

# YOUR GUIDE TO TYPE 1 DIABETES



**DIABETES UK**  
KNOW DIABETES. FIGHT DIABETES.

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# WELCOME

**Finding out you have type 1 diabetes can be difficult, and you might feel scared or worried. There's lots of new information to take in, but you don't need to remember everything at once.**

The most important thing to know is that you can enjoy a full and active life, but with some changes.

This booklet is here to help with the key facts about staying healthy and living with diabetes.

Although it can be overwhelming, support is available. So don't be afraid to chat with your healthcare team. And you can always send us an email or pick up the phone – see the back cover for ways to get in touch.

**This guide is for you, whether you've just been diagnosed with type 1 diabetes, or you've been diagnosed for a while.**

If you need information about type 1 diabetes in children, find out more at [diabetes.org.uk/t1-children](https://diabetes.org.uk/t1-children)

## What is type 1 diabetes?

Type 1 diabetes is a serious condition where your blood glucose level, also called your blood sugar level, is too high, because your body can't make a hormone called insulin.

This happens because your body attacks the cells in your pancreas that make the insulin, so you can't produce it.

We all need insulin to live. It does an essential job. It allows the sugar in our blood to enter our cells and fuel our bodies.

When you have type 1 diabetes, your body still breaks down the carbohydrate from food and drink and turns it into sugar. But when the sugar enters your bloodstream, there's no insulin to allow it into your body's cells. More and more sugar then builds up in your blood, leading to high blood sugar levels.

## Symptoms

The build-up of sugar in the blood leads to different symptoms. Before you were diagnosed, you may have noticed:

- feeling really thirsty
- needing to wee more often
- feeling really tired
- losing weight – because your body was breaking down fat for energy.

## What causes type 1 diabetes?

Environmental factors and genetics can make you more likely to develop type 1 diabetes. If there's someone in your family with type 1 diabetes, there's a slightly higher chance of you developing it. But, many people with type 1 diabetes have no family history of diabetes.

If you have several close family members with type 1 diabetes, they may have monogenic diabetes, caused by a change in a single gene. It's often treated slightly differently than type 1 diabetes, which involves changes in lots of genes.

Speak to your diabetes team about genetic testing if you have several relatives with type 1 diabetes.

## Managing type 1 diabetes

There is currently no cure for type 1 diabetes. Instead, you'll need daily insulin injections or to use an insulin pump.

Other ways to help manage diabetes and keep you healthy include:

- being as physically active as you can – see page 39
- maintaining a healthy weight – see page 37
- going on a diabetes education course – see page 27
- going to your healthcare appointments.

It's important to manage type 1 diabetes well, otherwise it can lead to complications – see page 50.

You can avoid these problems, and this guide is here to help you.



**I take type 1 diabetes day by day and I don't worry if I have a bad day, because you can always make the next day better.** ””

Ted  
Diagnosed with  
type 1 diabetes at 16.

# BLOOD SUGAR CHECKS

**Your blood sugar level changes with insulin, food and activity levels, as well as things like being ill or feeling stressed. Checking it regularly with a blood glucose meter helps manage your diabetes. It helps prevent low blood sugar (hypoglycaemia) and high blood sugar (hyperglycaemia).**

You can track your blood sugar levels over time, and then adjust your insulin, diet and activity as needed. This lowers your risk of complications.

Blood sugar checks should become part of your daily routine. Your ideal range will be individual to you, so agree on your target levels with your diabetes team.

As a guide, the target blood sugar ranges for type 1 diabetes are:

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

You can check your own blood sugar at home by doing a finger

prick test and using a blood glucose meter. Your healthcare team can explain how to do this and they will give you a meter and prescribe test strips. This test tells you your blood sugar level at that moment.

You'll prick your finger with a small needle called a lancet, put the blood on a test strip and use a blood glucose testing meter to give you a sugar reading. After the test, throw the needle away into a sharps bin. Find out more about checking your blood sugar at [diabetes.org.uk/t1-testing](https://diabetes.org.uk/t1-testing)

Some people use a monitor that measures their blood sugar continuously throughout the day and night called a continuous glucose monitor (CGM) instead. Find out more on page 7.

## Choosing a meter

New meters come on the market all the time, so it can be tricky choosing the right one. Ask your healthcare team for advice on a meter that'll suit you.

If you have sight problems, you may not be able to use some meters, but your healthcare team can suggest alternatives.

Your doctor or nurse will give you a blood glucose meter for free if you have type 1 diabetes. But if you choose to buy your own meter, you might not get a prescription for the test strips it uses. Chat to your healthcare team before deciding.

### Tips for checking blood sugar using a blood glucose meter:

1. Wash your hands with soap and water. Don't use wet wipes or alcohol wipes as they 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. Don't prick the middle, or too close to a nail.

4. Use a different finger and a different area of the finger each time.
5. Keep a diary of your results or track them in an app. You'll be able to spot trends and it helps you and your healthcare team decide whether your treatment needs to change.

## Prescriptions for test strips

Your GP should prescribe enough test strips for your needs. If they don't, ask them about the decision and work with them to agree how many you need.

If that doesn't work, contact your local health decision makers and ask them to help. Our support pack can help. Visit:

[diabetes.org.uk/t1-test-strips](https://diabetes.org.uk/t1-test-strips)



## Continuous glucose monitoring

CGMs are small sensors worn on the skin that measure your sugar levels without needing to prick your fingers.

They don't measure your blood sugar levels like a standard glucose meter. Instead, they measure the amount of sugar in the fluid surrounding your body cells, called interstitial fluid. The results are not always the same as your finger prick result. There is a small time delay, especially after eating or exercising, so you'll need to check with a finger prick test if you're thinking of changing your treatment at these times. For example, like if you need to take more insulin or if you're treating a hypo.

## Types of CGM

A CGM measures your sugar levels continuously throughout the day and night. It can alert you to highs and lows.

You can access the information it collects about your blood sugar levels instantly and also see trends in your levels over time. The information can be sent to a display device automatically using Bluetooth. There are a few different models of this type of CGM available. Or you can scan the sensor with a smartphone or display device whenever you want to find out your blood sugar levels. This is called flash glucose monitoring, or Flash for short. There are currently two models of Flash monitor available in the UK, called the Freestyle Libre and the Libre 2.



With the right software, you can share information with your healthcare team during appointments or at any other time so that they can review and help adjust your treatment appropriately.

### **CGMs work in two different ways:**

- **Real time:** you can check your sugar levels yourself at any time, as well as being able to download them.
- **Retrospective:** you can't see your sugar levels in real time, but you can look back at results by downloading them.

### **Advantages of using a CGM**

- You can track your sugar levels all through the day and night.
- You can see trends, when your sugar levels are starting to rise or drop, so you can take action earlier.
- Generally, you don't need to do so many finger prick checks.
- It can help improve your HbA1c level as you can tailor your insulin doses more accurately. Find out more about HbA1c on page 22.

- It can help reduce hypos as you can see a downward trend before you actually go hypo.
- You can set it to alarm at high and low levels.

### **Disadvantages of using a CGM**

- You can get overloaded with data, which can confuse or worry you.
- You still need to do some finger prick checks.
- You may find wearing the sensor irritating or that it doesn't look nice.
- You need to be motivated to use the data it gives you to get the best diabetes management.

### **How can I get a CGM?**

If you want to wear one for a week or two to help you look at your sugar trends, your clinic might be able to loan you one.

If you want a long-term CGM, it needs to be funded in some way. You can buy your own one but there are also guidelines for who can get a CGM on the NHS. Speak to your healthcare team about how a CGM would help you and whether you're eligible for one.



See our website for more details at [diabetes.org.uk/t1-cgm](https://diabetes.org.uk/t1-cgm)



I now use a CGM, which has really changed the way I manage my diabetes. It's helped so much in terms of my medical training, as I don't need to constantly worry about going high or low when I'm on placement.



**George**  
A junior doctor,  
diagnosed with type 1 at 22.



# TREATMENT

## Insulin

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

With type 1 diabetes, you don't make any insulin, which helps move sugar from the blood into our cells for energy. So you need to take it either by injection or pump.

Some activities can affect the way insulin is absorbed, for example exercise, massage and heat from sunbathing or a hot bath can speed up how quickly it works.

