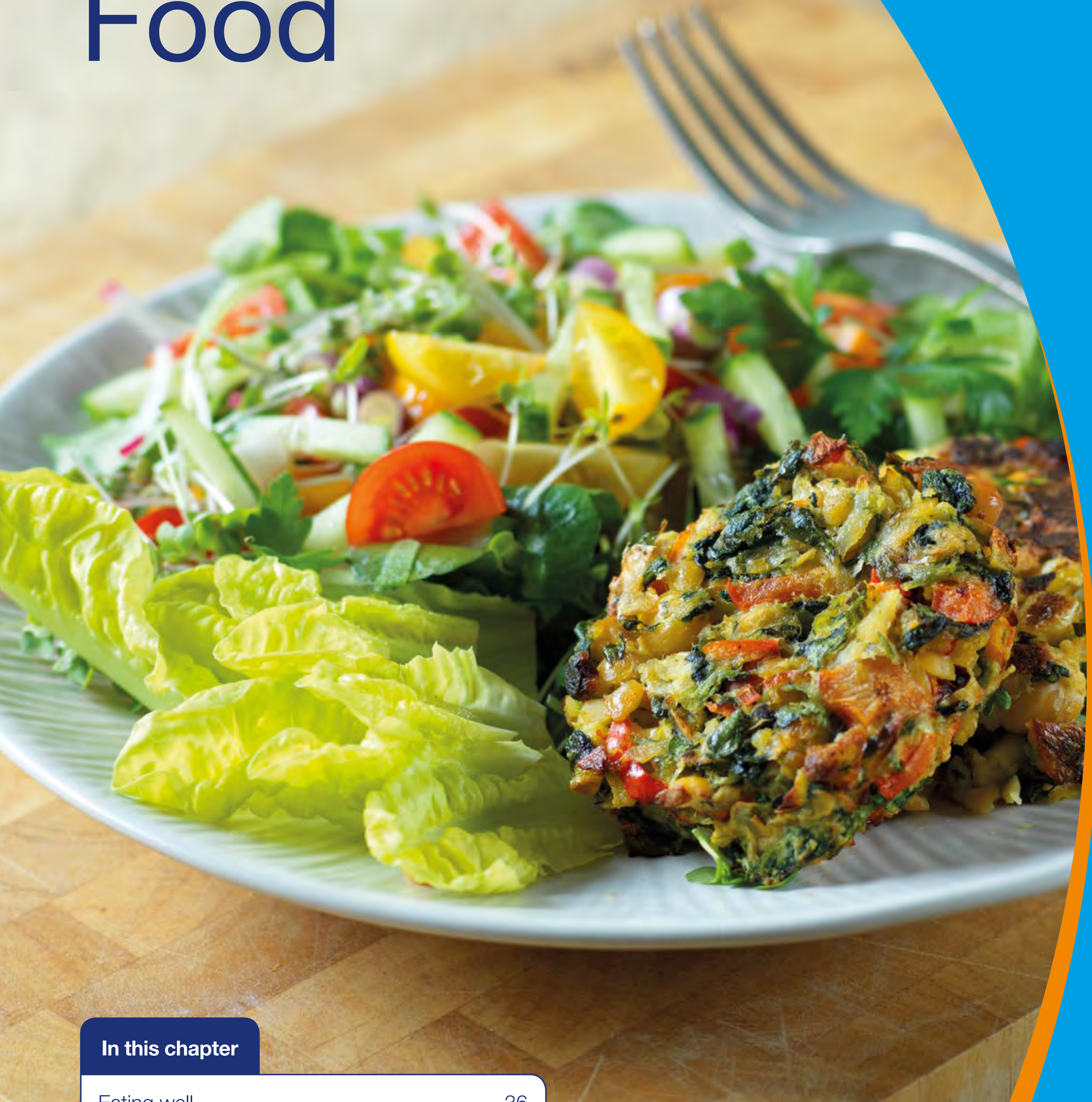
- Speak to your healthcare team about anything you see, hear or read that interests you, or you're not sure about. If you can, take a copy with you.
- Ask your healthcare team to recommend online sites or information.
- Don't trust sites that say there's a cure for diabetes. There is currently no cure.
- Don't try medical products or specialist foods you find online without checking with your healthcare team first.
- Check links on the site are working.
- Find out about the author or where the information has come from. If something sounds unbelievable, it probably is.
- Online forums are a useful way to share knowledge, but check with your healthcare team before you change your treatment.

Sites that have reliable information:

- **www.diabetes.org.uk**
- **www.diabetes.org.uk/t1-forum**
- **www.nhs.uk**
- **www.nice.org.uk**

Advertisement

Food



In this chapter

Eating well

Carb counting is really important to keep your blood glucose levels steady. This is where you estimate how many carbs are in your meal and match it with how much insulin you take.

You might need to lose, gain or maintain your current weight, but it's important to make healthier food choices while you're doing this.

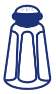
Our top 10 tips

Choose healthier carbs. All carbs affect blood glucose levels so it's important to know which foods contain carbohydrates. Choose the healthier foods that contain carbs and be aware of your portion sizes.

Here are some healthy sources of carbohydrate:

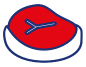
- whole grains, like brown rice, buckwheat and whole oats
- fruit
- vegetables
- pulses, such as chickpeas, beans and lentils
- dairy, like unsweetened yogurt and milk.

At the same time, it's also important to cut down on foods low in fibre, such as white bread, white rice and highly-processed cereals. You can check food labels when you're looking for foods high in fibre if you're unsure.



Eat less salt. Eating lots of salt can increase your risk of high blood pressure, which in turn increases risk of heart diseases and stroke. And when you have diabetes, you're already more at risk of all of these conditions.

Try to limit yourself to a maximum of 6g (one teaspoonful) of salt a day. Lots of pre-packaged foods already contain salt so remember to check food labels and choose those with less salt. Cooking from scratch will help you keep an eye on how much salt you're eating. You can also get creative and swap out salt for different types of herbs and spices to add that extra flavour.

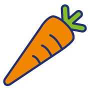


Eat less red and processed meat. If you're cutting down on carbs, you might start to have bigger portions of meat to fill you up. But it's not a good idea to do this with red and processed meat, like ham, bacon, sausages, beef and lamb. These all have links with heart problems and cancers.

Try swapping red and processed meat for these:

- pulses such as beans and lentils
- eggs
- fish
- poultry like chicken and turkey
- unsalted nuts.

Beans, peas and lentils are also very high in fibre and don't affect your blood glucose levels too much – making them a great swap for processed and red meat, and keeping you feeling full. Most of us know that fish is good for us, but oily fish like salmon and mackerel are even better. These are rich in something called omega-3 oil, which helps protect your heart. Try to aim to eat two portions of oily fish a week.



Eat more fruit and veg. We know eating fruit and veg is good for you. It's always a good thing to aim to eat more at meal times and have them as snacks if you're hungry. This can help you get the vitamins, minerals and fibre your body needs every day to help keep you healthy.

You might be wondering about fruit and if you should avoid it because it's sugary? The answer is no. Whole fruit is good for everyone and if you have diabetes, it's no different. Fruits do contain sugar, but it's natural sugar. This is different to the added sugar (also known as free sugars) that are in things like chocolate, biscuits and cakes.

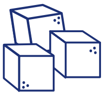
Products like fruit juices also count as added sugar, so go for whole fruit instead. This can be fresh, frozen, dried or tinned (in juice, not in syrup). And it's best to eat it throughout the day instead of one bigger portion in one go.

Choose healthier fats. We all need fat in our diet because it gives us energy. But different types of fat affect our health in different ways.

Healthier fats are in foods like unsalted nuts, seeds, avocados, oily fish, olive oil, rapeseed oil and sunflower oil. Some saturated fats can increase the amount of cholesterol in your blood, increasing your risk of heart problems. These are mainly found in animal products and prepared food, like:

- red and processed meat
- ghee
- butter
- lard
- biscuits, cakes, pies and pastries.

It's still a good idea to cut down on using oils in general, so try to grill, steam or bake foods instead.



Cut down on added sugar. We know cutting out sugar can be really hard at the beginning, so small practical swaps are a good starting point when you're trying to cut down on excess sugar. Swapping sugary drinks, energy drinks and fruit juices with water, plain milk, or tea and coffee without sugar can be a good start.

You can always try low- or zero-calorie sweeteners (also known as artificial sweeteners) to help you cut back. Cutting out these added sugars can help you control your blood glucose levels and help keep your weight down. If your diabetes treatment means you get hypos, and you use sugary drinks to treat them, this is still important for your diabetes management and you shouldn't cut this out. However, if you are having regular hypos, it's really important to discuss this with your diabetes team.

Be smart with snacks. If you want a snack, choose yogurts, unsalted nuts, seeds, fruits and vegetables instead of crisps, chips, biscuits and chocolates. But watch your portions still – it'll help you keep an eye on your weight.

Drink alcohol sensibly. Alcohol is high in calories, so if you do drink and you're trying to lose weight, think about cutting back. Try to keep to a maximum of 14 units a week. But spread them out to avoid binge drinking, and go several days a week without alcohol.

If you take insulin or other diabetes medications, it's also not a good idea to drink on an empty stomach. This is because alcohol can make hypos more likely to happen.

Don't bother with so-called diabetic food. To say food is a diabetic food is now against the law. This is because there isn't any evidence that these foods offer you a special benefit over eating healthily. They can also often contain just as much fat and calories as similar products, and can still affect your blood glucose level. These foods can also sometimes have a laxative effect.

Get your minerals and vitamins from foods. There's no evidence that mineral and vitamin supplements help you manage your diabetes. So, unless you've been told to take something by your healthcare team, like folic acid for pregnancy, you don't need to take supplements.

It's better to get your essential nutrients by eating a mixture of different foods. This is because some supplements can affect your medications or make some diabetes complications worse, like kidney disease.

Need to know

- You have the right to see a dietitian. Ask your GP to refer you.
- How much you should eat and drink is based on your age, sex, how active you are and your own personal targets.
- Carbs affects your sugar levels, so changing the amount you're eating without changing your insulin dose may cause hypos or hypers. Talk to your healthcare team if you're changing your diet.
- It's important to think about portion sizes as it can help with carb counting and managing your weight. See **www.diabetes.org.uk/t1-portion-sizes**

Carb counting

Carb counting is the best way to manage Type 1 diabetes. It means matching insulin to the amount of carbohydrate you eat and drink.

It takes time and effort, but once you get the hang of it, carb counting can lead to better blood sugar control. It also gives you more choice over when – and how much – you eat. You can enjoy special occasions and treats by making changes to insulin doses.

Main carb sources are:

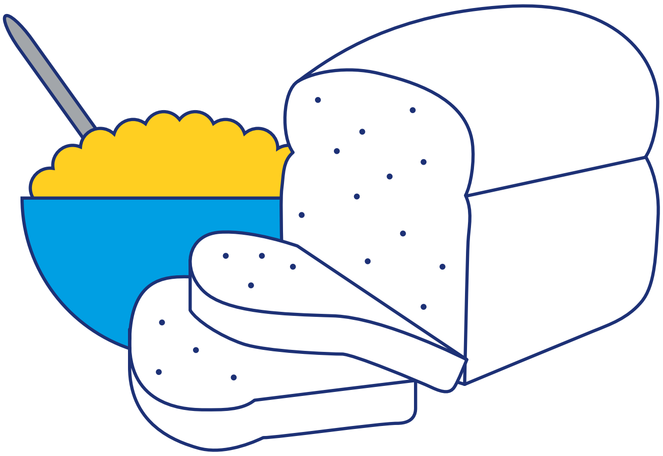
- bread
- pasta
- chapatti
- potatoes
- yam
- noodles
- rice
- honey
- cereals
- fruit
- some dairy
- sugar
- sugary foods and drinks
- glucose syrup.

Most carbohydrates (except for fibre) are broken down into glucose – your body's essential fuel. And how much you need depends on your age, weight and how active you are.

Before you begin

Before you start carb counting, these are the things you need to be aware of:

- You need to get the dose of your basal (background) insulin right. This insulin deals with the glucose released by your liver. Talk to your healthcare team about how you do this.
- Carbohydrate can be counted in two ways: grams or as carbohydrate portions (CP). One CP usually equals 10g of carbohydrate. It's important to decide which method works best for you.
- Once you've got to grips with calculating the amount of carbohydrate you'll eat or drink, you need the insulin-to-carbohydrate ratio for your bolus insulin (the insulin you take to cover the rise in blood sugar level when you eat and drink). It's different from person to person, so you'll be given your own ratio based on age, weight, activity level and how long you've had diabetes. Your healthcare team will help you work it out, and eventually you may have a different ratio for each meal.
- If you know how much carbohydrate is in a meal and you know your insulin-to-carbohydrate ratio, you can work out the number of units of bolus insulin to take. If you're planning to eat 70g of carbohydrate and your insulin-to-carbohydrate ratio is 1 unit of bolus insulin for every 10g of carbohydrate, you'll need 7 units of bolus insulin.
- The amount you actually take will also depend on other things, like your current blood sugar level, illness or planned activity.



Enjoy Food

Helping families with diabetes shop, cook and eat

Enjoying what you eat is one of life's pleasures

But if you have diabetes, it can be tricky at times.

For free, helpful advice, real-life stories and hundreds of tasty recipes, go to **Enjoy Food**.

