Breakthrough T1D™
Formerly JDRF

Helping others to understand type 1 diabetes

breakthrought1d.org.uk

A type 1 diabetes diagnosis

When someone close to you is diagnosed with type 1 diabetes (T1D), it can be a shock. Understanding T1D can take some time and there is a lot to learn, but you don't have to learn it all at once. This leaflet will provide you with information about T1D and help guide you on the ways that you can support your partner, friend, family member, or colleague living with T1D.

Jess and Lily

Jess was diagnosed with type 1 diabetes at eight years old. Jess is an aspiring athlete and regularly competes in athletics competitions. Lily is Jess's friend, and they met at athletics training.

Jess:

"I was diagnosed when I was eight. I was young and wasn't sure how to tell people. It felt awkward. Having T1D changed my routine and my classmates noticed so they learnt a bit about the condition. Six years later, and I have no issue telling new people about my T1D. I think it's important that people you see regularly know what it is even if they don't have all the details. Everyone in my class at school knows I have it. My close friends know more, like what to do if I'm having a hypo."

Lily:

"Jess told me about her type 1 when we met. I don't think it makes a difference to our friendship at all. I know what to do if she has a hypo and am there if she needs any help. My advice to a friend of someone with T1D is to remember that it doesn't make them any different. You don't have to keep checking that they're okay."

Getting to know type 1 diabetes

What is T1D and what causes it?

Type 1 diabetes is an autoimmune condition that affects over 400,000 people in the UK. T1D occurs when the immune system mistakenly attacks and destroys the insulin-producing beta cells, which are crucial for converting glucose from food into energy. Like many autoimmune conditions, we're not yet clear why this happens. However, we do know that T1D is not caused by diet or lifestyle, and there's nothing anyone can do to prevent it.

What is insulin and what does it do?

Insulin is a hormone that is made by beta cells in the pancreas. When you eat, insulin is released to enable food to be converted into energy. When you have T1D, your body can no longer produce insulin, so you have to inject or infuse it yourself.

How is T1D managed?

There are two main parts to treating T1D - monitoring blood glucose levels and replacing the insulin that the pancreas doesn't make.

In simple terms, T1D is managed by trying to keep the amount of glucose in the blood within a target range. Individual blood glucose targets are discussed during diabetes clinic appointments, but the target range is usually between 3.9-10.0 mmol/L.

Blood glucose levels can be affected by many factors - such as heat, cold, illness, stress, or physical activity. These changes aren't always predictable or within anyone's control. Managing T1D can be challenging, and it's important to offer reassurance and understanding.

When you have T1D and you eat something that has carbohydrates in it, you need to take insulin (using an injection or insulin pump) to allow the glucose to move from the blood to the body's cells. To do this safely, it's important to know how many carbohydrates are being eaten so the right amount of insulin can be taken. This is called carb counting.

Scan to find out more about T1D

T1D technology

There are a number of different approaches and technology options available to monitor blood glucose levels and help manage T1D. The treatments currently offered include:

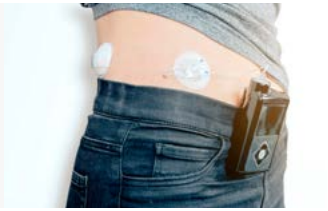
A blood glucose meter:
this is a small medical device that checks the amount of glucose in the blood from a finger prick.

A continuous glucose monitor (CGM):
a CGM uses a sensor attached to the body to send glucose readings to a smart phone, watch or reader. It can alert when blood levels are going out of range.

An insulin injection (pen):
insulin pens use a small needle to inject insulin from a cartridge. Treatment usually involves short-acting insulin before meals and longer-acting insulin once or twice daily. They can also be “connected” which means they send usage data to an app.

An insulin pump:
insulin pumps deliver insulin every few minutes 24/7, with extra doses at mealtimes, mimicking the body’s natural rhythm. The insulin flows through a cannula which sits under the skin.

Hybrid closed loop (HCL):
hybrid closed loop systems combine a CGM, pump, and algorithm to calculate insulin needs and deliver it automatically. Users input carbohydrate amounts before eating.



Getting to know hypos & hypers

Maintaining target blood glucose levels is a tough balancing act, and it is sometimes extremely difficult to avoid swings between hyperglycaemia (high blood glucose) and hypoglycaemia (low blood glucose).

Hypoglycaemia (Hypo)

Hypoglycaemia (hypo) is when glucose levels are too low (usually below 3.9 mmol/L). There may be physical symptoms that you can often see, or you can be told about.