## Injecting insulin

You'll inject insulin with an insulin pen. Your healthcare team can show you how. The places to inject are usually the thigh, top of the bottom, stomach and upper arm, where there's plenty of fatty tissue. These are the steps you'll be shown:

1. Decide where you're going to inject.
2. Make sure your hands and the place that you're injecting are clean.
3. Squirt out two units of insulin into the air from the insulin pen. This makes sure the top of the needle is filled with insulin.
4. If the nurse has told you to do this, lift a fold of skin, but not too tightly. You shouldn't need to do this unless you're very thin – check with the nurse. Put the needle in quickly at a 90 degree angle.
5. Inject the insulin. Make sure the plunger is fully pressed down and count to 10 before removing it.
6. Let go of the skin fold if you're using this method and dispose of the needle safely.
7. Always use a new needle. Reusing a needle makes it blunt and painful to inject with. It can also cause lumps to appear under the skin.

## Insulin on prescription

You're entitled to get your insulin for free on prescription. Your healthcare team can suggest how much to get and store at home, but most people

get enough for between one to three months. It's a good idea to have two weeks' worth left when you put your repeat prescription in.

## Where can I keep my insulin?

Insulin must be kept at temperatures lower than 30°C/86°F, ideally 2–6°C/36–43°F. Store insulin you're not currently using in the fridge. But don't put it in, or close to, the freezer compartment, as it may be damaged. You can keep your current insulin at room temperature, away from direct sunlight or heat sources.

Throw away any insulin that's been open for 28 days or more. Always read the information leaflet that comes with your insulin and check how to store it properly.

## Insulin pumps

An insulin pump is an alternative to injections. It continuously supplies you with insulin throughout the day and night.

Pumps deliver insulin through a tiny tube called a cannula, inserted under the skin.

You can leave the cannula in position for two to three days, then you need to change it and move it to a different place.

You tell the pump how much basal, or background, insulin you need, which it then delivers throughout the day.

You also tell the pump to give you extra insulin when you're eating, which is called the bolus dose. Your healthcare team can help you work out how much insulin you need.



## There are pros and cons to having an insulin pump:

Advantages of insulin pumps	Disadvantages of insulin pumps
Blood sugar levels are more often in your target range. Most people have fewer highs and lows.	You'll need to have your pump attached to you most of the time. Only take it off for small breaks, like when you're swimming or showering.
You won't have to inject as often.	The infusion set can sometimes get blocked, so you might need to change it at short notice or switch back to injecting temporarily.
You can tailor your insulin more easily before, during and after exercise.	You'll need to make time to learn about your pump, especially when you first get it.
You'll have more flexibility in what, when and how much you eat.	There's always a small risk of infection from the cannula.
Better accuracy when you're bringing down high sugar levels.	You'll still need to inject sometimes.



## Other therapies

Insulin is currently the only medication for type 1 diabetes. But researchers are looking into other potential treatments.

## Immunotherapy

Immunotherapy reprogrammes the immune system so that it stops damaging the insulin-producing cells in the pancreas. Doctors are currently using immunotherapies in clinical trials to see if they can delay or prevent type 1 diabetes. Find out more at [diabetes.org.uk/t1-immunotherapy](https://diabetes.org.uk/t1-immunotherapy)

## Islet cell transplants

Insulin is made in cells in the pancreas called islets, which are destroyed in type 1 diabetes. Islet cell transplantation involves taking islet cells from a donor pancreas and putting them in the liver of someone with type 1 diabetes. Research has found that the transplant can reduce the risk of severe hypos.

Islet cell transplants are available through the NHS for some people with type 1 diabetes who are prone to severe hypos.

Find out more at [diabetes.org.uk/t1-islet-cell](https://diabetes.org.uk/t1-islet-cell)

## Closed-loop system (artificial pancreas)

A closed-loop system, also called an artificial pancreas, is a way to manage your diabetes. It is made up of a CGM, insulin pump and a computer programme either on your smart phone or inside the pump. The technology works together to behave like the pancreas. The CGM tells the looping program your blood sugar levels, which then tells the insulin pump to deliver an appropriate dose of background insulin.

You generally still have to tell the pump how many carbs you're eating so it can work out your bolus dose. There's research going on at the moment about how well closed-loop systems work, and a small number of people have been given one to use by the NHS. Find out more at [diabetes.org.uk/t1-looping](https://diabetes.org.uk/t1-looping)

# HYPOS AND HYPERS

**It's a good idea to carry diabetes identification, like an identity card, bracelet or necklace, so people can help you if you have a hypo or hyper.**

## Hypos

A hypo, or hypoglycaemia, is when your blood sugar level is too low, generally below 4mmol/l.

You're likely to have a hypo at some stage. You won't always know why you've had a hypo but these things make them more likely:

- missing or delaying a meal or usual snack
- not having enough carbs for your insulin at your last meal
- strenuous activity without having extra carbs or reducing your insulin dose
- taking more insulin than you needed
- drinking alcohol on an empty stomach.

## Hypo signs

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

- trembling, feeling shaky, and sweating
- being anxious, irritable, or tearful
- looking pale
- palpitations and a fast pulse
- lips feeling tingly
- blurred sight
- feeling hungry or sick
- tiredness
- having a headache or being unable to concentrate
- confusion.



## Treating a hypo

Acting quickly stops a hypo from getting worse. If you notice symptoms or a blood sugar test shows your levels are too low, treat the hypo immediately. Eat or drink 15 to 20g of fast-acting carbs, like:

- four to seven glucose or dextrose tablets – check the label as different products have different carb amounts per tablet
- five jelly babies
- a small glass of a sugary, non-diet drink
- a small carton of pure fruit juice
- two tubes of a glucose gel such as GlucoGel®.

To find out how much you need to take, check the food label to see how many carbs it contains.

After a hypo you are likely to need some more longer-lasting carbs to stop your sugar levels from dropping again. Try to eat 15 to 20g of a slower-acting carb like a sandwich, a piece of fruit, cereal or milk. Or it could be your next meal if that's due.

## If you become unconscious

If a hypo is untreated, you could start feeling confused and sleepy or even become unconscious or have a fit. You need help to treat them, and your family and friends should know how to give you immediate help. They should:

1. Put you into the recovery position, on your side with one knee bent, so you can still breathe easily.
2. Give you a glucagon injection, an emergency injection that raises blood sugar levels, if you have one and someone knows how to use it.
3. If you don't have a glucagon injection, or haven't recovered 10 minutes after the injection, call 999 and ask for an ambulance.

They shouldn't try to give you any food or drink until you recover because you can't swallow and could choke.



## Hypos at night

Low blood sugar levels can happen at night. If they do, you might not always notice the symptoms and wake up straight away. This means that your blood sugar levels may drop further and the hypo may get more severe. If the hypo doesn't wake you up, you may realise you've had one if you feel very tired or have a headache the next morning.

If you think you might be having hypos at night, check your blood sugar levels before you go to sleep and during the night. If the checks suggest you're having hypos, you may need to change your insulin dose.

Speak to your healthcare team about this.

## Things to remember:

- Keep hypo treatments with you. Check the carb content if you buy new hypo treatments, as ingredients can change.
- Don't choose high-fat foods like chocolate or biscuits to treat your hypo straight away. The fat slows down sugar absorption, and they don't work quickly enough.

- Check your blood sugar levels before bed and during the night if you have night-time hypos.
- After a hypo, your blood sugar levels may go up. Maybe it made you hungry, and you ate a lot, or your body tried to correct your blood sugar levels from stores of sugar in the liver. But don't increase your dose of insulin after a hypo.
- Although hypos may feel scary, you shouldn't keep your blood sugar high to avoid them. Living with high blood sugars can cause other problems like feeling thirsty, tired or needing to wee. It could eventually cause serious diabetes complications – see page 50. It also risks diabetic ketoacidosis (DKA) – see page 18.

## Alcohol

Drinking alcohol can make hypos more likely if you take insulin, as it can slow down the release of sugar from the liver. 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 are out with that you have diabetes, so they can help

you if you have a hypo. Also, carry a diabetes ID card, medical necklace or bracelet.

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

## Hypers

A hyper, or hyperglycaemia, is when your blood sugar is too high. That's usually above 7mmol/l before a meal or above 9mmol/l two hours after a meal.

If your blood sugar levels are very high, it can lead to a DKA, which is a life-threatening emergency if it's not treated in time. See page 18.

## Hyper signs

The signs of a hyper are:

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

But you don't always have symptoms. Regularly checking 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 lifestyle. If your blood sugar level is high for a short time, you don't need immediate treatment. But if it stays high, you need to:

- drink lots of sugar-free fluid
- have extra insulin
- seek medical advice straight away if you feel ill – particularly if you're being sick or if you have ketones. See page 18 for more information.