You'll find mealtime inspiration and handy tips to help you eat well, feel good and enjoy food.

Whether you're newly diagnosed, looking for exciting new recipes or just in need of practical advice, Enjoy Food is here to help.

www.diabetes.org.uk/t1-enjoy-food

DiABETES UK

KNOW DIABETES. FIGHT DIABETES.

How to count the carbohydrate you eat and drink

Here's our quick guide to learning to carb count. You can also watch our carb counting videos at **www.diabetes.org.uk/t1-carb-counting**

1 Food labels: using the carbohydrate per portion value

Chicken pasta bake ready meal

Typical values	100g contains	Each oven baked meal (317g) contains
Energy	433kJ (103kcal)	1372kJ (325kcal)
Fat	1.7g	5.4g
Of which saturates	0.9g	2.9g
Carbohydrate	14.1g	44.7g
of which sugars	2.0g	6.3g
Fibre	1.2g	3.8g
Protein	7.1g	22.5g
Salt	0.4g	1.3g

If you eat the whole of this ready meal, the amount of carbohydrate you'll count is 44.7g. It's important to count the total amount of carbohydrate and not the 'of which sugars' value. When using the 'per portion' value, be sure that this is the actual portion you're planning to eat.

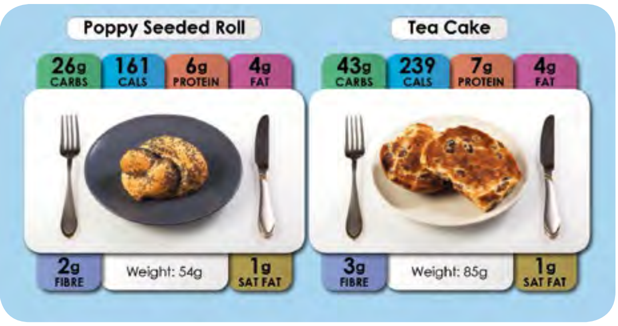
2 Food labels: using the carbohydrate per 100g value

Basmati rice

Typical values	As sold 100g contains
Energy	1515kJ (360kcal)
Fat	1.0g
Of which saturates	0.2g
Carbohydrate	77.4g
of which sugars	0.2g
Fibre	1.8g
Protein	8.5g
Salt	<0.01g

When using the per 100g value, calculate the carbohydrate for the actual amount that you're going to eat or drink. For example, if you're planning to cook 80g of rice and you eat all of it, the amount of carbohydrate you'll count is 61.9g, not 77.4g. It's worth investing in a good set of flat-based digital scales that can be zeroed. It's also important that your scales are accurate to within 5g. The cooked weight of foods like pasta, rice and potatoes will vary from the raw or pre-cooked weight, so check which values you're using.

3 Reference lists and visual guides



But what should you do when food doesn't have a nutrition information label or you're eating out? Although this is more challenging, reference lists and visual guides will help you estimate carbohydrate. These list the amount of carbohydrate in handy measures, such as '1 bread roll', '1 medium banana' or '1 scoop of ice cream'. Some guides also contain pictures for comparing (see above).

4 Recipe nutrition information

Enjoy Food

Enjoying what you eat is one of life's pleasures. But if you have diabetes, or cook for someone who does, it can be tricky at times.

Enjoy Food has , advice and expert diabetes nutritional information, written by clinical advisors and chefs at Diabetes UK using current scientific-based evidence.

From your weekly food shop, to serving up a delicious meal at the table, there's simple, practical advice for all families on any budget. For everyone with diabetes, whether you're newly diagnosed, looking for family-friendly recipes or just in need of healthy mealtime inspiration, you can start enjoying food again.

Using our recipe finder takes the hard work out of calculating the carbohydrate content of hundreds of recipes. Take a look at our recipe finder at **www.diabetes.org.uk/Guide-to-diabetes/Recipes**

But there's no need to throw out your favourite recipes and cookbooks. Working out the carbohydrate values of your day-to-day meals helps you build up a personal handy reference list that you can use again and again.

5 Restaurant and snack bar nutrition information: often found online

Bacon breakfast roll

Typical values	Per 100g	Per 114g serving
Energy	1381.6kJ (328.1kcal)	1575kJ (374kcal)
Fat	19.2g	21.9g
Of which saturates	6.8g	7.8g
Carbohydrate	22.2g	25.3g
of which sugars	1.4g	1.6g
Fibre	1.3g	1.5g
Protein	15.8g	18g
Salt	3.07g	3.5g

Many restaurants and cafes now list nutrition information on their menus. The nutrition information for this bacon breakfast roll can be found in seconds after a quick search on the internet. Bear in mind, though, that these values are average values, and the dish that you're served may vary in size and ingredients – you still need to use your judgement and experience.

Tips to start carb counting

1. Do you know which of your food and drink contains carbohydrate? Stop, think and make a mental note of which food and drink you need to count.
2. Get label savvy. Scrutinise nutrition labels. Take packets from your kitchen cupboards and find out just how much information is there.
3. Make carbohydrate your specialist subject. Practise estimating carbohydrate content in your meals – use reference lists to check if you're right.
4. Ask your healthcare team about going on a DAFNE course (see page 32).

Need to know

- Check food labels.
- Use the carbohydrate information which more closely relates to the portion you're having. For example, use the per 100g information to calculate the carb in your serving if you have weighed your product, or the per serving information if you are eating the same serving as written on the packet.
- If it's per portion or serving, what's the size of that portion or serving?
- Count the 'total carbohydrate' (not 'of which sugars').
- Check the order of ingredients to get a sense of how much carbs are in the product.
- Think about the ingredients that make up the product. If it contains a lot of very slowly digested carbohydrates, like beans or tomatoes, you wouldn't count this carbohydrate, but the carbohydrate value will include them.
- Check whether the amount of carbohydrate is for the raw or cooked product, especially for pasta or rice.

Some questions

Can I still enjoy eating out?

Definitely. Learn how to carb count and you can change the amount of insulin you inject to match the food you eat. Check the website of the place you're eating at, as they may have nutrition info online that will make carb counting easier. But there are a few things to think about:

- Changes in meal times can have a big impact on the timing of insulin injections. So if you're going to eat a meal later than normal, you can generally delay insulin until you're about to eat. But if you're on twice-daily insulin injections and eating lunch later than normal, you may need to have a snack before you go out or have some bread as soon as you arrive. This helps to avoid a hypo.
- When eating out, it's easy to eat foods higher in fat than you normally would – and to eat for longer. But fat slows the absorption of carbohydrate into the bloodstream, so dishes like pizza, curry and fish and chips may take longer to affect blood sugar levels. So, when you take your bolus insulin, it may have finished working before you've absorbed all the carbohydrate. You may need to alter how you take your insulin, like splitting your dose.

Food Upfront campaign

Evidence shows that clear food labels help us to make healthier choices about the food and drinks we buy.

And for many people with diabetes, knowing how many carbs there are in just one meal can help them to manage their condition more effectively.

This is why we are calling on the government and food industry to make food labelling clear, consistent and compulsory.

For more information, go to **www.diabetes.org.uk/t1-food-upfront**

Exercise

In this chapter

Exercise

We all know exercise is good for us.

But now that you're living with Type 1 diabetes, you need to make being active a priority. It has real benefits for your physical and mental health. And regular physical activity will help you avoid diabetes complications.

It'll help you manage your diabetes and reduce your risk of cardiovascular disease. It also reduces your risk of (and can help to manage) cancer, joint and back pain, depression and dementia. And, it helps with diabetes by:

- helping you lose weight or keep to a healthy weight
- helping with heart health by improving your cholesterol and blood pressure levels
- strengthening your muscles and bones
- reducing stress levels and symptoms of depression and anxiety
- improving your sleep.

How much to aim for

Aim for 30 minutes of moderately intense activity – or 15 minutes of vigorous activity – at least five days a week.

Also try to do activities that improve muscle strength on two or more days a week. This could be body weight classes, like squats or lunges, lifting weights, strenuous gardening, carrying food shopping or yoga.

You should aim to spend less time sitting down, and more time on your feet.

Moderate intensity – breathing is increased, but you can talk comfortably.

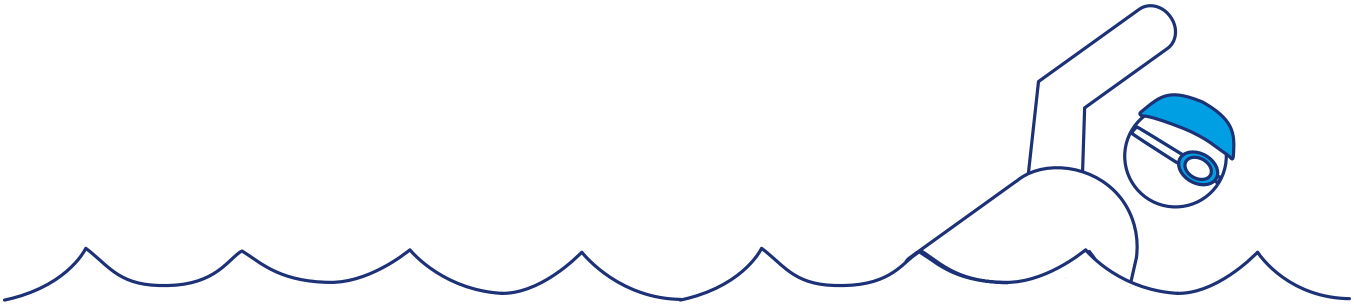
This could be walking quickly, cycling on flat ground or a leisurely swim.

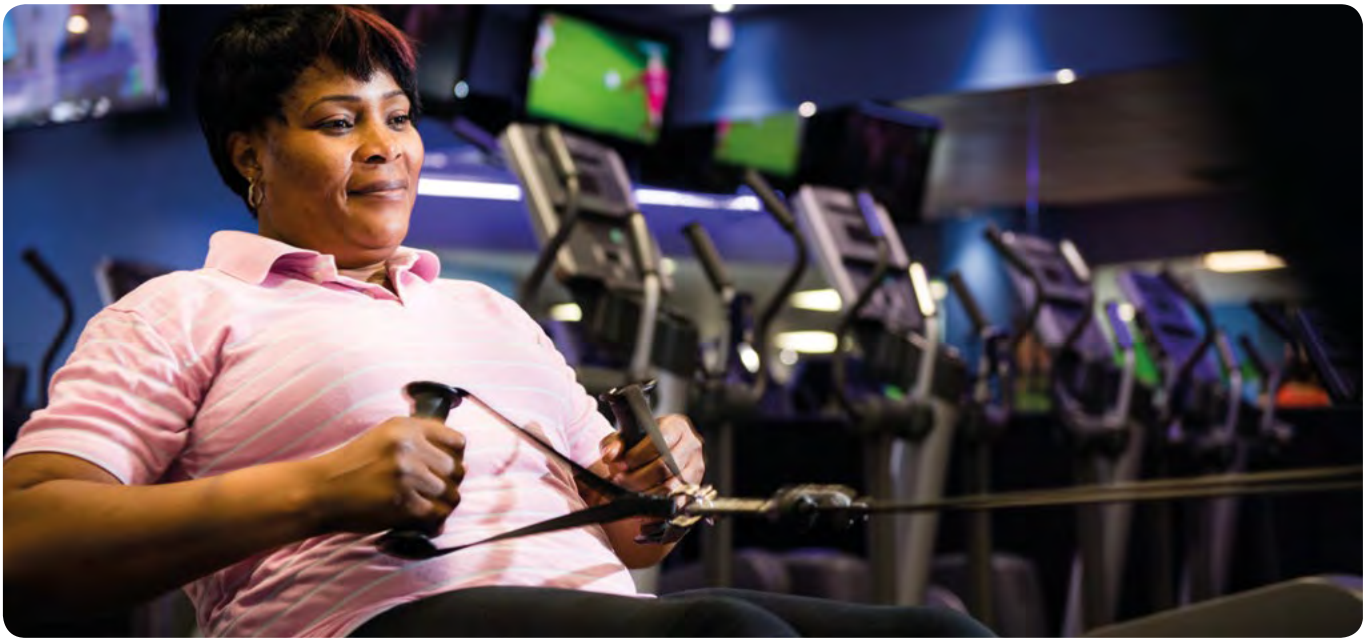
Vigorous intensity – you're breathing fast and it's hard to talk.

This could be running, cycling faster or up hills, or faster swimming.

Exercises for muscle strength

For example, body weight exercises, like squats and lunges, lifting weights, heavy gardening, carrying groceries or yoga.





Blood sugar levels and exercise

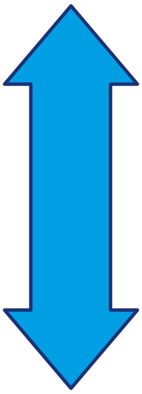
With Type 1 diabetes, it's essential to learn how exercise affects your blood sugar levels, so that you can do it safely.

Exercise increases the amount of glucose muscles use for energy. It's first taken from your body's store of glucose, then from blood. So your blood sugar levels go down.

Some activities, like long-distance running, increase the risk of hypos. You're also more sensitive to insulin and more at risk of hypos 24 to 48 hours after exercise, so you may need to check your blood sugar levels more often.