Symptoms may include:

Sweating

Drowsiness

Glazed eyes

Lack of concentration / being confused

Aggression or tearfulness

Hunger

Going pale

Sometimes, the person living with T1D might not realise they're having a hypo, this is known as hypo unawareness. However, you might notice they're acting a bit differently, perhaps more irritable, confused, or just not quite themselves.

Sometimes, there's no clear reason or cause for a hypo. Some things that can cause a hypo are:

Too much insulin on board

Illness

Some types of medication

Not eating enough carbohydrates

Doing unexpected or unplanned physical activity

How to help

Treating a hypo is simple but urgent. The goal is to quickly raise blood glucose levels. Common treatments (approx. 15g of carbohydrate) include:

- 150ml fruit juice or non-diet soft drink
- 5 glucose tablets
- 3 jelly babies or similar sweets

Avoid chocolate. Its fat content slows sugar absorption.

Tip: Talk with the person about their typical hypo signs, preferred treatments and how they would like you to support them in the moment. This helps you respond effectively.

What should you do in an emergency?

Most of the time, people with T1D can treat a hypo on their own by having something sugary to eat or drink. But sometimes, a hypo can come on suddenly. In those moments, they might need a bit of help, or even medical attention, to safely recover.

If the person is unconscious, call 999 and do not give them anything to eat or drink.

You should also seek urgent medical attention if:

- They're vomiting
- They have a high temperature
- They have stomach pains
- Their blood glucose levels remain low after two treatments
- Symptoms deteriorate or they become unresponsive

Scan to find out more about hypos

Hyperglycaemia (Hyper)

Hyperglycaemia (hyper) is when glucose levels are too high (usually above 10 mmol/L). Most of the time, people with T1D can treat a hyper on their own by taking some more insulin.

It is a good idea to talk with your loved one, friend, or colleague about how to recognise and treat a hyper and if they would need some support.

Sometimes, there might not be any symptoms until blood glucose is very high, which is why regular blood glucose monitoring is important. If your friend, colleague or loved one uses a CGM, they may have alarms set that alert when their glucose levels are high.

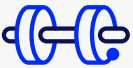
Just like low blood glucose levels (hypos), high blood glucose levels (hypers) are a common part of life for people with T1D. It's not always easy to keep blood glucose within the ideal range all the time, and blood glucose levels can rise due to a range of factors which are not always obvious.

Hypers may happen due to:

Stress

Illness

Menstruation



Some forms of exercise

Some types of medication

Not having enough insulin on board

A hypo being over-treated

What to do?

If blood-glucose levels are high for just a short time, emergency treatment won't be necessary.

If it stays high for more than a couple of hours, action needs to be taken to prevent diabetic ketoacidosis (DKA). This is when a severe lack of insulin upsets the body's normal chemical balance and causes the blood to become acidic.

The NHS describes the main symptoms of DKA as:

Feeling thirsty

Needing the toilet more often

Stomach pain, feeling sick or being sick

Diarrhoea

Breathing more deeply than usual

Fruity smelling breath

Feeling tired, sleepy or confused

Blurred vision

What should I do?

DKA is serious and can be life-threatening if left untreated. If a person is in DKA they should seek medical attention.

If you believe a person is in DKA and they are unable to treat themselves call 999.

Scan to find out more about hypers

T1D information and support

We have a wide range of events to support people living with T1D and their friends and family.

Come together with the T1D community at one of our free information events!

Our events, known as Discovery Days, offer a supportive environment where you can connect with others, learn about the latest research and technology, and hear inspirational talks from people living with T1D. Our in-person events also feature a technology exhibition, where you can see a range of T1D management devices up close.

> *"I came to the event not knowing what to expect. Travelling here made us realise we have a brilliant support system."*
>
> Liz, Cardiff Discovery Day attendee

Scan to check out our resources and upcoming Discovery Days

How you can help

No one should face T1D alone. Join us in taking breakthrough action for the entire T1D community. However you choose to support us, you'll be helping to create a world without T1D.

Get your local community involved: Fundraise at work, school or your community group and raise awareness at the same time

Play the Breakthrough T1D lottery: For just £1 per entry, you could win the weekly top prize of £25,000

Take part in an event: Take on a marathon, sponsored walk, or attend a ball

Do your own fundraising: Find your own perfect way to raise money, from holding a bake sale to a sponsored skydive

Volunteer: Speak about T1D in your local community, cheer at an event or share a skill - whatever you're interested in, we have a role for you

Donate: Give a one-off gift or a regular donation

Scan to find out more about how you can get involved

We are the leading global type 1 diabetes (T1D) research and advocacy charity. Together we're driving breakthroughs towards a world where no one lives with T1D. Until then, we help make everyday life better for the people who face it.

Contact us

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