## Why do I get hypers?

There are lots of reasons but some of the common ones are:

- missing an insulin dose
- not having enough insulin for the carbs you've eaten
- feeling stressed
- being unwell
- overtreating a hypo.

Consistently high blood sugar levels can lead to DKA. This happens when a severe lack of insulin means the body can't use glucose for energy, so it starts to break down fat in the body as another energy source.

Ketones are the by-product of this process. They're poisonous chemicals that build up and, if left untreated, cause the blood to become acidic. DKA is most likely to happen:

- at diagnosis, if you were very unwell
- when you're ill
- during a growth spurt or puberty
- if you haven't taken your insulin for any reason
- if your diabetes is not generally well managed.

DKA usually develops over 24 hours, but can be faster – particularly in young children or if you're using an insulin pump.

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

## Recognising DKA

DKA can cause pain in the tummy, feeling or being sick, breathing more quickly and breath that smells of ketones, like the smell of pear drops. If DKA is picked up early enough, it can be successfully treated.

You can check for ketones in your blood or urine by using urine ketone testing strips or blood ketone testing strips if your blood glucose meter has this function.

## When to check for ketones

You should check 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 sugar 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 go to hospital straightaway for urgent treatment.



## Illness

When you have diabetes, it's important to know how to cope when you're unwell.

Being ill can cause problems with your diabetes management, making your recovery more complicated. So you need to know how to keep your blood sugar levels as close to target as you can. Some people call this sick day rules.

### How being ill can affect your diabetes

When you're ill, your body releases more sugar into your blood. This response is part of your body's defence mechanism for fighting illnesses and infection. It happens even if you're not eating.

People who don't have diabetes produce more insulin to cope with illness. But when you have diabetes, your blood sugar levels rise. This can lead to your body making harmful ketones. You may wee more, feel thirsty, and become dehydrated. The symptoms of high blood sugar levels add to those of the original illness and can make it worse.

The opposite may happen with vomiting or diarrhoea. Because

you're not absorbing food normally, your blood sugar may drop.

### Managing your diabetes when you're sick – your sick day rules:

- Don't panic – contact your diabetes team who can help you.
- Keep taking your diabetes medications – even if you don't feel like eating. You may need to adjust or stop some medicines, so talk to your diabetes team about this at your regular diabetes review and make sure you already know what to do if you're ill.
- Keep eating if you can. Eat little and often and if you can't keep food down, try snacks or drinks with carbs to give you energy.
- Keep drinking. Have plenty of unsweetened drinks and if you're being sick or cannot keep fluids down, get medical help as soon as possible.
- Check your blood sugars more often – at least every four hours, including during the night.
- Check for ketones. You usually check when your blood sugar level is 13mmol/l or higher. But when you're unwell, your ketone levels are more likely

to go up. So check regularly throughout the day, no matter what your blood sugar levels are.

Find out more about sick day rules at [diabetes.org.uk/t1-sick-day](https://diabetes.org.uk/t1-sick-day)

## Hospital

If you're in hospital, make sure the hospital staff know you have type 1 diabetes.

Visiting A&E can mean longer wait times, so tell the staff you have diabetes and may need to eat to avoid a hypo. This matters because if you need surgery, you shouldn't eat beforehand. The hospital staff can help you plan what to eat or drink.

If you have a planned stay in hospital, the responsibility for managing your diabetes is between you and the hospital staff. Trained staff must care for you and should, if safe, allow you to monitor and manage your own insulin if you prefer. Ask to talk to the diabetes team if you are told you cannot do this but would like to.

Take your own diabetes equipment such as your pump supplies, pen, insulin and meter as there may be

a delay in getting these from the hospital. But remember to label these as yours so they don't go missing or get thrown away.

If you have to stay in hospital for your diabetes or another reason, you're entitled to high-quality care from specialist healthcare professionals. The hospital staff can contact a specialist diabetes team if you have concerns about your diabetes management.

If your diabetes treatment was changed during your hospital stay, ask your doctor or nurse if it needs to continue when you go home.



# YOUR CARE

## Staying well with diabetes

You're entitled to certain checks, tests and services to help you manage your diabetes and stay healthy. You might know this as your annual review, but some of these don't always happen every year. Having these diabetes checks helps you reduce your risk of serious diabetes complications. If you think you are not getting all these checks, speak to someone in your healthcare team.

The care you receive may have been affected by the coronavirus pandemic. However, your healthcare team is still there for you, and you should contact them if you're worried about anything or think you may have missed one of your regular checks.

## Know your blood sugar levels

You should have a yearly average blood sugar level check, called an HbA1c blood test. You may need this check more often, depending on what your levels are like. HbA1c is your average blood sugar levels for the last two to three months. Your

target depends on how you treat your diabetes and your situation. An ideal HbA1c level is 48mmol/mol (6.5%) or below for people with type 1 diabetes.

## Know your blood pressure

You should have your blood pressure tested at least once a year or more frequently. It should usually be under 140/80mmHg. But if you have problems with your eyes, kidneys or have had a stroke, it should be below 130/80mmHg. Your healthcare team sets a personal target for you.

## Know your cholesterol (blood fats)

You should have your cholesterol, or blood fats, checked at least once a year. Your healthcare team can tell you what the results mean and if you need to try and bring it down. There are three main types of cholesterol, called HDL (good cholesterol), LDL (bad cholesterol) and triglycerides. If your levels of LDL and triglycerides become too high and your HDL levels become too low, you have an increased risk of developing heart problems.





## Look after your eyes

You'll be invited to a free eye appointment called retinal screening at least once every two years.

It's not the same as a regular eye test, instead it checks for signs of damage to your eyes. If you notice any changes in your sight at any time, you must contact your doctor or optometrist.

## Check your feet

Because people with diabetes have a higher risk of developing problems that can lead to toe, feet, or leg

amputation, you must have your feet examined by your diabetes team at least once a year. If you need to see a podiatrist, your healthcare team can refer you. The good news is you can avoid problems by getting your annual check and following some simple tips for healthy feet on page 52.

## Keep your kidneys healthy

There are two tests for kidney function you need each year. One tests your urine for protein that could indicate 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.

## **Take control of your diet and weight**

Following a healthy diet with less salt and fatty food helps you manage your weight and keep your cholesterol and blood pressure levels in check, which reduces the risk of diabetes complications. Because you have diabetes, you're entitled to dietary advice from a dietitian who can help you plan healthy meals and lose weight if necessary.

## **Talk about how you're feeling**

It can be hard living with diabetes, and it may affect how you feel. Talk to your healthcare team about any worries and, if needed, ask for specialist support.

## **Go to a group education course**

A group education course like Dose Adjustment for Normal Eating, also called DAFNE, can help you learn all about diabetes. It's also a chance to meet up with others living with diabetes. You should be offered a diabetes education course in your area when you're first diagnosed, or a yearly refresher course later on. Find out more on page 27.

## **Know your healthcare team**

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.

## **Book your free flu jab**

People with diabetes have a greater risk of severe illness if they get flu, so it's important to get vaccinated. It's also essential to get the coronavirus vaccine and boosters when you're invited. If you get flu or become unwell after a vaccine, follow your 'sick day rules'.

## 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 your medication. Although it's difficult to talk about, your healthcare team is there to give you the support, advice or treatment you need.

## Stop smoking

Diabetes increases your risk of heart disease and stroke and smoking increases this risk even more. There's lots of support available to help you quit, and you're more likely to be successful using an NHS stop smoking service.

## Get information and specialist care if you're planning to have a baby

People with diabetes have more risks involved when having a baby. So you'll need regular monitoring by specialist healthcare professionals at every stage, from before you start trying to postnatal care. Speak to your diabetes team if you're thinking about having a baby. See page 45 for more information.



## Tips for getting the most from your appointments

- Before an appointment, think about what you need to know and what questions you have. Ask if you need to bring a urine sample or anything else.
- Have a pen and paper or your phone handy to write any notes.
- Check if you can bring someone with you or if someone can listen in if it's a telephone or video call. They can help remember what has been said.
- Ask who you should contact if you have more questions.
- Ask if there's any support available in your local area.
- Make a plan with your healthcare professional about what should happen next.

## Your healthcare team

Diabetes care can vary between GP surgeries and it's not the same in all parts of the country. You may have appointments with different healthcare professionals at your GP surgery, such as a practice nurse or healthcare assistant, as well as a GP. You may go to a diabetes clinic. Knowing which health professional to contact and when can make a big difference to how you manage your diabetes.

You don't have to wait until your booked appointments though, it's about knowing what to do between appointments too.