Some exercise, such as high-intensity exercise or weight training, can also raise blood sugar levels. So test your blood sugar levels more often, particularly before, during and hourly after activity. You'll then understand how physical activity affects your levels and how to balance your insulin with the carbohydrates you eat. The way the body responds to exercise is likely to vary from person to person. For individual advice, speak to your healthcare team.

Hyperglycaemia



Anaerobic Short duration High intensity	Weightlifting Tag Sprinting Diving	Swimming Gymnastics Wrestling Dodge ball	Volleyball Ice hockey Track cycling
	Basketball Football Tennis Lacrosse Skating	Skiing (Slalom and downhill) Field hockey	Rowing (Middle distance) Running (Middle distance)
Aerobic Longer duration Lower intensity	In-line skating Cross country skiing Brisk walking		Jogging Cycling

Hypoglycaemia

Avoiding hypos

If your blood sugar levels are below 7mmol/l before activity, have extra carbohydrate. Always carry hypo treatment and medical ID. Teach those with you to recognise and treat hypos. If you're on your own, make sure someone knows where you are. Be aware that you can absorb insulin more quickly if you inject into an area you use, for example your leg before running. If you've had a severe hypo, avoid any exercise in the next 24 hours.

By planning ahead and reducing insulin, or having more carbohydrate, you reduce the risk of a hypo.

If you're trying to lose weight, it's probably best to reduce your insulin in advance rather than increasing the amount of carbohydrate you eat or drink. Speak to your healthcare team for advice.

If you're doing unplanned activity, you probably need more carbohydrate.

Avoiding high blood sugar

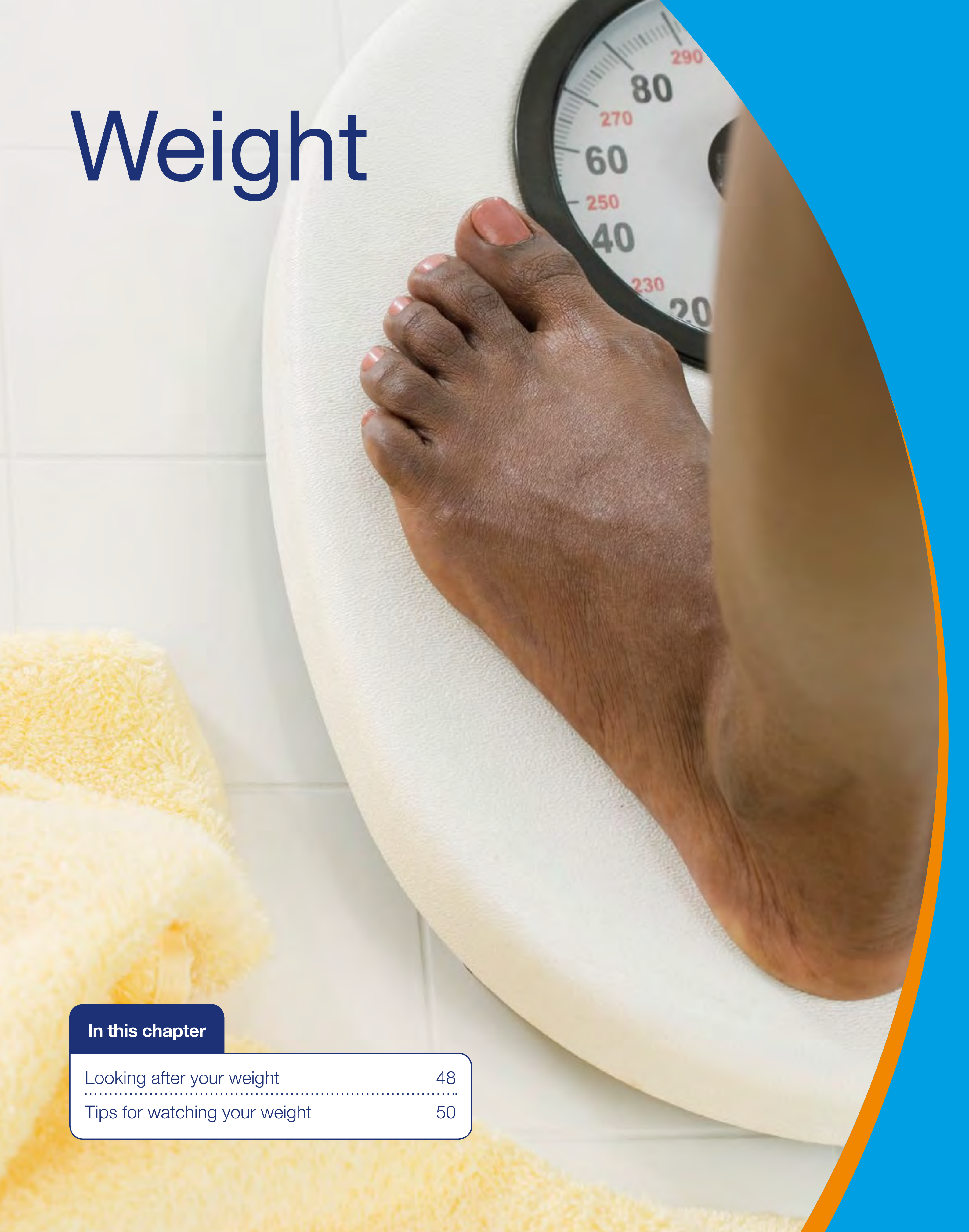
Be careful if your blood sugar level is over 13mmol/l as activity could raise it, rather than lower it. If that happens, it's because there's not enough insulin circulating in your body. You need to check for ketones (see page 24). If ketones are there, avoid any activity until they're gone. Consider injecting an extra dose of bolus insulin (correction dose). Speak to your healthcare team about how to do this.

Tips to keep it safe

- Warm up before exercise, and cool down afterwards. A warm-up is 5 to 10 minutes of low-intensity activity (for example a brisk walk before jogging or running). A cool-down is 5 to 10 minutes of lower-intensity activity you've just done, and stretching, until your heart rate and breathing is back to what it was before exercise.
- Wear the right footwear and socks to prevent blisters. Keep feet dry and check them before and after.
- Wear a diabetes ID bracelet.
- Carry a small bag with your necessary diabetes kit, blood glucose meter, hypo treatments and mobile phone.
- Avoid going to remote areas, and tell people where you're going and when you'll be back.

Need to know

- Test your blood sugar levels more often before, during and after any physical activity.
- Talk to your healthcare team about how to adjust insulin, the amount of carbohydrate you eat or drink, or both, to avoid high and low blood sugar levels. Keep records of what happens so they can give you the best advice.
- Speak to your healthcare team before starting any new exercise/physical activity.



Weight

In this chapter

Looking after your weight

Before you were diagnosed, you may have lost a lot of weight unexpectedly. That's because you weren't producing insulin to turn your blood sugar into energy. Your body was getting its energy from fat and muscle instead.

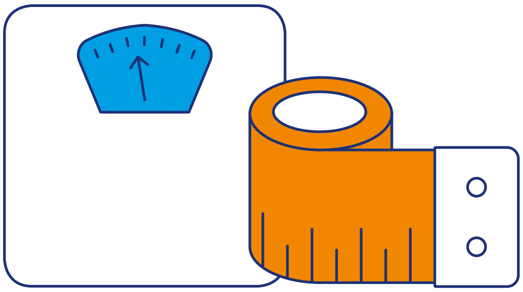
Now that you're having insulin, you can use blood sugars for energy again. This may mean you feel hungrier and eat more, but that's a good sign and will help you regain the weight you lost.

Don't worry that you'll just continue to put on weight. So long as you're not taking in more calories (energy) than your body needs, you won't. With the right help and support, your weight gain will level off and you can stay at a healthy weight.

Keeping an eye on your weight

At your annual review, your healthcare team will work out the right weight for you. They'll:

- Work out your BMI (Body Mass Index, see the chart on the right).
- Measure your waist. If you need to lose weight, reducing your waist size will help your blood sugar control and reduce risk of long-term problems, like heart disease and stroke.



Waist measurement targets

- White and black men: below 94cm (37in).
- South Asian men: below 90cm (35in).
- All women: below 80cm (31.5in).

Keeping weight loss healthy

Type 1 diabetes isn't caused by being overweight. But it's important to stay a healthy weight. This will benefit your overall health. If you're carrying extra weight, losing just a small amount improves health, including blood pressure and cholesterol levels.

If you need to lose weight, it can help if you set your goal in the BMI healthy range. If you have a lot of weight to lose, it might be better to set an easier goal at the beginning, like losing a few kilograms.

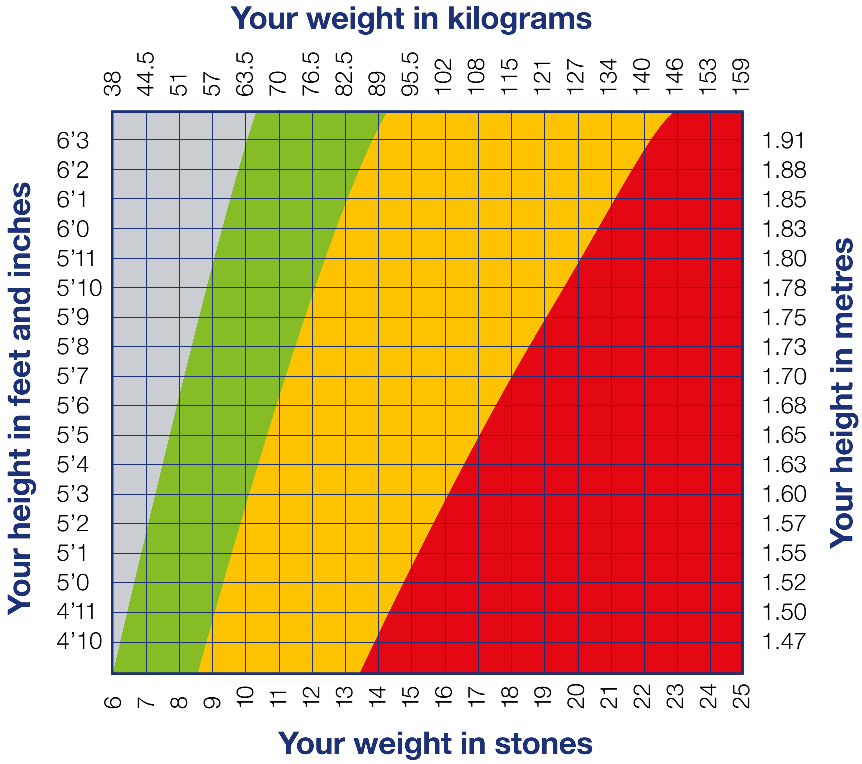
Getting there

Whether you live with diabetes or not, a healthy, balanced diet and active lifestyle are best. It's the best way to get to a healthy weight you can stick to.

We're all different when it comes to diets and weight loss. Some people find it easier than others. Diabetes can also bring extra challenges. With the right support, you can get the right balance of healthy eating and activity. Ask to see a dietitian if you need help.

Snacking

If you worry about hypos, you may eat or drink more calories than you need due to snacking or overtreating hypos. Your healthcare team can make sure you have the right insulin plan to reduce the risk of hypos, which means you won't need as many snacks. They can also advise on the best treatment for hypos, healthy snacks and portion sizes.



Aim to stay in the green area or work towards getting closer to the green area.

To calculate your BMI:

$$\frac{\text{weight (kg)}}{\text{height (m)} \times \text{height (m)}}$$

Example: So, if you're 1.8m tall and 95kg, your BMI would be 29:

$$\frac{95}{(1.8 \times 1.8)} = 29 \text{ (BMI)}$$

Note: For South Asian adults, a healthy weight range is a BMI between 18.5 and 22.9.

Skipping insulin

Skipping insulin to lose weight can lead to diabetic ketoacidosis (DKA), which can kill you (see page 24). It also increases your risk of serious long-term complications. This pattern of behaviour is called diabulimia and is a type of eating disorder affecting both men and women. It's essential you get the right help, so speak to your healthcare team as well as a family member or friend. See page 66 for more on diabulimia.

Crash diets

It's not a good idea to drastically cut the amount you eat, or cut out a whole food group. You're in danger of missing out on vital nutrients, which can put your health at risk. Instead, aim for an easier target of 0.5–1kg (1–2lb) a week weight loss. Small, achievable targets mean you're more likely to stick to them.

Tips for watching your weight

1. Keep an eye on your BMI and waist measurement at home. Weigh yourself and measure your waist. Do this one day a week and around the same time, as weight can change throughout the day.
2. Use the chart on page 49 to work out your BMI.

Need to know

If you need to lose weight, the best way is to find a way of eating that suits you and your lifestyle, so that it's one you can live with. Talk to your dietitian for help.