**GP** – This is the doctor who is your first point of contact for any health concerns. Generally, they coordinate your care and can refer you to specialists. However, some people attend a diabetes clinic instead.

**Practice nurse** – A nurse from your GP surgery may support your diabetes care, depending on their specialist knowledge.

**Diabetes specialist nurse (DSN)** – These nurses specialise in helping people with diabetes.

You'll see a DSN when first diagnosed, and they can give support and advice between appointments. They help with many aspects of diabetes management, including blood sugar checks and adjusting your medication.

They also usually help run diabetes group education courses, like DAFNE. Depending on your treatment and personal situation, you may not need to see a DSN.

**Registered dietitian** – An expert in food and nutrition who helps you eat well. You should see a registered dietitian when you're first diagnosed and have regular reviews with them.

**Registered podiatrist** – They help manage any problems with your feet that are related to diabetes.

**Ophthalmologist** – A doctor specialising in eyes. They look after you if you have any eye problems.

**Eye screener** – They do your retinal screening. See page 23.

**Pharmacist** – Based at your pharmacy or chemist, they can give you medicines and supplies on prescription and review your medication.

**Psychologist** – They can provide emotional support, if you're experiencing emotional difficulties or you're anxious about your diabetes.

## Learning more

Knowing about diabetes is key to managing your diabetes.

Having type 1 diabetes means having to make lots of decisions all day, every day. It can feel overwhelming, but no matter how long since your diagnosis, you can benefit from support and information. It'll help you manage your diabetes, so it's easier to live with and reduces your risk of developing complications. Ask your doctor or nurse about a free diabetes group education course. People who go on these courses often say they feel more confident about managing their diabetes,

making healthier food choices, looking after themselves and they value meeting other people with diabetes.

### The two main courses are:

- DAFNE. A face-to-face or virtual course that teaches you how to estimate the carbs and inject the correct dose of insulin for each meal, so you can fit diabetes into your lifestyle. Courses are informal and friendly and provide the opportunity to meet others living with type 1 diabetes.
- BERTIE. An interactive online course that allows for learning at your own pace. It helps you understand and manage your diabetes.

You may need to take time off work for the course. Ask your course provider or healthcare team for a letter to give to your employer.

**Our Learning Zone can help you manage your diabetes with confidence.**

**Clinically trusted advice, tailored to you and based on real experiences – whenever you need it.**

Visit [diabetes.org.uk/t1-learning](https://diabetes.org.uk/t1-learning) to find out more.



# EATING WELL

## Choosing healthier foods and eating well has lots of health benefits for type 1 diabetes.

Eating well helps manage your blood sugar levels, blood pressure and blood fat levels, and can reduce your risk of complications. Of course, you can still enjoy some of your favourite treats, but think about how often you have them and your portions sizes.

Carb counting and adjusting insulin doses is the best way of managing blood sugars for people with type 1 diabetes. This means estimating how many carbs are in your meal or snack and adjusting the amount of insulin you take accordingly. Here are our tips on getting started with carb counting.

### Carb counting

Carb counting means that your insulin dose can be individually matched to the amount of carbohydrate you eat and drink.

### How to count carbs

Carbs can be counted in two ways:

- in grams
- as carbohydrate portions (CP).

One CP is usually equal to 10g of carbohydrate. Find the method that works better for you.

### Insulin-to-carbohydrate ratios

To work out the right amount of insulin for the carb amount, you'll need to know your insulin-to-carbohydrate ratio.

These are different from person to person, so you have your own personal ratio depending on your age, weight, activity levels and how sensitive you are to insulin.

Your diabetes healthcare team can help you work this out. They usually estimate your starting insulin-to-carb ratio and then fine-tune this based on your blood sugar management. Eventually, you might even have a different insulin-to-carb ratio for each meal.

If you know how many grams of carbohydrate are in a meal and your insulin-to-carb ratio, then you can work out the number of insulin units you need to have as a bolus dose for the meal.

### Example

If your meal had 70g of carbohydrate and your insulin to carb ratio was one unit of insulin for every 10g carbohydrate, then you would need to take seven units of insulin as a bolus dose. The amount you take also depends on other factors such as your blood sugar level, illness or planned activity.

There are four ways you can count carbohydrate in food and drink.

### 1. Food labels: using the carbohydrate per portion value

If you look at the labelling on the back of pre-prepared food like a ready meal, you'll usually see something that looks like this:

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

If you ate all of the ready meal, the amount of carbohydrate you would count is 44.7g. It is important to count the total amount of carbs and not the 'of which sugars' value. When using a per portion value, make sure that this is the actual portion you are planning to eat.



## 2. Food labels: using the carbohydrate per 100g value

On the back of foods like pasta or rice, you'll see food labelling information like this:

Typical Values	As sold 100g contains
Energy	1515kJ (360kcal)
Fat	1.0g
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 carbs for the actual amount of the food or drink that you are going to have.

### How to work this out

Divide the amount of carbs (77.4g) by the weight (100g) and multiply by the amount you're eating, in this case 80g.

This means if you were planning to cook and eat 80g of rice, the amount of carbohydrate you would count is 61.9g not 77.4g.

### Here is the calculation:

$$77.4 \text{ (carbs in 100g)} \div 100 = 0.774$$

$$0.774 \times \text{portion size (80g)} = 61.9$$

In this example, you would round up the amount to 62g.



The cooked weight of foods like pasta, rice and potatoes varies from the raw or pre-cooked weight, so check which values you are using.

The label should tell you whether the nutritional information is as sold or as prepared. If you weigh the item before cooking to calculate the carb amount, you will need to adjust this if you end up eating less.

### 3. Reference lists, visual guides and app

Reference lists and visual guides, such as Carbs & Cals, which you can order from our shop at [diabetes.org.uk/carbs-and-cals](https://diabetes.org.uk/carbs-and-cals), help you estimate carbs. They list the amount of carbohydrate in handy measures, such as one bread roll, one medium banana or one scoop of ice cream. Some reference lists also contain pictures too so you can compare. There are also some apps available to download to your phone, for example the Carbs & Cals app at [www.carbsandcals.com/app/app](https://www.carbsandcals.com/app/app)



#### 4. Restaurant and café nutrition information

Many restaurants and cafés now list nutritional information for their products online. You may find information that looks like this:

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

So the information looks very similar to food packaging, but the values are average values and the dish that you are served may vary in size and content. You can still use the method on page 30, but in restaurants and cafés but you need to use your judgement and experience too.

**“ The turning point for me was going on a carb counting course. It gave me the tools and the education to manage my diabetes well. That course was the first time I’d ever met anyone else with type 1 diabetes. ”**

Natalie, diagnosed at 20.

## Four tips to start carb counting today

1. Stop, think and make a mental note of which food and drinks you have during the day that contain carbs and need to be counted.
2. Look at food labels. Pull the food and drink out of your kitchen cupboards and find out just how much information you have to hand.
3. Practise estimating the carbohydrate content of your meals – use reference lists to check your accuracy.
4. Invest in a good set of weighing scales that are accurate to the nearest five grams, have a flat base, are digital and can be set to zero.

There's lots more about carb counting on our Learning Zone, where you can find free information, quizzes and tools to help you manage your diabetes. Find out more at [diabetes.org.uk/t1-learning](https://diabetes.org.uk/t1-learning)

We've also got lots of recipes to help take the hard work out of carb counting. Taking the time to work out the carbohydrate values of your day-to-day meals helps you build up a personal reference list that you can use again and again. Browse over 500 recipes at [diabetes.org.uk/t1-recipes](https://diabetes.org.uk/t1-recipes)

## More information

Learning to carb count is easier when you have more information and support.

Your diabetes healthcare team can refer you to a diabetes education course. You'll learn all about carbohydrates, monitoring your blood sugar levels, and adjusting your insulin.

You can find out about courses in your area from your diabetes healthcare team.

## Making healthy choices

Here are some tips to help you with healthy eating, and you can find out more at

[diabetes.org.uk/t1-eat-well](https://diabetes.org.uk/t1-eat-well)

You can also ask to see a dietitian if you need help.

### Choose healthier carbs

You need to know about carbs because they have the greatest effect on your blood sugar levels after eating them. Choose healthy ones and keep an eye on portion sizes. Healthy carbs include:

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

You should cut down on low-fibre carbs like white bread, white rice and highly processed cereals. Check food labels if you're not sure if something is high in fibre.

### Eat less salt

Too much salt can increase your risk of high blood pressure and that

puts you at risk of heart disease and stroke. And when you have diabetes, you're already more at risk of these conditions.