Some questions

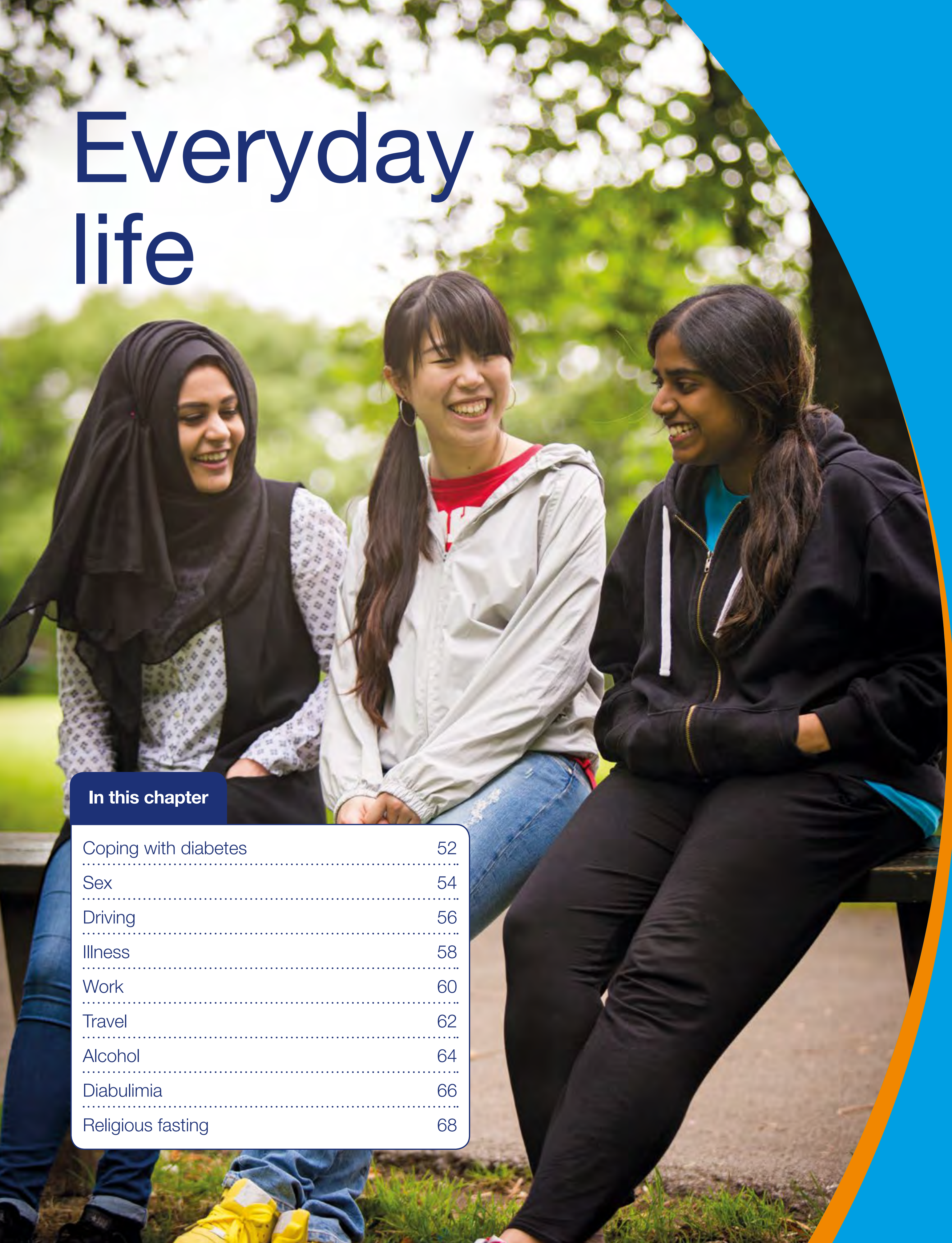
I'm underweight and struggle to gain weight. What can I do?

Talk to your dietitian if you're underweight. They can suggest ways to gain or maintain weight. Things like:

- Smaller meals, more often. It can be easier than three large meals and may make you hungrier.
- Use full-fat dairy, like milk, cream, cheese and yogurt.
- Add unsaturated fats, like avocado, nuts, seeds, spreads and oils (including olive, rapeseed, safflower and peanut). They're high in calories, but better for you than saturated fats.
- Serve vegetables with melted butter, margarine or grated cheese.
- Add cream or milk to mashed potato or soups.
- Have nourishing drinks, like smoothies and milky drinks.

You should be tested for coeliac disease if you have any unexplained weight loss. There are other signs or symptoms when people should be tested for coeliac disease, including when first diagnosed with Type 1 diabetes. Find out more at **www.diabetes.org.uk/t1-coeliac**

Everyday life



In this chapter

Coping with diabetes

No one is happy to be diagnosed with diabetes.

You may be relieved to know why you've been unwell – that it's treatable and you can live a full life. But it's still a shock. And Type 1 diabetes is tough because you have it for the rest of your life and you never get a day off.

The reality of managing a lifelong condition hits everyone. There are so many extra decisions you need to make every day. That's exhausting – practically, physically and emotionally.

You may also be worrying about how it affects your future, from work and social life, to travel and relationships.

If your feelings ever stop you from properly managing diabetes and living a full life, then it's time to get extra support. There's lots of help out there. Getting emotional support if you need it is as important as any other part of your treatment.

Diabetes burnout

Also known as diabetes distress, this is a rational response to a demanding, long-term condition. It's feeling frustrated, defeated or overwhelmed by diabetes.

It's most common in people who've managed diabetes for a long time. It can be provoked by different things – the non-stop nature of treatment, life events or if you develop complications.

As it's about diabetes specifically, you may not otherwise be unhappy. It's not the same as depression – where people feel negative about themselves, others and the future. But it's important to recognise it – and get help.

There's more information on burnout on our website: **www.diabetes.org.uk/t1-diabetes-burnout**

Depression

People with diabetes are more likely to experience depression. It's a serious condition that shouldn't be ignored. It can be treated. It's different from diabetes burnout, or feeling down or sad. You can't simply 'pull yourself together'.

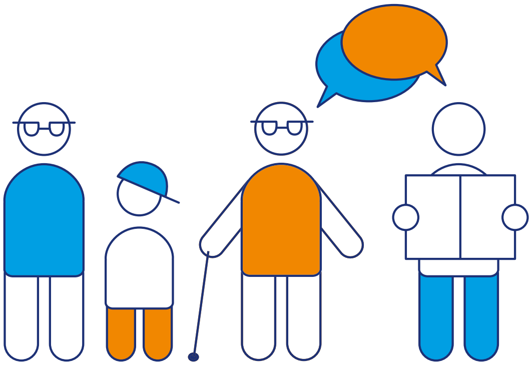
For information or to talk to someone about how you're feeling, contact the Diabetes UK Helpline (see 'Other ways to find support', below). It's also important to talk to your doctor and healthcare team.

Talking to family and friends

You may find it hard to open up to people about your diabetes. But, sharing issues with friends and family will help them understand how to help while you adjust to your new way of life. They can give support and encouragement when you're first diagnosed, or at times when you're struggling.

Other ways to find support

- Our helpline. Call **0345 123 2399*** or email **helpline@diabetes.org.uk** for confidential support from helpline advisors. If you're in Scotland, call **0141 212 8710*** or email **helpline.scotland@diabetes.org.uk**
- Join a local Diabetes UK group, run entirely by volunteers. Find out more at **www.diabetes.org.uk/t1-groups**



*Calls may be recorded for training and quality purposes.

- Get involved with Diabetes UK's online communities. Our biggest communities are on Facebook and Twitter. You'll also find us on Instagram, YouTube and LinkedIn. Go to **www.diabetes.org.uk/t1-communities** for more details.
- Go to **www.diabetes.org.uk/t1-blogs** for regular posts from others with diabetes or who are living with people with diabetes.
- Connect with others living with diabetes. Join our online support forum at **www.diabetes.org.uk/t1-forum** to find tips, advice and emotional support, and be part of a welcoming community.
- For more details of all the ways we can support you, go to **www.diabetes.org.uk/t1-how-we-help**

Tips for coping

- Talk to your healthcare team about worries.
- Talk problems through with your family and friends.
- Talk to your healthcare team if you feel down. They can suggest ways of coping and refer you to a counsellor or psychologist.
- Get in touch with other people with Type 1 diabetes (see 'Other ways to find support', left and above).

Need to know ★

- Don't ignore feelings of depression – get help, you're not alone.
- Your GP and healthcare team can offer support and refer you for counselling.

Some questions

I'm worried diabetes will affect my relationships and I'll be treated differently.

Most things are easier to face with help from friends and family. But diabetes can put a strain on relationships, particularly if you're having trouble coming to terms with your diagnosis or making changes to your lifestyle, for example.

Your healthcare team can help you fit your treatment into your day-to-day life. They can support you to make changes and refer you for more help if you need it.

My emotions are all over the place. Is this normal?

Some people go through a stage similar to mourning after being diagnosed: feeling unhappy, anxious, angry, isolated, as though grieving for lost health. You can hide feelings, but that doesn't mean you're coping better.

Everyone's different, but most newly diagnosed people struggle at the beginning, and feel a lot better before the end of a year. You may prefer to manage by yourself, but others find talking to someone – either family, their healthcare team or someone else with diabetes – helpful.

Sex

Sex is an important part of life. And, when we're unhappy with our sex life, it can affect our wellbeing and closest relationships.

If you're having sexual problems, it can be hard to talk about them. Particularly if you don't know why you're having them. But you need to recognise the symptoms and the causes, so you understand them. Then you're halfway there in terms of getting the help and advice you need.

Sexual dysfunction and diabetes

Poorly controlled diabetes can damage blood vessels and nerves, causing reduced blood flow and loss of feeling in sexual organs. This can cause problems called sexual dysfunction and is more common in people with diabetes.

Sexual dysfunction can lead to vaginal dryness in women, and erection problems in men. You should be assessed and given the right support and education, so don't suffer in silence – speak to your doctor.

Women

Female sexual dysfunction is twice as likely for women with diabetes. The cause can be physical, or due to medication – or both. Emotional and lifestyle factors can also play a part.

The four main areas of difficulty are: desire, arousal, painful sex (dyspareunia) and orgasm. Treatments include aids for lubrication, clitoral stimulation and therapy.

Men

Erectile dysfunction is the most common problem: not being able to get or keep an erection during sex.

Erectile dysfunction is one of the earliest signs of other complications, and early detection is so important to reduce your cardiovascular risk. Physical factors and medication, along with emotional and lifestyle factors can all contribute to erectile dysfunction.

There's a wide range of treatment available. Getting treatment early will stop any erectile dysfunction getting worse.

Tips for dealing with sexual dysfunction

1. Talk to your partner about any problems.
2. Talk it through with your healthcare team as it could be linked to diabetes. Ask about treatments available.

Need to know ☆

- Other problems linked with diabetes (like heart disease and depression), along with some medications and surgery, can increase the chance of sexual problems.
- High blood sugar levels make thrush worse and sex uncomfortable. Good control of diabetes helps prevent this.
- Active sex can cause hypos. So, have a hypo treatment nearby. It can also help to talk about this with your partner.
- Some medication used to treat diabetes and some of the conditions associated with it can cause erectile dysfunction as a side effect. Your healthcare team should see if it's possible to change or modify your treatment to one that's less likely to affect erectile dysfunction.

Some questions ?

Can I have a baby if I have diabetes?

Yes, you can. But diabetes makes pregnancy something that needs work and dedication on your part. **It's vital to plan for it and get help and advice first.**

So, it's important to use effective contraception until you know you want to become pregnant.

Speak to your healthcare team if you're planning to have a baby or think you might be pregnant.

If you want to have a baby, ask your healthcare team to refer you to a preconception clinic.

For more information, go to **www.diabetes.org.uk/t1-pregnancy**

Check out our campaign called #theone – www.diabetes.org.uk/t1-theone – which is about sharing the things people with Type 1 diabetes go through when it comes to sex, dating and relationships.

Meet Fawn and Chesney

Fawn, 25, was diagnosed when she was 16

"I'd never heard of diabetes and didn't understand what it would mean. It didn't help that some people made ignorant comments. I felt ashamed and didn't feel I could educate other people when I didn't understand it myself.

When I started dating Chesney, I was reluctant to tell him for fear of putting him off. I was wrong, though – Chesney's been amazing with my diabetes. Whatever the situation, he knows what to do – he's my rock."

Learning

Looking back, Chesney didn't realise Fawn was having hypos on their long walks together in the early days of their relationship. "Fawn didn't let me notice it," explains Chesney. "Three months into our relationship, her mum told me about Type 1. It was very daunting, but once I knew, I asked Fawn as much as possible because I wanted to learn so I could give vital support for Fawn – particularly when she moved away from home, as well as during her pregnancies. Diabetes has become part of my life and I'm happy to support Fawn whenever she needs me to."

Since those early days, Fawn can see the changes in herself, too. "I didn't really tell anyone [about my Type 1] until I was 18 and, even then, I only told people who regularly saw me. It wasn't until an online friend added me to a Facebook group for people with diabetes that I started to be more open – I was 22 by then! I think it was knowing others and being able to speak about it that gave me the confidence to open up."

Driving

You can drive when you have Type 1 diabetes. But you need to be careful and informed about certain things. And you need to plan in advance before you get behind the wheel.

If you drive a car or motorbike (Group 1 driver):

- You must tell the DVLA (UK) or DVA (Northern Ireland) that you're on insulin. Your licence will then be renewed every one, two or three years.
- Any changes to your condition or treatment between renewals (complications, like eye problems or nerve damage, which might affect your ability to drive safely) should be reported to the DVLA or DVA when they happen.
- You need to tell the DVLA or DVA if you have a problem with hypos, severe hypos (where you were completely dependent on someone else to treat your hypo), or hypo unawareness (when you don't sense your blood sugar levels going low).

If you drive a bus or lorry, or large camper van or pull a large trailer (Group 2 driver), there's essential information for you on our website: www.diabetes.org.uk/t1-driving

Tips for driving

1. Check your blood sugar levels before you set off and every two hours on long journeys.
2. If your blood sugar level is 5mmol/l or less, eat some carbohydrate before driving. If it's less than 4mmol/l, don't drive until you've treated the hypo and your blood sugars are under control.
3. Keep hypo treatments to hand in the car.
4. Take breaks on long journeys.
5. Don't delay or miss meals and snacks.

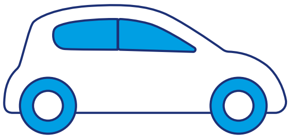
If you feel warning signs of a hypo while driving, you must not continue to drive. Follow this guidance from the DVLA/DVA:

- Stop the vehicle as soon as possible in a safe place.
- Switch off the engine. Remove keys from the ignition. Move from the driver's seat.
- Take fast-acting carbs, like glucose tablets or sweets, and some form of longer-acting carbohydrate.
- Don't start driving until 45 minutes after your blood sugar level has returned to normal. See page 20 for more on treating a hypo.

If you have poor warning signs of a hypo or have hypos often, you put yourself and others at risk, and should probably not be driving. Talk about this with your healthcare team. If your team tells you to notify the DVLA/DVA, you must do this. If you don't, your doctor will on your behalf.

Need to know ☆

- Tell DVLA/DVA you have diabetes treated with insulin:
  - DVLA: **www.gov.uk/dvla**
  - DVA: **www.nidirect.gov.uk/contacts/driver-vehicle-agency-dva-northern-ireland**
- Tell your insurers.
- Be clear on what you need to do if you have a hypo.



Illness

Like everyone, you're bound to get ill sometimes, or may need to go to hospital. So, it's important to know how you cope with illness. That means knowing how to manage insulin (or other medication), blood or urine tests and your diet when you're unwell.

There's no reason to think you'll be ill more often than others, but if your diabetes isn't well managed you could be more prone to infections.

If you don't feel well, take care of yourself and get medical help if you need it.

Blood sugar levels may rise when you're ill, even if you're not eating. This is your body trying to fight off infections and illness.

Some of the culprits are:

- colds and flu
- chest infections
- urinary tract infections
- vomiting and diarrhoea
- skin infections.

Remember, the signs of high blood sugar include being thirsty, passing more urine than normal and tiredness. It's essential that you know what to do if you become unwell to make sure you don't develop any serious problems, like diabetic ketoacidosis (DKA, see page 24).

You might not feel like eating, but you still need to eat or drink something with carbohydrate to give you energy. You also need to drink plenty of sugar-free fluids. Aim for at least 2.5 to 3.5 litres (4 to 6 pints) a day.

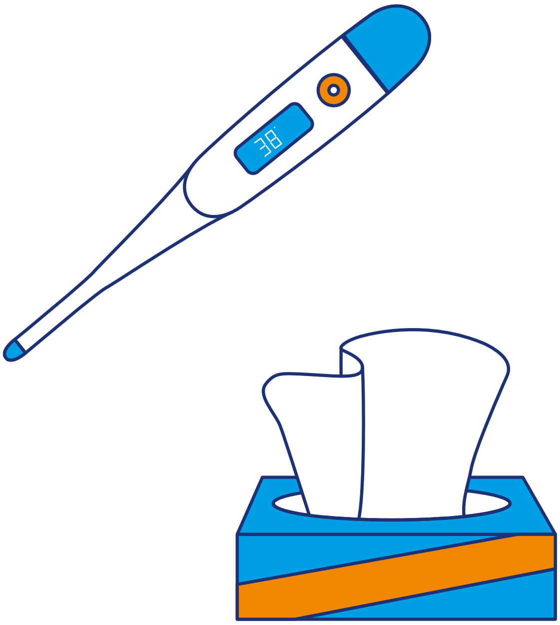
People who don't have diabetes produce more insulin as a response to illness or infection. You can't do this. So, your blood sugar levels rise, you pass more urine and feel thirsty. This can make you dehydrated. And the symptoms of high sugar levels can add to the original symptoms or infection and make it worse.

Dehydration

This is made worse if you have a temperature or are sick. Blood sugar levels can, in some cases, become so uncontrolled that you need to go to hospital for treatment. Severe dehydration and high blood sugar levels can be very serious. That's why you need to be prepared and follow the necessary steps when you're ill (see 'Tips for managing illness', page 59).

Steroids

Some conditions are treated with steroids (for example Addison's disease, asthma, lupus, arthritis). Steroids may make your blood sugar levels rise. This shouldn't stop you taking them, but you should talk to your doctor about how to manage your diabetes while taking them. You may need to change your medication. If steroids have been prescribed for a short time, your blood sugar levels will usually go back to normal when you stop taking them.



Tips for managing illness

- Keep calm. As part of your 15 Healthcare Essentials, you should be given a personal care plan telling you what steps to take if you're unwell. But contact your doctor if you're not sure what to do.
- Keep taking your insulin even if you don't feel like eating.
- Test your blood sugar levels more often.
- If your blood sugar levels are consistently above 13mmol/l, check for ketones. You may also need to increase your insulin dose. Talk to your healthcare team about how much extra insulin you need to take.
- If you don't feel like eating, you feel sick or can't keep food down, replace meals with snacks and drinks containing carbohydrate for energy. Sip sugary drinks or suck on glucose tablets. If you let fizzy drinks go flat, it can be easier to keep them down.
- Drink plenty of sugar-free fluids. Aim for at least 2.5 to 3.5 litres (4 to 6 pints) a day.

Need to know ★

- Know the symptoms of high blood sugar and the signs that mean you need medical advice. Make sure your family, friends or your carer know them, too.
- If you're in hospital, make sure everyone knows you have Type 1 diabetes.
- Become familiar with the signs that indicate you need to get medical advice. Make sure a close friend, family member or carer are also aware of these signs. And get medical help if you can't eat or drink, keep being sick and/or have diarrhoea.

Some questions ?

A&E often has long waiting times. What if I need to eat or drink because I feel I'm going hypo?

You're right. If you go to A&E, you may have to wait for treatment and, if it's something that might need surgery, you shouldn't eat.

So, as soon as you arrive, tell the staff that you have diabetes and may need to eat to avoid a hypo. If you do need to eat or drink, check again with the staff.

If I need to have a planned stay in hospital, who'll look after my diabetes?

The responsibility is between you and the hospital staff.

You must be cared for by appropriately trained staff and be given the choice whether to monitor and manage your own insulin. The hospital staff should be able to give you your insulin and any medication, but take some with you to avoid delays. And take your own diabetes equipment (like a blood glucose meter) because they won't be able to give you this.

Don't assume anyone knows you have diabetes. It's better to mention it to hospital staff. If you have concerns about your diabetes management, speak to hospital staff – they should contact a specialist diabetes team, as you should be able to see them.

If any changes have been made to your diabetes treatment during your hospital stay, check if this needs to change when you go home, too.

Work

Diabetes shouldn't affect your chances of getting or keeping a job. It doesn't matter if you're fresh from college or counting down to retirement.

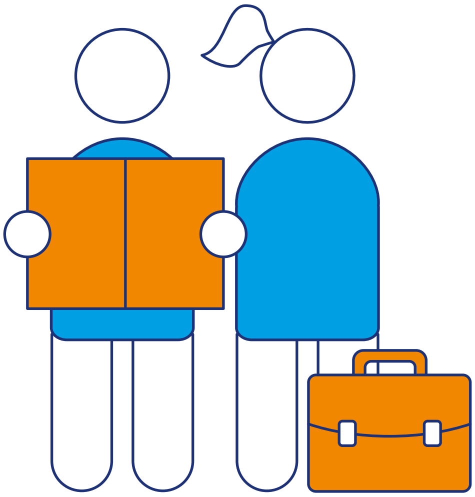
The law

There are laws to protect people in the workplace. The Equality Act 2010 applies in England, Wales and Scotland. The Disability Discrimination Act applies in Northern Ireland.

Both set out the principles employers must follow in their treatment of employees and job seekers with a disability, so that they're not put at a disadvantage. Even though you may not think of your diabetes as a disability, you'll be protected by these acts.

Applying for jobs

It's against the law for an employer to put a blanket ban on recruitment of people with diabetes. But some safety-critical work will have health requirements that exclude people with diabetes (among other medical conditions). Blanket bans have been lifted in the emergency services for people who use insulin. Deciding on whether someone is suitable is now made by individual assessment.



- Recruitment and retention in the police, fire and ambulance services is subject to medical assessment. But, the UK armed forces are exempt and can operate a blanket ban on people with diabetes.
- Some NHS ambulance trusts have restrictions on people with diabetes being in the ambulance crew. This is being challenged. If you develop diabetes while in work, your employer may offer to change aspects of the job, like shift patterns. If you can't now meet the health requirements of the job, your employer may offer you a different job in the same organisation. This could be a sensible option.

Telling recruiters

It can be hard to decide when to tell recruiters about diabetes. Employers can't ask about your health before offering you work.

But there are some specific exceptions, including:

- the employer wants to know whether adjustments need to be made for the assessment process
- the employer is asking for monitoring purposes (they can't use this information to decide whether they employ someone)
- the employer wants to improve disabled people's chance of getting employment
- the question asked is relevant to find out if you can carry out tasks that are essential to the job.

In some professions there are certain requirements around certification and physical qualification, and you'll have to disclose your diabetes to be properly assessed. But, mostly, there's no legal requirement to disclose diabetes and it's your decision whether to tell an employer or prospective employer. But if an employer doesn't know – and couldn't have been expected to know you have diabetes, you may not be able to rely on the legislation if you feel you've been discriminated against.

If you do decide to tell your employer you have diabetes, you may find it useful to show them **Support for diabetes in the workplace**, so they get a better understanding of if and how it may affect you in the workplace. Download it from **www.diabetes.org.uk/t1-employment**

If you're not asked about diabetes at your interview, it's probably best to wait until you've been told in writing that you're being offered the job. By this stage, the recruiters will have already decided whether you're suitable and diabetes shouldn't influence their final decision.

Telling colleagues

Some people don't know much about diabetes. A simple explanation about diabetes is all you need to give. If you don't treat diabetes as a problem, it's less likely your colleagues will. Think about the following things:

- **Hypos at work:** It's important to tell colleagues how to recognise and treat a hypo. This stops them overreacting and makes sure any hypos you may have are treated properly. Talk to your first aider about your diabetes, too. If you've had a hypo at work and needed help to treat it, talk to your employer and colleagues afterwards. If possible, explain why the hypo happened to show them that you can normally control the situation. They may also be able to help you treat your hypo in the future.
- **Taking time off:** Everybody takes time off work for sickness or hospital appointments. Diabetes doesn't necessarily make you more prone to sickness. But try to arrange several clinic appointments for the same morning and give your employer plenty of notice of when and why you'll be off. When you're ill, get medical attention and tell your employer as soon as you can. If you want to go on a diabetes education course and you're worried about getting the time off, you could ask your healthcare professional to write a letter to your employer in support.

Tips for getting the best from work

1. Be honest with your employer that you have diabetes.
2. If you don't feel you can cope with your job as it is, ask your employer to make some reasonable adjustments to your role.

Need to know ☆

We can give you advice on employment issues. We also have an employment self-help pack. See below for details. There's also more information and support on our website.

- Diabetes UK Helpline:
  email **helpline@diabetes.org.uk**
  or call **0345 123 2399***.
- Download the employment self-help pack at **www.diabetes.org.uk/t1-your-rights**

*Calls may be recorded for training and quality purposes.

Some questions

I think I've been turned down for a job because I have diabetes. What can I do?

You probably need specialist advice initially and, in some cases, legal advice. It'd be the same if you felt discriminated against or you felt you lost your job because of diabetes. Start by getting advice from our Advocacy service (see 'Need to know', above), and our website **www.diabetes.org.uk/t1-your-rights**. And if you're a member of a trade union, ask for help from your union rep.

Travel

You can travel all around the world. Diabetes won't stop you, but you need to make the right preparations.

Things to check before heading off

- Carry diabetes ID and a letter from your GP saying you have diabetes, and what medication you need.
- Take twice the amount of insulin and supplies as normal.
- In case of emergency, find out where you can get insulin at your destination.
- Check with your insulin manufacturer that your insulin is available there, and is sold under the same name. You can get prescriptions sent by courier.
- Flights cross time zones. Check with your healthcare team if you need to make any changes to your insulin regimen.
- Hot or cold climates may affect how insulin and your meter work. Check with your healthcare team.
- Apply for the free European Health Insurance Card (EHIC). See 'Need to know', page 63.
- Buy travel insurance.

Packing

- Check you have all your diabetes medication and equipment packed. Split diabetes supplies into separate bags, in case bags get lost.
- Pack snacks in case of delay.
- Take a letter from your doctor if you have insulin or syringes with you.

Travelling with a pump or CGM

If you have a pump or continuous glucose monitor (CGM), contact the airline before you travel – if possible, a few weeks before. It's recommended by the Civil Aviation Authority (CAA), but some airlines also require this, along with filling out additional paperwork. If you don't, you risk not being allowed on board with your pump or CGM.

Speak to your healthcare team in case you need to remove your pump. They can provide extra supplies, like insulin pens, and advise on doses.