Eat no more than 6g, or around one teaspoon, of salt a day. Pre-packaged foods already have salt in them so check the labels and choose those with less salt. Cooking from scratch helps you monitor how much salt you're eating. Try swapping salt for different herbs and spices to add extra flavour.

### Eat less red and processed meat

Red and processed meats all have links with cancer and heart problems, so it's best to cut down on these. Try swapping things like sausages, ham and beef for pulses, like beans and lentils, eggs, fish, chicken or turkey.

### Eat more fruit and vegetables

Aim to eat more fruit and vegetables at mealtimes and for snacks because they're full of healthy vitamins, minerals and fibre. Fibre stops your blood sugars from increasing too quickly after



eating carbs and helps keep your bowels healthy.

Although fruit is sweet, your body processes the natural sugar in whole fruit differently from the free sugars in things like chocolate and cakes. So you can eat fruit regularly, but it still needs to be counted as carbs. Try to spread it over the day rather than having lots at once.

## **Choose healthier fats**

You need fat for energy and to help absorb vitamins. 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.

Also, the fats in oily fish like trout, herring, sardines, salmon and mackerel have omega-3, which is good for your heart. So, aim to have two portions of oily fish a week.

Saturated fats from red and processed meat, ghee, butter, lard, biscuits, pies, cakes and pastries aren't healthy. They can increase your blood fat levels and risk of heart disease, so you should try not to eat them too often.

All fats are high in calories, even the unsaturated kind, so you may want to cut down on cooking with oil and go for steaming, grilling or baking instead if you are watching your weight.

## **Cut down on free sugars**

Free sugars are sugars added to foods by you or the manufacturer, or found naturally in honey, syrups and fruit juice. Cutting down on them helps manage your blood sugar levels, keep your weight down and reduce your risk of health conditions like heart disease.

It's difficult to cut out free sugars entirely but try to swap in healthier choices. Swap sugary drinks, energy drinks and fruit juices for water, milk and tea and coffee, without sugar. You can also try low- or zero-calorie sweeteners, also called artificial sweeteners.

You should continue to treat any hypos with free sugars – see page 14 for more about treating hypos. Talk to your diabetes team if you are having lots of hypos though, because you may need adjustments to your medication.

## **Choose healthier snacks**

Go for yoghurts, unsalted nuts, seeds and fruit and vegetables instead of crisps, biscuits and chocolate. And watch how much you eat in a serving.

Find out more about portion sizes at [diabetes.org.uk/t1-portions](https://diabetes.org.uk/t1-portions)

## **Ignore 'diabetic' food**

It's against the law for food to be marketed as 'diabetic'. It doesn't have any special health benefits. It may also contain similar fat and calories as other products, so it can still affect your blood sugar levels. Plus, it may 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 them.

Some supplements can affect your medications or make diabetes complications, like kidney disease,



worse. So, it's much better to get your nutrients from eating a range of foods.

## **Be sensible with alcohol**

Alcohol is linked to health risks like raised blood pressure, dehydration, cancers, heart disease, and making neuropathy (nerve damage) worse.

Try to keep to a maximum of 14 units a week. A pint of lower strength beer or medium glass of wine is around two units. Spread them out to avoid binge drinking, and go several days a week without alcohol.

Alcohol is also high in calories, so if you do drink and you're trying to lose weight, think about cutting back. See more information on alcohol and hypos on page 16.

## **Religious fasting**

Fasting is an important part of many religions but there are exceptions to this. People who are ill or have medical conditions do not have to fast. This includes people with diabetes. Speak to your religious leader if you have questions. If you do choose to fast, consult your doctor or healthcare team

beforehand, to make sure that you can do so safely. Because you use insulin, there is also the risk of the blood sugar levels becoming too low and having hypos, or too high which can lead to DKA. There is more information on our website at [diabetes.org.uk/t1-fasting](https://diabetes.org.uk/t1-fasting)

## **Looking after your weight**

Before you started insulin treatment, you may have lost a lot of weight. That's because without insulin your body was using fat and muscle for energy instead of sugar.

Now you're using insulin, you may feel hungrier and eat more because your body can use sugar for energy again.

Although you'll regain the weight you lost, this won't continue. If you're not taking in more calories than you need, your weight should level off and remain healthy.

At your annual review, your healthcare team can calculate the right weight for you by measuring your waist. Or they may measure your height and weight and calculate your body mass index (BMI).

Reducing your waist size helps your blood sugar levels and reduces the risk of long-term problems like heart disease and stroke.

Waist measurement targets:

- Black or white men:  
below 94cm (37in).
- South Asian men:  
below 90cm (35in).
- All women:  
below 80cm (31.5in).

Although your weight doesn't cause type 1 diabetes, it's still important to stay at a healthy weight. If you are above a healthy weight, losing even a small amount improves health, including blood pressure and cholesterol levels.

Because everyone is different, some people find it easier than others to lose weight. Diabetes can also bring extra challenges. But, with the proper support, you can get the right balance of healthy eating and activity. Ask to see a dietitian if you need help or ask to be referred to an NHS weight management service.

## Snacking

Overtreating or worrying about hypos may mean you eat or drink more calories than you need. You can avoid this with a balanced insulin plan that reduces the risk of hypos. Your healthcare team can help with this and advise on the best hypo treatment, healthy snacks and portion sizes.

## Crash diets

Drastically reducing the amount you eat or cutting out whole food groups can mean you're in danger of missing out on vital nutrients, which can harm your health. So instead, aim for small, achievable weight loss targets like 0.5–1kg (1–2lb) a week.

## Gaining weight

If you're underweight, talk to your dietitian. They may suggest ways to gain or maintain weight like eating smaller, more frequent meals, eating more healthy fats or dairy, and having nourishing, milky drinks.

If you have unexplained weight loss, you should talk to your GP and you should be tested for coeliac disease. Find out more at [diabetes.org.uk/t1-coeliac](https://diabetes.org.uk/t1-coeliac)

# MOVING MORE



**Physical activity is good for you and has many benefits for your body and mind. When you're living with type 1 diabetes, regular physical activity can help you avoid diabetes complications.**

Activity can help you:

- support heart health by improving your cholesterol and blood pressure levels
- strengthen muscles and bones
- reduce stress levels and symptoms of depression and anxiety
- sleep better
- lose weight or keep to a healthy weight.

You don't have to join the gym, as even moving a little more makes a big difference. Just start with what you enjoy. For example, try walking around the block, doing some gardening, or swimming.

Aim for at least 150 minutes of moderate physical activity, which gets your heart beating faster, every week. It should make you breathe a bit faster, but you can still

talk. Or do 75 minutes of vigorous activity, where you're breathing much faster, and it isn't easy to talk.

Two or more times a week, you should also try to do activities that strengthen your muscles. These include things like carrying food shopping or yoga. Also, try to spend less time sitting and more time on your feet, ideally moving around.

## Blood sugar levels and activity

Although exercise is essential, it uses energy from glucose, so you'll need to learn how it affects your blood sugar levels to do it safely.

Aerobic activities, like long-distance running, increase your heart rate and breathing rate steadily over a longer period of time. They tend to lower blood sugar levels and increase the risk of hypos.

Anaerobic activities, which are usually more intense, like sprinting or weight training, can raise blood sugar levels. This is because your liver immediately releases stored glucose into your blood so that

your muscles can quickly access energy for the activity you are doing. Some activities, such as football, combine both types of activity so could make your blood sugars go up or down. You're also more sensitive to insulin and more at risk of hypos 24 to 48 hours after exercise.

Speak to your healthcare team before starting any new physical activity. You should also check your blood sugar levels more often before, during and after activity to see how it affects your diabetes. This will help you balance your insulin with the carbs you eat and the activity you do. Keep records of what happens so your healthcare team can help you with individual advice.

## Avoiding hypos

By planning ahead and reducing insulin, or having more carbs, you reduce the risk of a hypo. If your blood sugar levels are below 7mmol/l before activity, you may need to have extra carbs, unless you are using a closed-loop pump and have been advised not

to do this. If you've had a severe hypo, avoid any exercise in the next 24 hours.

Always carry hypo treatment and medical ID and teach people around 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 during your activity, for example your leg before running. This means your blood sugar may go lower more quickly.

If you're trying to lose weight, it's probably best to reduce your insulin before activity rather than increasing the amount of carbs

you eat or drink. Speak to your healthcare team for advice.

## Avoiding hypers

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 18. If ketones are there, avoid any activity until they're gone.

Consider injecting an extra dose of bolus insulin, also called a correction dose. Speak to your healthcare team about how to do this.

## If you're looking for ways to get started moving more, we're here to help

**From seated exercises to 30 minute workouts, we've got resources for every ability and stage.**

**For videos, a free activity planner and more, visit [diabetes.org.uk/t1-move-more](https://diabetes.org.uk/t1-move-more)**





The mental health aspect of diabetes is definitely the hardest thing, especially as a young adult. Diabetes is like having another full-time job. Peer support has been the most valuable thing for me, either online or in person. It makes you feel less isolated knowing that there are other people out there with type 1.



**Lynsey**

Diagnosed with type 1 diabetes at the age of six.

# EVERYDAY LIFE

## Emotional wellbeing

Whether you've just been diagnosed or you've lived with diabetes for a long time, you may need support with your emotional wellbeing.

Perhaps you feel stressed, your mood is low, or you're burnt out. Your friends and family might be feeling like this too. Whatever you're feeling, you are not alone.

Type 1 diabetes is a serious condition and taking medication every day can feel daunting. But many people with type 1 diabetes say that they get used to these changes and find balance in their life.

## Emotions

Everyone is different and how you and your family cope with your diabetes diagnosis will vary. One day you might feel positive about managing your condition and the next you feel less motivated. But you don't need to go through this alone.

Getting the emotional support you need is just as important as any other part of your treatment.

## Stress

Stress doesn't cause diabetes, but it can affect your blood sugar levels and how you look after your condition.

Having diabetes to manage on top of life's normal ups and downs can be overwhelming and frustrating. These feelings are called diabetes distress, and they can lead to diabetes burnout, where you stop taking care of yourself and your diabetes.

Diabetes isn't easy to live with, and it can also feel harder when many people don't understand it. But you're not alone, and it's important to talk about how you feel.

Find out more about coping with stress at [diabetes.org.uk/t1-stress](https://diabetes.org.uk/t1-stress)

## Looking after your wellbeing

There are some simple steps you can take to look after your wellbeing and reduce stress.

### Connect with others living with diabetes.

- Talking to people you trust about your feelings can really help. And we're here to support you. To find out more, go to [diabetes.org.uk/t1-how-we-help](https://diabetes.org.uk/t1-how-we-help)
- Join a local Diabetes UK group to meet other people who live with diabetes and talk about your experiences. Find out more at [diabetes.org.uk/t1-groups](https://diabetes.org.uk/t1-groups)
- Get involved with Diabetes UK's online communities on Facebook, Twitter, Instagram, YouTube, TikTok and LinkedIn. Go to [diabetes.org.uk/t1-communities](https://diabetes.org.uk/t1-communities) for more details.
- Join Diabetes UK's online support forum at [diabetes.org.uk/t1-forum](https://diabetes.org.uk/t1-forum) to find tips, advice and emotional support and be part of a welcoming community.

### Take care of yourself.

Try and get a balance between looking after yourself and not putting too much pressure on yourself to do everything perfectly.

Making time to rest and unwind, can also help reduce stress.

You could try relaxation exercises, massage or meditation.

**Depression** is a serious condition but it can be treated. Symptoms of depression include feeling sad or down for more than two weeks, lack of interest and pleasure in your normal activities and other symptoms such as problems sleeping, lack of energy and difficulty concentrating. If you are experiencing any of these symptoms, talk to your GP or healthcare team. There are different ways that people manage or treat depression. Your doctor may advise you to talk to a professional, recommend medication or point you towards Cognitive Behavioural Therapy. Getting support from family or friends or other people who have had similar experiences may also help.

**Eating disorders** are more common in people with type 1 diabetes. This is where you develop an unhealthy relationship towards food and eating. There are lots of



reasons for this and it can involve a combination of physical, social, and emotional health problems.

It may be because when you have type 1 diabetes, you need to pay more attention to food, portion control, counting carbs and blood sugar. There may also be a focus on your weight when you go to the clinic.

Eating disorders include binge eating and diabulimia.

Diabulimia is a dangerous eating disorder that can cause serious health complications. It's when someone reduces or stops taking their insulin to lose weight.

With the right help and support, you can recover from diabulimia. If you think you have diabulimia, or another eating disorder, speak to your healthcare team. For more information, visit [diabetes.org.uk/t1-eating-disorders](https://diabetes.org.uk/t1-eating-disorders)

**Get support as a family member or carer.** Most things are easier to face with help from friends and family, but diabetes can put a strain on relationships. Sometimes it can be hard supporting a person with diabetes, even if it's your partner, child or close family member.

We've got more information on supporting someone with diabetes on our website at [diabetes.org.uk/t1-carers](https://diabetes.org.uk/t1-carers) or you can call our helpline for more advice.

## Fertility and pregnancy

Women with diabetes can have healthy babies but planning for pregnancy and getting help and advice is essential.

Having diabetes increases the risk of serious health complications during pregnancy and childbirth. The good news is that you can reduce these risks with support from your doctor and healthcare team so you can have a healthy pregnancy and baby.

These tips can help you plan for a healthy pregnancy:

- Keep using effective contraception until you have discussed trying for a baby with your healthcare team.
- Set an individual blood sugar level target with your healthcare team and ask for support to keep on track. Speak to your healthcare team about whether using a CGM could help with this.

- Have a medication review with your doctor as some aren't safe to take during pregnancy.
- Take folic acid every day. You need a prescription for high dose folic acid (5mg).
- Have eye screening and kidney tests before stopping contraception.
- Start making healthy lifestyle changes like eating healthily, reducing alcohol, quitting smoking and being active.

For more information, go to [diabetes.org.uk/t1-pregnancy](https://diabetes.org.uk/t1-pregnancy)

## Periods and menopause

Hormones fluctuate during your period and menopause, which can affect blood sugar levels.

Both oestrogen and progesterone, hormones released during your menstrual cycle, can affect your blood sugar levels. For some people, this can cause a big change in blood sugar levels, but for others, blood sugars hardly change at all. Everyone is different so it's about learning how your periods affect you. Progesterone might cause insulin resistance meaning your blood sugars could rise around five days

before a period. You should check your blood sugar levels more than usual before, during and just after a period so you can calculate your insulin dose. Your healthcare team can help with this.

Hormone levels can also fluctuate a lot in the last few years before reaching menopause. This can lead to your blood sugar levels changing more than usual. Weight gain is also common during this time, so your medication may need adjusting.

For more information, go to [diabetes.org.uk/t1-periods](https://diabetes.org.uk/t1-periods)

## Work

Diabetes shouldn't affect your chances of getting or keeping a job.

Even though you may not think of diabetes as a disability, there are laws to protect you at work. The Equality Act 2010 applies in England, Wales and Scotland and The Disability Discrimination Act applies in Northern Ireland.

Both laws state how employers must not disadvantage employees and job seekers with disabilities.

You can tell your employer you have diabetes, and they must

make reasonable adjustments if you can't cope with your job as it is. For example, your employer could change your shift patterns or mealtimes, or offer you a different job in the same organisation.

## Applying for jobs

Apart from the UK armed forces, it's unlawful for an employer to refuse to employ people with diabetes. However, some safety-critical work has health requirements that exclude people with certain medical conditions, including diabetes.

There are no blanket bans in the emergency services for people who use insulin. Instead, employers use individual medical assessments. If you think you've been refused a job because of diabetes, you can get advice from our website [diabetes.org.uk/t1-your-rights](https://diabetes.org.uk/t1-your-rights) or email [helpline@diabetes.org.uk](mailto:helpline@diabetes.org.uk).

And if you're a member of a trade union, ask for help from your union rep.

## Telling people at work

People may not understand diabetes, so it's helpful to give

them some basic information. By discussing hypos and treatment, your colleagues are prepared to help you if necessary. You can also explain that diabetes doesn't necessarily make you sick, but you'll need time off for regular clinic appointments. Try to give your employer as much notice as possible about these visits.

If you want to go on a diabetes education course but worry about getting the time off, ask your doctor or nurse to write your employer a letter in support.

## Travel

Diabetes won't stop you from travelling, but to avoid problems, you need to plan and prepare.

## Things to check before travelling

- Carry diabetes ID and a letter from your GP saying you have diabetes and a list of medications and equipment you need.
- Take twice the usual amount of insulin and supplies.
- In case of emergency, find out where you can get insulin at your destination.