There is caution about pumps and CGMs on aircraft because of wireless functionality, which may interfere with communication and navigation systems. If your pump or CGM can't work without a wireless signal, you may need to remove it and use an insulin pen. You may also need to test blood sugar levels with a standard meter.

X-ray machines and body scanners

Some pumps can go through X-ray machines and body scanners, and some can't. You must check with the manufacturer of your own pump for specific advice. If your pump can't, the advice from the CAA is:

There are some airports you won't be allowed to travel to if you refuse to be scanned. So it's advisable to check with your airline and the airports you'll be passing through to see if they allow an alternative check.

Need to know ☆

- If you're travelling within the EU, apply for an EHIC – they're still valid for people in the UK. An EHIC lets you get state healthcare in other EEA countries and Switzerland at a reduced cost, or sometimes for free. Go to **www.gov.uk/european-health-insurance-card**
- In some countries, blood sugar is measured in milligrams per 100 millilitres (expressed as mg/dl) and not in millimoles per litre (mmol/l). See our conversion chart at **www.diabetes.org.uk/t1-travel**
- There's more travel advice on our website at **www.diabetes.org.uk/t1-travel** to help you make the most out of your trip, including getting insurance, food on the go and managing your diabetes in different climates.

Tips for packing

1 Split your diabetes supplies into separate bags.

2 If you're flying, make sure you have some diabetes supplies in your hand luggage in case your bags get lost.

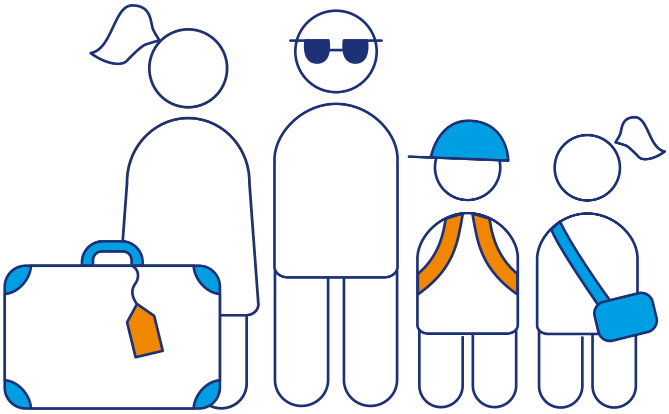
3 Insulin should be kept in your hand luggage as it can freeze in the hold.

Some questions ?

What if I'm sick while abroad?

Talk to your doctor for advice before you go, and get information from the tourist office, embassy or high commission of the country you're visiting about medical treatment there.

- Check your insurance policy, so you know what your insurers will pay for.
- Give the doctor the generic name – not just the brand name – of your medication.
- Read more about dealing with illness (see page 58).



Alcohol

Most of us like a drink or two. But, when you're having fun, it can be easy to get carried away and lose track of how much alcohol you're drinking. Whether you've got diabetes or not, government guidelines for both men and women say it's safest not to drink more than 14 units a week on a regular basis.

Hypos

As you treat your diabetes with insulin, drinking alcohol makes hypos (low blood sugar) more likely. It also slows down the release of glucose (sugar) from the liver, which is needed if you have a hypo.

If you have too much alcohol, you might not be able to recognise a hypo or treat it properly. Other people can mistake a hypo for being drunk, especially if you smell of alcohol. It's important to tell the people you're out with that you have diabetes, and what help you might need if you have a hypo. Also, make sure you carry some identification to let others know that you have diabetes, like an ID card, medical necklace or bracelet.

If you drink more than a few units in an evening, you'll have an increased risk of hypos all night and into the next day, too, as your liver continues to get rid of the alcohol. Always have a starchy snack, such as cereal or toast, before going to bed to help minimise this risk.

The morning after

If you end up having one too many, drinking a pint of water before you go to bed will help to keep you hydrated and may help to prevent a hangover.

If you do wake up with a hangover, you'll need to drink plenty of water. And, if you're suffering the hangover symptoms of headache, nausea, shaking and sweating, check your blood sugar level as you may actually be having a hypo. No matter how awful you feel, you need to treat a hypo straight away – don't ignore it. Likewise, you must stick to your usual medication. Always have some breakfast to help with your blood sugar control.

If you can't face food, or if you've been sick, take as much fluid as you can, including some sugary (non-diet) drinks.

Painkillers may help with a hangover headache, but try to avoid them until your liver has had time to recover. Remember, the morning after doesn't have to feel like this – try following our 'Tips for safer drinking' on page 65, and go to **www.drinkaware.co.uk**

Tips for safer drinking

1. Eat something carbohydrate-based before you drink, and snack on starchy food during the evening to keep your blood sugar levels up.
2. Tell the people you're with that you have diabetes, and carry medical ID.
3. Alternate alcoholic drinks with lower-alcohol or alcohol-free alternatives.
4. Pace yourself – enjoy your drink slowly and keep track of how much you're drinking.
5. Don't forget to take your hypo treatment out with you.

Need to know

- Don't drink more than 14 units of alcohol a week.
- Aim for a few days a week without drinking alcohol.
- Limit low-alcohol wines, sweet sherries and liqueurs as these tend to be higher in sugar. Also, stick to diet or sugar-free mixers.

Some questions

Should I go for lower-sugar beers and ciders?

Avoid these. Although they contain less sugar, the alcohol content is higher, and as little as one pint can bring your blood alcohol level above the legal limit.

What's in your drink?

Drink	Units
Pub measure (25ml) spirit, eg vodka, gin, whisky (40% ABV approx)	1
Bottle (275ml) alcopop (5.5% ABV)	1.5
Small glass (125ml) white, rosé or red wine (12% ABV)	1.5
Bottle (330ml) lager, beer or cider (5% ABV)	1.7
Can (440ml) lager, beer or cider (5% ABV)	2
1 pint lower-strength lager, beer or cider	2
Medium glass (175ml) white, rosé or red wine (12% ABV)	2.1
Large glass (250ml) white, rosé or red wine (12% ABV)	3

Diabulimia

Diabulimia is an eating disorder where someone deliberately and regularly reduces or stops taking their insulin to lose weight.

There are lots of reasons why it might develop. With Type 1 diabetes, it's suggested that the way you need to live to manage the condition – and the environment you find yourself in – can make you more vulnerable to eating disorders. For example:

- having to carefully read food labels
- the focus on your weight when you go to the clinic
- having to eat to treat hypos, which can cause weight gain and guilt
- being constantly aware of carbs and calories in food
- feeling shame over how you manage your diabetes
- a poor relationship with your healthcare team
- difficultly keeping to a healthy weight.

All of these have been listed as diabetes-specific causes that can lead to eating disorders in people with Type 1 diabetes.

It's unlikely that any of them exist alone, and diabulimia usually develops from a combination of physical, social and mental health problems.

If you think you have diabulimia, it's essential you speak to your healthcare team or someone you trust. See 'Tips for getting help', right. You can also get more information and advice at **www.diabetes.org.uk/t1-diabulimia**

Some questions

What do doctors think about diabulimia?

Diabulimia isn't a medically recognised condition, but it's a common term among the diabetes community. And changes to guidance used by healthcare professionals mean that insulin omission is now considered to be a clinical feature of anorexia and bulimia.

Tips for getting help

You can overcome diabulimia with the right help and support. You can get help from…

1. **Healthcare providers:** More and more diabetes clinics are familiar with diabulimia, as are GPs and eating disorder specialists. Diabulimia needs careful treatment from a team of specialists. There are also some dedicated recovery programmes.
2. **Diabetics with Eating Disorders (DWED):** A national charity for diabulimia and other eating disorders for people with Type 1 diabetes. You can get specialist information on their website, keep up with the latest developments, ask for training for your healthcare team, and join an online forum with others going through the same thing. Go to **www.dwed.org.uk**
3. **Diabetes UK Helpline:** We're at the end of the phone if you ever want to talk. Our helpline has dedicated, trained Helpline advisors to listen and help. Call **0345 123 2399***, or **0141 212 8710*** if you're in Scotland.

Need to know

- Diabulimia is dangerous. People who don't give themselves enough insulin over a long period of time have a much shorter life span. Complications linked to diabetes, including problems with your eyes, nerves and kidneys, appear more quickly, and it can cause infertility.
- In cases where diabulimia leads to severe diabetes ketoacidosis (DKA) and isn't treated, it leads to heart and organ failure, causing death.

*Calls may be recorded and monitored for training and quality purposes.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Religious fasting

Fasting is an important part of many religions. As well as the abstinence from food (and sometimes drink), fasting is also usually a time of prayer, reflection and purification. It's an opportunity for people to have a healthier lifestyle by learning self-control and making changes to their diet.

People with diabetes are usually exempt from fasting. There's a danger of blood sugar levels becoming too high, which can lead to diabetic ketoacidosis (DKA, see page 24). And if someone fasts and doesn't take in enough fluid, it can cause dehydration which may need hospital treatment. Speak to your religious leader about whether you're exempt from fasting.

Ultimately, fasting is a personal choice. If you do decide to fast, you definitely need to talk to your healthcare team beforehand, to make sure that you're able to look after yourself properly. See our 'Tips for fasting', below.

Tips for fasting

1. You'll need less insulin before the start of the fast, and the type of insulin may also need changing from your usual kind. Pre-mixed insulin isn't recommended during fasting.
2. Before starting the fast, have more slowly absorbed food (foods with a low glycaemic index) – like basmati rice and dhal – in your meal, along with fruit and vegetables.
3. Check your blood sugar levels more often than you normally would.
4. When you break the fast, have only small quantities of food, and avoid only eating sweet or fatty foods.
5. At the end of fasting, have plenty of sugar-free and decaffeinated drinks to avoid dehydration.

Need to know ☆

- If you have any diabetes complications, like damage to your eyes or heart or kidney disease, you could make these worse. So, you should seriously think about not fasting.
- Taking insulin and certain diabetes medication during fasting can cause hypos. If you feel that you're having a hypo, you must break your fast and take some sugary fluids followed by starchy food. Otherwise, you may need medical attention.
- You may develop high blood sugar levels during a fast if you don't take your insulin and prescribed medication, or if you're less physically active than normal. Symptoms of high blood sugar levels include feeling very thirsty, passing a lot of urine and extreme tiredness. If your blood sugar levels stay high and you have these symptoms, speak to your healthcare team.
- Don't forget to speak to your healthcare team if you're planning to fast, about how to adjust your insulin and any medication, testing, and how to avoid highs and lows.

Talk to us

Do you have a question about Type 1? We can give information and advice on all aspects of living with diabetes. Get in touch for answers, support or just to talk to someone who knows about diabetes. Call our helpline on **0345 123 2399*** or email **helpline@diabetes.org.uk**

If you're in Scotland, call **0141 212 8710*** or email **helpline.scotland@diabetes.org.uk**

*Calls may be recorded and monitored for training and quality purposes.

Complications

In this chapter

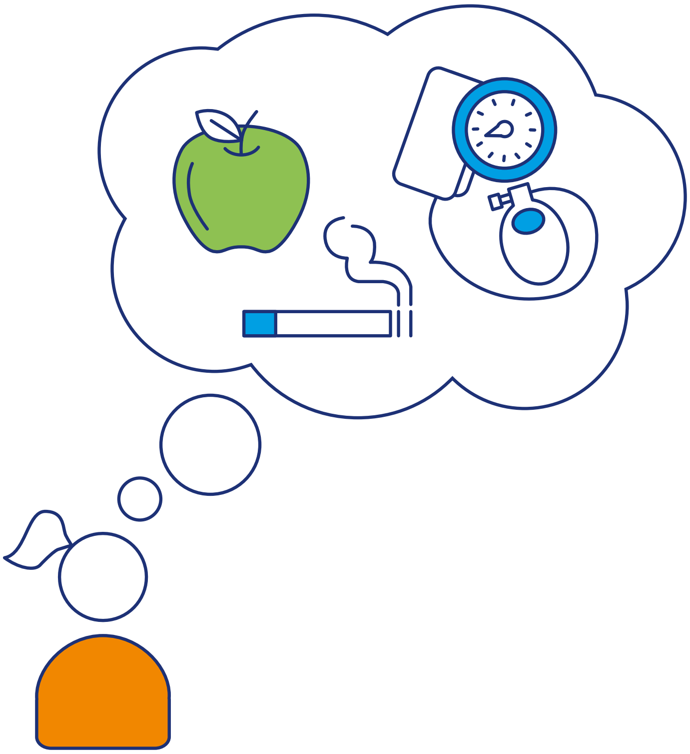
Avoiding complications

Living with Type 1 can be tough for a lot of reasons. And knowing what can go wrong is one of them.

Diabetes can lead to complications, like stroke, heart attacks, kidney failure, blindness and amputations. It's a scary list. But it's really important to understand why these things can happen and what you can do to avoid them.

Even if you have a hard time with your diabetes, it's important to remember that there's always something you and your healthcare team can do.

This section will help you understand a bit more about complications and explain all the things you can do to reduce your risk of experiencing them.



Why complications happen

Diabetes-related complications are mostly caused by high blood sugar levels over a long period of time.

When you have high blood sugar levels over a long period of time, it can damage almost every part of your body.

These aren't day-to-day spikes in your levels – everyone experiences these. It's continuing high blood sugar levels well above the target your healthcare team has set.

You're also more likely to experience complications if you have too much fat in your blood and if your blood pressure is too high.