- If flights cross time zones, check with your healthcare team if you need to change your insulin or medication routine.
- Hot or cold climates may affect how insulin and your meter work, so check with your healthcare team. You might need a cooling bag to keep your insulin in.
- Buy travel insurance, ensuring you tell them you have diabetes when taking out the policy.
- Check the UK government website [gov.uk](https://www.gov.uk) or [travelhealthpro.org.uk](https://www.travelhealthpro.org.uk) for the latest rules on travelling and travel health guidance.

## Packing

- Split your diabetes supplies in separate bags or between people in case bags get lost.
- If flying, don't put insulin in the hold, as it can freeze. Instead, keep diabetes supplies in your hand luggage with a letter from your healthcare team.
- If you are carrying needles and insulin on your flight, take a letter from your doctor and have ID ready.
- Pack snacks in case of delay.

## Travelling with a pump, CGM or Flash monitor

Contact the airline before you travel if you use a pump, Flash or a CGM. You may need to complete paperwork to allow you to board.

The concern is that because pumps and CGMs use a wireless signal, they could interfere with communication and navigation systems. If your pump or CGM can't work without a wireless signal, you may need to remove it, check blood sugar levels with a standard meter, and use an insulin pen.

Also, don't put your pump or CGM device through whole-body scanners or X-ray machines to avoid damage. Airports use X-ray machines on both checked-in and hand luggage.

You can normally go through X-ray machines wearing a flash glucose sensor. But you should still tell security staff when you go through screening. Turn off the reader during your flight.

If you have diabetes and you're carrying any medical equipment, you can download an awareness

card by searching 'medical device awareness card' on the Civil Aviation Authority website: [caa.co.uk](http://caa.co.uk)

This card has information for airport security about diabetes and the equipment you're carrying to stop any confusion.

## Driving

Most people with type 1 diabetes can hold a driving licence and drive. You should tell your insurer and report some things to the DVLA (UK) or DVA (Northern Ireland), including:

- If you use insulin. Your license may be renewed every one to three years.
- If you develop diabetes complications that make it harder for you to drive safely, like eye problems or nerve damage.
- If you have problems with hypos. These include severe hypos where you need someone else's help or hypo unawareness where you don't sense your blood sugar levels dropping.

Find out more about the rules on our website at

[diabetes.org.uk/t1-driving](http://diabetes.org.uk/t1-driving)

You should check your blood sugar levels before driving and stop to recheck your sugar levels every two hours during a long journey. It's recommended that your blood sugar levels are 'above five to drive' and that you have a small carbohydrate snack if your levels are lower than this.

If you feel warning signs of a hypo while driving, follow these steps:

1. Stop the vehicle as soon as possible in a safe place.
2. Switch off the engine, remove keys from the ignition and move from the driver's seat.
3. Take fast-acting carbs, like glucose tablets or sweets, and some form of longer-acting carbs.
4. Don't start driving until 45 minutes after your blood sugar level has returned to normal.

See page 14 for more on treating a hypo.

# COMPLICATIONS

## Avoiding complications

When you have continuously high blood sugar levels, it can damage almost every part of your body over time, including your feet, eyes, nerves, heart and kidneys. These are called the complications of diabetes, and we've got lots of information on our website at [diabetes.org.uk/t1-complications](https://diabetes.org.uk/t1-complications)

This can be frightening to read about, but the good news is that you can take action to prevent or delay many of these problems. You're more likely to experience complications if you have too much fat in your blood and if your blood pressure is too high. There are a lot of different things you can do to lower your risk of complications.



All positive changes, however small, make a difference. Here are the key things that can help reduce the risk of all complications:

## Manage your diabetes

Keeping your HbA1c within the target range set by your healthcare team is the best way to reduce your risk of complications. If your HbA1c is high, it means there's too much sugar in your blood, which can increase your risk of complications.

## Stop smoking

Smoking makes it harder for blood to flow around your body by narrowing the blood vessels that go to your heart and feet. If you smoke, then quitting is essential for reducing your chances of complications. Your GP and diabetes team can help you quit.

## Eat healthily

Making healthier food choices can help you lose weight, bring down your HbA1c, manage your blood pressure and help reduce the fats in your blood. Ask to see a dietitian if you'd like extra help to eat healthily.

## Keep active

Physical activity keeps your heart healthy and also helps to manage your HbA1c, blood pressure and cholesterol. But, if you struggle to get about, there are still ways you can keep active. For tips on moving more, see page 39 or visit our website at

[diabetes.org.uk/t1-exercise](https://diabetes.org.uk/t1-exercise)

## Go to all your appointments

Everyone with type 1 diabetes is entitled to a series of tests each year to look for any problems and check their health. You'll find details on page 22. Making sure you have these tests means you'll know how your diabetes management is going.

## Don't struggle alone

Don't keep quiet if your blood sugar levels are rising or you're having trouble with any part of your diabetes management. Tell your healthcare team who can help you – whether it's an education course, support with your emotional health or an appointment with a dietitian.

## Getting further help

If you are experiencing a complication but are struggling to get an appointment, try asking for an urgent telephone or video review. You should be able to talk to a healthcare professional who can prioritise a face-to-face review if needed.

If you are still worried you are not being taken seriously, call our helpline for more information.



## Your eyes

### What happens?

People with diabetes can develop an eye complication called diabetic retinopathy. Over time, high blood sugar and high blood pressure can damage the blood vessels at the back of the eye. Without treatment, this can lead to sight loss. However, the damage is gradual so you're extremely unlikely to wake up blind one day.

## What you can do

Go to your eye screening appointments when invited. If you notice any changes to your eyesight, contact your healthcare team immediately, don't wait for your next appointment.

During your screening, you'll have medicated eyedrops that make it easier to examine and photograph the back of your eyes. Your sight may be blurry for a few hours afterwards, so it's a good idea to bring someone with you to help you get home. You'll get a letter with your results within six weeks.

Diabetic retinopathy can become advanced before you notice changes to your vision. Attending regular eye exams means you can get treatment as early as possible.

## Treatment

If you have early-stage retinopathy, managing diabetes well can delay or prevent it from progressing. If it's more advanced, your healthcare team can discuss options with you.

Treatments for advanced retinopathy include laser treatment, eye injections, steroids and eye surgery.

Some of these treatments may sound daunting, but they could save your eyesight.

## Your feet

### What happens?

Diabetes increases your risk of developing foot problems. High blood sugars, cholesterol and blood pressure can damage the feeling in your feet and affect your circulation, so you have less blood supply in your feet.

Without a healthy blood supply, any cuts and sores might not heal, and you may get cramps and pain in your legs or feet. Without treatment, you can develop severe foot ulcers and infections that could lead to amputation. However, good, regular foot care can prevent most problems.

### What you can do

Go to your annual diabetes review when you're invited and have your feet checked. Also, get into the habit of checking your shoes and examining your feet every day. Look for changes like cuts, corns,



changes in temperature, or swelling. Report any changes immediately to your healthcare team.

Cut your nails carefully with nail clippers and emery boards. Don't cut down the side of your nails or clean them using the point of scissors.

Avoid footwear that rubs as blisters can become serious if you have diabetes. It's also a good idea to moisturise your feet daily with a urea-based moisturiser to prevent cracked skin that can lead to infection, but don't put any creams in between your toes. If you think you need help to look after your feet, speak to your healthcare team.

Find out more about looking after your feet at [diabetes.org.uk/t1-footcare](https://diabetes.org.uk/t1-footcare)

## Treatment

If you experience a foot problem, take the weight off your foot and contact your healthcare team immediately. If it's serious, you'll probably need a course of antibiotics and your foot will be covered with a dressing. Make sure you know who to call and what to do if you have a new foot problem, or your foot problem gets worse.

## Your kidneys

### What happens?

When diabetes damages the kidneys, it's called diabetic nephropathy or kidney disease. Although it's serious, it develops slowly, over many years. When it's found early, it can be treated successfully.

The kidneys filter your blood and remove extra fluid and waste products through urine. High blood sugar levels and high blood pressure can cause your kidneys to leak and not work as well.

Kidney disease can cause changes in blood pressure and the body's fluid balance, leading to swelling, especially in the feet and ankles. You may also see blood in your urine, feel really tired, be short of breath, or feel sick.



If kidney disease progresses without treatment, your kidneys become less efficient and waste products build up in your blood. You can then become very ill. Eventually, this could result in end-stage kidney disease that can only be treated with dialysis or a kidney transplant.

You may have no symptoms in the early stages of kidney disease so it's essential to have tests every year to check how your kidneys are working.

## What you can do

You should have kidney tests as part of your annual diabetes review. Urine tests check for protein, which may leak from the kidneys if they're damaged. However, urinary tract infections can also be a cause but your healthcare team can rule this out.