What you can do

There are lots of different things you can do to lower your risk of complications. Remember, everything you do – however small – will make a difference.

Take control of your diabetes

Keeping your HbA1c within the target range set by your healthcare team is the single most important thing you can do. There are many ways your healthcare team can help you do this.

Stop smoking

If you smoke, then stopping will immediately reduce your risk of complications. Again, your GP and healthcare team will be able to help you quit.

Eat well

Sticking to a healthy diet makes it easier to reduce fats in your blood, like cholesterol. It'll also help you keep your blood pressure down.

Keep active

Lots of people with Type 1 find exercise difficult. Blood sugar levels can go high, go low or be unpredictable. But exercise is really helpful in keeping your heart healthy. Ask your healthcare team to work with you, so you can keep active and navigate the ups and downs.

Go to all of your appointments

Everyone with Type 1 needs a series of tests and checks every year to check their diabetes, look out for any problems and see if any further support is needed. These are the 15 Healthcare Essentials we've talked about. Take your checklist with you (see page 28). Making sure you get all of them will mean you know how your diabetes control is going.

What not to do

Don't keep quiet if your blood sugar levels are rising or you're struggling with any other part of your diabetes. Tell your healthcare team. They'll be able to help you and offer extra support – whether it's an education course or an appointment with a dietitian.

Meet Chris

Technology and being able to talk to others with Type 1 help Chris to manage his diabetes

"In the 31 years I've had Type 1, some things have changed, some things have stayed the same, but things have mostly got better. For me, my diagnosis was surreal rather than emotionally difficult, like the start of a marathon. I distinctly remember lying on a hospital gurney while IV drips were inserted into both arms. It was much harder on my parents, and particularly my mum. My parents had just seven days to learn about diabetes and how to control it, using their own child as the test subject, before we were sent home. As she says now: 'We were frightened in every way you can think of.'

Since the drama of diagnosis, my diabetes is still here like a dripping tap. It still doesn't behave the same one day to the next. It's still the first thing I think of in the morning and last thing at night, and a thousand times in between. On top of everything else – work stress, kids, bills, spilt coffee and traffic jams, diabetes likes to tap you on the shoulder and remind you it's still there. It can be too much for people dealing with busy lives, but at least now we have technology, like pumps, pens and CGMs, and we are connected to other diabetics online. At least we're less alone when figuring out how to deal with it."

Your eyes

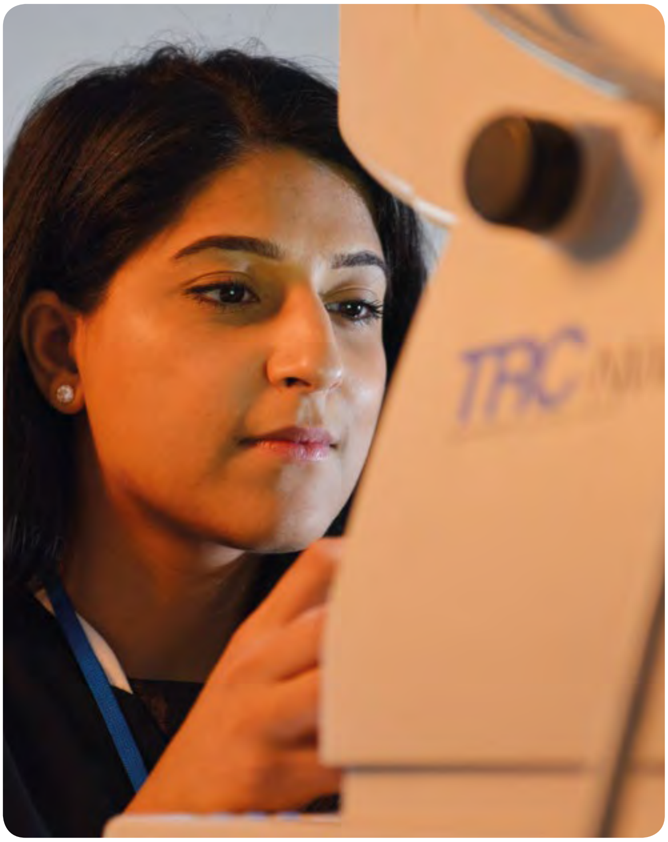
Nobody likes to think about losing their sight. But for some people with diabetes, it does happen.

In fact, in the UK, diabetes is one of the leading causes of preventable sight loss in people of a working age.

Eye problems happen because high blood sugar levels over a long period of time damage the blood vessels around the retina, the seeing part of the eye, and eventually the retina itself.

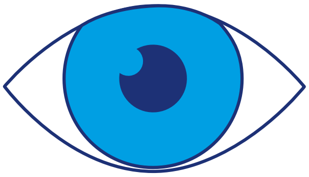
This is called retinopathy and will affect your vision, and can, ultimately, cause sight loss and blindness.

It's extremely unlikely that someone with diabetes will just wake up blind one day – the damage is gradual. Because of this, treatment to slow down or stop the damage is possible for most people.



Tips for what you can do

1. Go to your eye screening. Often, retinopathy can be quite advanced before it starts affecting people's vision. This is why going to your eye screening each year is so important. Your doctor will register you, and you will be sent an appointment in the post. This isn't the same as a regular eye test at the opticians. Your screening will be able to identify any problems at an early stage and you'll be able to get treatment before any serious damage is done.
2. Report any changes to your vision. If you notice any changes, or are struggling to see as clearly as normal, make an appointment with your doctor immediately. Don't wait until your next screening. If your blood sugar level goes higher than usual – even for a short period – you may notice some blurred vision. This is to be expected – once your sugar levels settle, your vision should return to normal.
3. Work with your healthcare team to lower your HbA1c. Your healthcare team should set you a target for your HbA1c levels. The closer you get, the lower your blood sugar levels, and the less chance you have of developing eye problems.
4. Keep on top of your cholesterol and blood pressure. High blood pressure and a lot of fat in your blood will increase your chances of getting eye problems.
5. Exercise and eating well will make a big difference, as will giving up smoking. Your healthcare team can help you with all three. For more on eating well, see page 36, and page 44 for more on exercise.



Treatment

There are several different treatments for damage to the eyes:

Lasers

The most common is laser treatment, which is used at early and moderate stages of retinopathy. Under a local anaesthetic, a tiny laser is aimed at the damaged bits of your eye, sealing any leaky blood vessels. This helps improve circulation, so that more oxygen and nutrients get to your retina. Some people will need more than one session.

Injections

If you have swelling around the centre of the retina, called maculopathy, this can be treated with an injection. It can stabilise and rapidly improve vision. Most people will need several injections, normally once a month.

Steroids

If other treatments don't work, steroids can help people with severe damage to their eyes. A tiny implant placed in the affected eye releases small amounts of long-acting steroids over a period of three years. It reduces inflammation and stops the retina producing a protein that affects sight.

Surgery

This is an operation called vitreoretinal surgery. You'll need to stay overnight in hospital and have a general anaesthetic. This is a major procedure and can sound pretty daunting, but may be your best treatment option if you have very advanced retinopathy.

How well it works depends on a number of factors, so you'll need to speak to your eye specialist about the risks involved and what's likely to happen afterwards.

Need to know

- The diabetes eye screening requires special equipment and will be looking for signs of retinopathy.
- You need to go to your retinal eye screening when you're invited. This should be at least once a year.

Some questions

What happens at diabetes eye screening?

It will be normally at your GP surgery, hospital or at an opticians.

Firstly, drops may be put into your eyes to make your pupils larger. This is so that the retina (the seeing part of your eye) can be seen more clearly. A photograph is taken of the retina in both eyes. None of this hurts – but the drops may sting a bit and leave you with blurred sight for 2 to 6 hours. A specialist will look at the photograph, after your appointment, for signs of change or damage. You'll be sent a letter with the results.

You should take sunglasses with you to wear afterwards because everything will seem bright. You also can't drive immediately, so you'll need to use public transport or arrange for a lift from a friend.

Your feet

Looking after your feet is really important for everyone with diabetes.

Every year in the UK, diabetes causes more than 8,750 lower-limb amputations. That's over 169 a week.

People with diabetes are at risk of amputations and ulcers because high blood sugar levels over a long period of time lead to nerve and blood vessel damage.

Nerve damage can mean you stop feeling pain in your feet and legs, so you might not realise if you've cut or burned them.

Blood vessel damage also makes it more difficult for your body to heal itself. Even small cuts, blisters and burns can lead to ulcers and infections, which can end in an amputation. But, don't worry, the vast majority of these can be avoided by taking good care of your feet and checking them regularly.

Tips for what you can do

1 **Ask for help to stop smoking.** Smoking makes it harder for blood to flow to areas like your feet. This can cause problems that can lead to amputation.

2 **Manage your blood sugars levels, cholesterol and blood pressure.** Easier said than done, but there is help out there so ask for support if you need it. You can prevent problems, as well as stop any from getting worse, by meeting your target levels.

3 **Check your feet every day.** Getting into the habit of looking at your feet means you'll be able to spot any changes, like cuts, colour changes and swelling. If you see a change, speak to your healthcare team straight away.

4 **Eat a healthy, balanced diet and stay active.** You can get help on what to eat from a dietitian and your healthcare team will be able to support you to get more active. We've also got lots of information to get you started.

5 **Take care cutting your nails.** Use nail clippers and emery boards. Don't cut down the side and don't clean your nails using the point of scissors. If you think you need help to look after your nails, speak to your nurse or podiatrist.

6 **Make sure your footwear fits.** Don't wear socks or shoes that are tight, loose or rub. Blisters can easily become serious if you have diabetes.

7 **Use moisturising cream every day.** Using emollient cream everyday help to stop your feet getting dry. It is best to speak to your healthcare team about which cream is best for you. If your feet become too dry, it can lead to cracks and infections developing. Avoid using cream or talcum powder between your toes.

8 **Don't use blades or corn plasters.** They can damage your skin. Speak to your healthcare team if you need help with corns or other skin problems.

9 **Get expert advice.** You should get a foot check and expert advice regularly to see if you're at risk of any problems. If you notice a problem, don't wait until your next check, get it looked at.

10 **Keep useful numbers handy.** Know what to do and who to call – your GP surgery, foot specialist or an out-of-hours service – if you have any problems with your feet.

Treatment

If you do experience a foot problem, make sure you see someone as soon as possible.

If it's serious, it's likely you'll need a course of antibiotics and your foot will probably be covered with a dressing. You'll need to avoid unnecessary standing or walking, and your diabetes treatment might be changed to help the healing process.

Make sure you know who to call and what to do if you notice your foot problem is getting worse.

Need to know

- Nerve damage is called neuropathy and can also affect other parts of the body, like your hands, stomach, bladder control and genitals. If you're experiencing any of these, talk to your doctor or nurse immediately.
- You need to have your feet and legs checked every year.

Some questions

What happens at an annual foot check?

After removing any footwear, your feet will be examined by a podiatrist.

They will look for corns, calluses and changes in shape. They'll also check for numbness or changes in feeling using a fine plastic strand called a monofilament. It doesn't hurt.

You'll be asked some questions, such as:

- Have you noticed any problems or changes (for example cuts, blisters, broken skin or corns)?
- Have you ever had any foot problems or wounds?
- Have you had any pain or discomfort?
- How often do you check your feet, and what do you look for?
- Do you have any cramp-like pains when walking?
- How well are you managing your diabetes?

Your footwear will be examined to make sure it's not causing any problems.

At the end of the check, you'll be told the results and your level of risk. It'll be explained to you what this risk means, and what you now need to do to look after your feet.

To find out more about your foot check, go to **www.diabetes.org.uk/t1-foot-check**

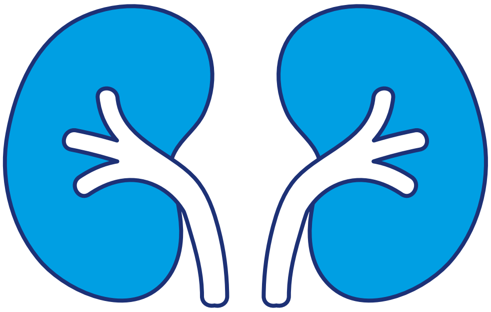
Your kidneys

More than one in three people who need kidney dialysis or a transplant have diabetes.

This is also called nephropathy, or renal disease.

It happens when there's damage to the small blood vessels in the kidneys. It develops slowly over many years. So it usually affects people who've had diabetes for a while. The walls of these blood vessels may become thicker or irregular. This prevents them from filtering waste products from the blood into the urine properly and keeping the things you need, like proteins.

If it's found early, kidney disease can be treated successfully.



Tips for what you can do

1. Keep blood sugar levels, cholesterol and blood pressure levels within your target range. Your targets for both your HbA1c (blood sugar), cholesterol and your blood pressure are set at your annual diabetes review. Keeping to these targets will help prevent damage to your kidneys. Speak to your healthcare team if you need more help with this.
2. Get your checks. Make sure your urine is tested for protein and you have a blood test to check how well your kidneys are working at least once a year, as part of your annual diabetes review.
3. Stop smoking. For help to stop smoking, speak to your healthcare team.
4. Make healthy food choices. This includes eating at least five portions of fruit and veg every day, wholegrains, oily fish twice a week, and cutting down on processed foods, salt, saturated fat and sugary foods, and keeping to recommended alcohol limits.
5. Keep active. Aim for 30 minutes of moderate intensity activity on at least 5 days of the week. See page 44.
6. Keep to a healthy weight. Get help to lose weight if you are overweight – your healthcare team can help you. See page 48 for more details.