You should also have blood tests. The urea and electrolytes test (U&Es) and the estimated glomerular filtration rate test (eGFR) look for signs of kidney damage.

It's also important to keep your blood sugar levels, cholesterol and blood pressure levels within the

target range set for you and take all your medications as prescribed.

## Treatment

The type of treatment you need depends on the stage of kidney disease. Early treatment involves following a healthy, active lifestyle, including limiting the amount of salt you eat, and may mean taking medication to protect your kidneys from more damage.

You may also need to make changes to your diet and avoid certain foods. A registered dietitian can help you.

If you develop end-stage kidney disease and your kidneys stop working, your treatment options include dialysis or a kidney transplant.



## Heart attack and stroke

Call 999 immediately if you have heart attack or stroke symptoms. The signs of a heart attack are a dull ache, pain or tightness in the arm, chest or jaw. The signs of a stroke are weakness in your arms or face or slurred speech.

### What happens?

When you have diabetes, you're more at risk of heart disease. Also called cardiovascular disease or coronary disease, it can lead to heart attacks and strokes.

It happens because high blood sugar, cholesterol and blood pressure can damage your blood vessels over time.

You may not have any symptoms in the early stages with heart problems, making it hard to diagnose.

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

### What you can do

Follow the healthy lifestyle advice on page 22 and go for your annual checks. You'll find out your HbA1c and your blood pressure and cholesterol levels. If they need improving, your healthcare team can help you.

### Treatment

Medications can help reduce cardiovascular disease and the risk of heart attacks and strokes. Often you can take them before you have any problems. However, if you have advanced cardiovascular problems, you may need an operation to help.

## Nerve damage (peripheral neuropathy)

### What happens?

Over time, high blood sugar levels can damage the small blood vessels that supply the nerves in your body. As a result, the nerves don't receive essential nutrients and become damaged.

This can cause problems in many different parts of your body.

Common symptoms can include leg pain, muscle weakness or numbness and tingling in your feet or hands.

There are different types of peripheral neuropathy. It can affect nerves in the feet and hands, nerves that control movement, or nerves that control things like bladder emptying and digestion.

## What you can do

Keeping your blood sugar levels, cholesterol and blood pressure within your target range helps protect the blood vessels that supply your nerves. Speak to your diabetes healthcare team for advice if you think you're developing any signs of neuropathy.

## Treatment

Many treatments can help relieve the symptoms caused by neuropathy. This may include medication for nausea and vomiting, painkillers for sensory neuropathy or treatment to help with erectile dysfunction.

Find out more at [diabetes.org.uk/t1-nerves](https://diabetes.org.uk/t1-nerves)

## Muscular conditions

Muscular conditions can affect anyone, but they are more common in people who have had diabetes a long time, are older or have kidney or eye disease. Keeping your blood sugars as close to target as possible can help prevent some muscular conditions. People with diabetes are at an increased risk of the following:

- Limited joint mobility, or diabetic cheiroarthropathy, which causes the joints to lose normal flexibility. It's most common in the hands, but it can affect wrists, elbows, shoulders, knees, ankles, neck and lower back. Treatment can include physiotherapy and steroid injections.
- Frozen shoulder causes pain, stiffness and limited mobility in the shoulder. Treatment includes painkillers, steroid injections, physiotherapy and, in some cases, surgery.
- Dupuytren's contracture, which causes contraction of the fingers (particularly the ring and little finger) towards the palm, so they cannot be straightened. Treatment normally involves surgery.

- Trigger finger (or stenosing tenosynovitis), which is a painful condition that affects the tendons in the hand. When the finger or thumb is bent towards the palm, the tendon gets stuck, and the finger clicks or locks. It is most common in the ring finger. It is treated with steroid injections, splinting the finger or, in some cases, surgery.
- Carpal tunnel syndrome. Symptoms include pain, numbness or pins and needles in the hand and wrist. The pain is often worse at night. It is treated by splinting the wrist, steroid injections and, in some cases, surgery.

## Sex

Sex can be an essential part of life for some people. If you're unhappy with your sex life, it can affect your wellbeing and closest relationships.

People with diabetes have an increased risk of sexual problems, called sexual dysfunction. High blood sugar can damage blood vessels and nerves, including those that supply your sexual organs. The restricted blood flow and loss of sensation may reduce your sex drive or cause physical problems.



Thrush and urine infections are more common in people with diabetes if their blood sugars are high. These can make sex uncomfortable but are avoidable with good diabetes management.

Other problems linked with diabetes, like heart disease and depression, along with some medications and surgery, can increase the chance of sexual problems. Additionally, feeling tired, depressed, or having low self-esteem can affect your feelings about sex.

Sexual problems can be difficult to talk about, and it's not easy coping with these emotions. But you're not alone. Talking to your healthcare team can be the first step. They should offer support or refer you to a specialist if needed.

## Women

Sexual problems are twice as likely for women with diabetes. They include reduced desire, difficulties with arousal, vaginal dryness, painful sex, and problems with orgasm. Treatments include lubricants to make sex less painful, sex aids and supportive therapy.

## Men

Erectile dysfunction or impotence means being unable to get or keep an erection. It's a common problem caused by nerve damage and damaged blood vessels, which reduces blood flow. It can also be because of medications or how you're feeling.

Although it's difficult to talk about, you should discuss it with your healthcare team as erectile dysfunction can be an early sign of other complications.

You can get treatment with medication like Viagra and Cialis, but they can cause heart problems, so talk to your healthcare team first. You could also think about therapy or counselling to help you manage erectile dysfunction.

# MEDICAL WORDS EXPLAINED

## **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 sugar checks.

## **Blood sugar levels**

(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 (carbs)**

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).

## **Celiac 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 usually worn on the arm.

## **Diabetes complications**

Health problems that people with diabetes may develop due to blood vessel or nerve damage.

## **Diabetic ketoacidosis (DKA) (key-toe-ass-ee-doh-sis)**

A build-up of ketones (poisonous chemicals) that causes the blood to become acidic. If not treated, it can cause unconsciousness – and even death.

## **Diabulimia (die-a-bull-ee-me-a)**

A type of eating disorder where you skip insulin to lose weight.

### **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.

### **HbA1c check**

A check 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 by allowing sugar into your cells.

### **Insulin-to-carb ratio**

The ratio used to calculate how much insulin you need to take for the amount of carbs 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 check 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.



**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.

A hand holding a white flag with the word 'MISSION' written on it. The background is a solid blue color.

# MISSION

**We are Diabetes UK  
and it's our mission  
to tackle diabetes,  
day in and day out,  
until it can do no harm.**

It's why we campaign for better care,  
give support in times of need and fund  
ground-breaking research into new  
treatments and a cure.

Diabetes doesn't stop, so neither do we.

## **This guide is FREE**

As a charity, we rely on the generous donations of people like you to help us produce this vital information on living with diabetes.

To find out more about how you can help us, go to [diabetes.org.uk/get-involved](https://diabetes.org.uk/get-involved)

Or, to make a donation to support our work, go to [diabetes.org.uk/donate](https://diabetes.org.uk/donate) or send a donation via text.

Please text DUK to 70123 to donate £5 to Diabetes UK and help us do even more for people with diabetes.

You will be charged £5, plus one message at your standard network rate. Diabetes UK will receive 100% of your donation. Registered charity number England & Wales 215199 and Scotland SCO39136. If you wish to discuss this mobile payment, call 020 3282 7863.

By texting DUK to 70123, you are agreeing to us contacting you by phone and SMS to tell you more about our work and how you can support it (including financial support). To give £5 without receiving further contact by phone and SMS, text DUK NO to 70123.

You must obtain permission from the bill payer before sending a text message.

# GET IN TOUCH

Call **0345 123 2399**

Email **[helpline@diabetes.org.uk](mailto:helpline@diabetes.org.uk)**

Visit **[diabetes.org.uk](https://diabetes.org.uk)**

Search **Diabetes UK** on Facebook,  
Twitter, YouTube, Instagram and TikTok



We welcome your feedback. If any information in this guide has been particularly helpful or if you would like to suggest any improvements, please send your comments to: **[helpline@diabetes.org.uk](mailto:helpline@diabetes.org.uk)** or write to us at: Diabetes UK Helpline, Wells Lawrence House, 126 Back Church Lane, London E1 1FH

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Our information is correct at the time of publication. It's not a substitute for seeing a healthcare professional, and isn't intended to replace the advice given by your diabetes healthcare team.

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