Treatment

Catching signs of kidney damage early is key, and means it can be treated successfully. If it isn't caught early, it could lead to kidney failure.

If you have kidney damage, the focus of treatment is to reduce some of the symptoms and stop it getting worse. Early treatment involves following a healthy, active lifestyle (see 'Tips for what you can do', on page 76), and may mean taking medication. You may be asked to make specific changes to your diet, too. Your healthcare team will give you individual advice about the changes you'll need to make.

A group of drugs called ACE inhibitors or ARBs may also be used to protect your kidneys from more damage. These drugs can be given for high blood pressure, but are also used to treat kidney disease (even if you don't have high blood pressure). You may also be started on other medications to help manage the other problems caused by kidney damage (see 'Need to know', right).

Adults (18 or over) with chronic kidney disease should be offered the statin called artovastatin, to reduce the risk of any cardiovascular problems, like heart attack or stroke. Talk to your healthcare team for more advice on medication.

If you're ill and are vomiting, or have diarrhoea, speak to your doctor straight away – as some of your medication may need to be stopped urgently. If you have damage to your kidneys, some over-the-counter drugs are no longer safe – so always tell the pharmacist.

If kidney damage hasn't been caught early enough or it gets worse, you may need dialysis. This can be done at home or in a clinic. You'll also need to see a specialist renal team of doctors and nurses for information and support.

Need to know ★

- You need to have tests every year to check how your kidneys are working.
- Your kidneys have lots of different functions, like controlling blood pressure, keeping bones healthy and making new red blood cells. If kidneys are damaged, things like high blood pressure, anaemia, weaker bones and muscles may be more likely. If you have any of these signs, you may need medication.

Some questions ?

How can I tell if I have kidney disease?

You really can't tell that you have it in the early stages. That's why regular testing is crucial.

At least once a year, at your annual diabetes review, you need to have your urine tested for protein and a blood test to see how well your kidneys are working. You may have checks more often if any of these are out of target.

The urine test will check for the amount of albumin (protein) in the urine, which may leak from the kidneys if they're damaged. If there is protein in the urine, your healthcare team will rule out a urinary tract infection (as this could also be the reason for protein in your urine). If it's clear, the test should be repeated at least twice to be sure the result is accurate.

You should also be given two blood tests. The urea and electrolytes test (U and Es), and the estimated glomerular filtration rate test (eGFR). These also look for signs of kidney damage.

If you don't have your annual tests and any kidney problems are left untreated, you may start to feel unwell, tired or nauseous, and your hands and feet might look swollen.

Eventually, this could result in end-stage kidney (renal) failure. Kidney failure can only be treated with dialysis or a kidney transplant.

Heart attack and stroke

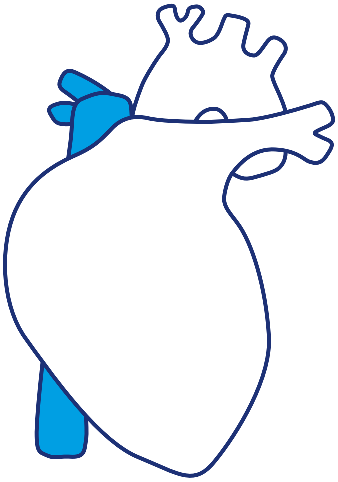
People sometimes assume that heart problems or strokes are a separate problem from diabetes.

They're not.

Heart attacks, heart failure and stroke often happen to people with diabetes because of damage to the heart and blood vessels.

This damage is known as cardiovascular disease. People with diabetes are more at risk of it because high blood sugar levels over a long period of time can damage the heart and blood vessels.

High blood pressure and high blood fats, like cholesterol, also increase your risk of experiencing a heart attack or stroke. The same goes for smoking.



Tips for what you can do

1. Get your annual checks. Along with being able to find out your HbA1c, you should find out your blood pressure and cholesterol levels. If there's room for improvement, your healthcare team will be able to help you.
2. Eat well. Making sure you eat a good balance of different foods and the right portions will help lower the fats in your blood. Because you've got diabetes, you're entitled to see a dietitian who can help you make the most of your diet.
3. Keep active. Exercise is great for everyone and can help reduce how much insulin you need, as well as reduce your cardiovascular risk. If you struggle with highs or lows when you're active, speak to your healthcare team for advice. A diabetes education course, like DAFNE, will give you the chance to find out what works for you.
4. If you smoke, quit. You can dramatically reduce your chances of a heart attack or stroke by giving up smoking. Ask your doctor or nurse for support next time you see them.
5. If you're on medication, take it as prescribed. Not taking medication as it's prescribed means it won't work as well. If you're struggling with a tablet or treatment, talk to your doctor or nurse who should be able to offer you an alternative.

Treatment

There's a range of medications used to help reduce cardiovascular risk. They can be used to prevent cardiovascular disease and are often started before a problem starts. For more advanced cardiovascular problems, there is a series of different procedures that can help reduce the chances of heart attacks and strokes, like stents. These are inserted into arteries to help keep them open and repair any damage that has been done.

Some questions

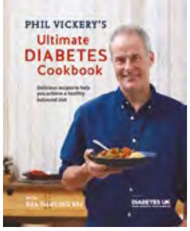
How can I tell if I have a heart problem?

You may not have any symptoms in the early stages. This can make it hard to diagnose.

But, a feeling of tightness in the chest, or painful legs when walking, can be symptoms of partially blocked blood vessels. When this happens to the blood vessels in the heart, it's called angina and it increases the risk of a heart attack. If it happens in the legs, it can increase the risk of ulcers and gangrene.

Need to know ☆

- **Watch out for telltale signs of a heart attack.** A dull ache, pain or tightness in the arm, chest or jaw could mean you're having a heart attack. Call 999 immediately.
- **Watch out for telltale signs of a stroke.** If you feel weakness in your arms or face, or your speech is slurred, you might be having a stroke. Call 999 immediately.



Glossary

Basal insulin (bay-sul) Also called background insulin, the insulin you take that works over most of the day.

Blood glucose meter A device that measures your blood sugar levels and stores the results of your blood glucose tests.

Blood sugar levels (Also called blood glucose levels), a measure of how much sugar is in the blood.

BMI Body Mass Index, which shows your weight in relation to your height.

Bolus insulin (bow-lus) The insulin you take to cover the rise in your blood sugar level when you eat and drink.

Carbohydrate The body's main source of energy, which is broken down into glucose (sugar).

Carbohydrate (carb) counting A very effective way of managing diabetes by matching your insulin to what you eat.

Cholesterol (kol-est-er-rol) A type of fat found in your blood: there are good types (HDL) and bad types (LDL).

Coeliac disease (see-lee-ack) A common autoimmune disease caused by a reaction to eating gluten, which damages the lining of the small intestine.

Continuous glucose monitoring (CGM) Measures blood sugar levels every few minutes using a sensor worn just under the skin.

Diabetes complications Health problems those with diabetes are at risk of developing in later life: these include damage to the kidneys, eyes and nerves, and heart disease.

Diabetes specialist nurse (DSN) A nurse with a special expertise in diabetes who will usually provide advice and support between your appointments with things like blood sugar testing and adjusting your insulin.

Diabetic ketoacidosis (DKA) (key-toe-ass-ee-doh-sis) A build-up of ketones (poisonous chemicals) that causes the body to become acidic: if not treated it can cause unconsciousness – and even death.

Diabetologist (die-a-bet-ol-a-jist) A doctor who specialises in diabetes and is usually based in a hospital clinic or specialist diabetes clinic. Diabetologists are sometimes based at your GP surgery or clinic.

Diabulimia (die-a-bull-ee-me-a) A type of eating disorder where you skip insulin to lose weight.

Dietitian (die-a-tish-an) An expert in food and nutrition, who'll give you information and support to help you make changes to your eating habits, if needed. Everyone with diabetes should see a registered dietitian when they're diagnosed and for regular review.

Estimated glomerular filtration rate (eGFR) (glow-mehr-you-lar) A test to measure how well the kidneys are working.

Glucose The main sugar in the blood, which the body uses for energy: the essential fuel for the body.

GP The doctor with the overall responsibility for your care. If they have a special interest in diabetes or are an expert, then they may play a bigger role in your care. If not, they may refer you to a diabetes clinic.

HbA1c test A blood test that measures your long-term sugar levels.

High-density lipoprotein (HDL) The 'good' type of cholesterol in your blood.

Hyperglycaemia (hyper) (hy-per-gly-see-me-a) When blood sugar levels are too high.

Hypoglycaemia (hypo) (hy-poe-gly-see-me-a) When your blood sugar levels drop too low (below 4mmol/l).

Insulin The hormone that keeps the levels of glucose in your blood under control.

Insulin-to-carbohydrate ratio The ratio used to calculate how much insulin you need to take for the amount of carbohydrate you're going to eat and drink.

Interstitial fluid (in-ter-stish-ul) The liquid found between the cells in the body.

Ketones (key-tones) Poisonous chemicals that can develop if there isn't enough insulin in your body to allow enough glucose to enter your cells. Can lead to diabetic ketoacidosis (DKA).

Lancet A finger-pricking needle used for getting a drop of blood to test blood sugar levels.

Low-density lipoprotein (LDL) The 'bad' type of cholesterol in your blood.

Millimoles per litre (mmol/l) A measurement of the concentration of a substance in a given amount of liquid – expresses the amount of sugar in the blood.

NICE The National Institute for Health and Care Excellence: this body decides the criteria for NHS funding, standards and services.

Ophthalmologist (oph-thal-mol-a-jist) A doctor who specialises in conditions that affect the eye. They'll be involved with your retinal screening review and treatments, if necessary.

Pharmacist (farm-a-sist) Based in pharmacies or chemist shops. As well as giving you your prescription supplies, they may also give you a medication review and lifestyle advice.

Podiatrist (poe-die-a-trist) An expert in feet and legs, who will check for – and manage – problems related to diabetes.

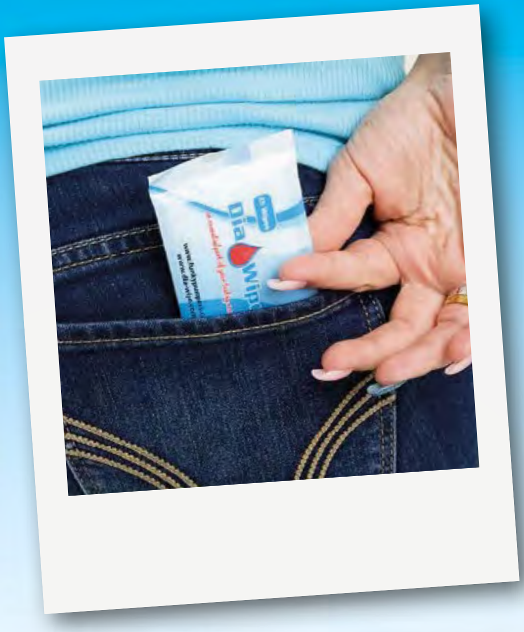
Practice nurse A nurse based at your GP surgery who may support your diabetes care, depending on their specialist knowledge.

Psychologist (sy-kol-a-jist) An expert who'll give counselling to help you deal with any difficulties you're facing, especially with managing the effects and impact that diabetes has on your life.

Reasonable adjustments The changes an employer must make to the way they would normally do things at work to allow for your diabetes.

Retinopathy (ret-in-op-a-thee) A condition where there's damage to the retina – the 'seeing part' of the eye.

Triglycerides (try-gly-suh-rides) A type of fat found in your blood.



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Dia Wipe™

a useful part of your testing routine

CLEAN FINGERS = ACCURATE BLOOD GLUCOSE RESULTS

Dia Wipes are an essential and convenient part of your blood testing routine. Having a clean finger to do your blood glucose test on is crucial. If your finger is not clean you may be acting on a false test result, which may mean giving yourself or your child too much insulin.

It isn't always convenient to find somewhere to wash your hands, Dia Wipes are small (the packet measures 10.5cm x 6.5cm and each packet contains 25 wipes - each wipe is 7cm x 4.5cm and every packet is resealable) - the perfect size to keep in your test kit/ pocket / bag - and the perfect sized wipe to clean the tip of your finger.

Dia wipes mean that you no longer have to stop what you are doing to go and wash your hands. They are really convenient at school, the office, out and about, at the beach, visiting friends, at the park…the list is endless.

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Who we are

We are Diabetes UK. Our vision is a world where diabetes can do no harm.

Diabetes affects more people than any other serious health condition in the UK. More than dementia and cancer combined. That means we need to take action now.

Because we're the leading UK charity for people affected by diabetes, it's our responsibility to lead the fight against the growing crisis.

And this fight is one that involves all of us – sharing knowledge and taking diabetes on together. Until we achieve our vision.

A world where diabetes can do no harm.

Get in touch

☎ 0345 123 2399*

✉ info@diabetes.org.uk

@DiabetesUK

www.diabetes.org.uk

www.facebook.com/diabetesuk

www.diabetes.org.uk/t1-forum

*Monday to Friday, 9am to 6pm. The cost of calling 0345 numbers can vary according to the provider. Calls may be recorded for quality and training purposes.