

# Diabetes and stroke

Stroke Helpline: 0303 3033 100  
or email: [helpline@stroke.org.uk](mailto:helpline@stroke.org.uk)

This guide explores the link between diabetes and stroke, plus information about treatment and ideas for healthy lifestyle changes.

## What is the link between diabetes and stroke?

Diabetes means you have too much sugar in your blood, and this can make you more likely to have a stroke. This is because having too much sugar in your blood damages the blood vessels.

It can make the blood vessels become stiff, and can also cause a build-up of fatty deposits. These changes can lead to a blood clot, which can travel to the brain and cause a stroke.

## What can I do about it?

Diabetes almost doubles your risk of having a stroke. But you can live well with diabetes, and reduce your risk of a stroke if you follow advice and treatment. You can also do more to reduce your risk if you have any other conditions linked to stroke, like high blood pressure or being overweight. By following any treatments you are given and advice on healthy lifestyle changes, you can make a big difference to your future health.

## About diabetes

Your body controls the amount of sugar in your blood with a hormone called insulin. Diabetes develops when your body isn't able to produce insulin, or the insulin it does produce doesn't work properly. There are two main types of diabetes.

- Type 1 diabetes means you can't produce insulin. It often starts in childhood, but adults can get it too. It affects around 10% of people with diabetes.
- Type 2 diabetes means that you don't produce enough insulin, or that your body cells aren't responding to insulin. It is mainly an adult disease, and it affects around 90% of people with diabetes.

## Gestational diabetes

Gestational diabetes is a temporary condition during pregnancy. It usually stops after the baby is born, although it can increase the mother's risk of developing type 2 diabetes in the future.

### Who is at risk of diabetes?

**Type 1:** you're more likely to develop type 1 diabetes if you have close family members with the condition.

**Type 2:** this type of diabetes is strongly linked to being overweight, but you can also get it if you are a normal weight. You're at higher risk of having type 2 if you have a close family member with the condition. It's more likely to start over the age of 40. It's also more common in people from African and Caribbean, South Asian and Chinese ethnic groups.

If you are in a high-risk group for type 2 diabetes, ask your pharmacist or GP about having a health check.

### Symptoms of diabetes

The main symptoms of both type 1 and type 2 diabetes are:

- Being very thirsty.
- Needing to pee more than usual.
- Feeling very tired.
- Unexplained weight loss.
- Often having thrush.
- Cuts or wounds that heal slowly.
- Blurred vision.

Many people do not realise they have diabetes because it tends to develop slowly. Some people are only diagnosed after they have a stroke.

### Diagnosis

Diabetes is diagnosed by a urine test and blood tests. You might have a blood test which checks how much glucose is in your blood. An HbA1c blood test shows your blood glucose levels for the last two to three months. A glucose tolerance test (GTT) checks your blood sugar before and after drinking a sugary drink.

#### Pre-diabetes

Type 2 diabetes can develop over many years, and your blood sugar can rise gradually. If a blood test finds your blood sugar is higher than normal, but not high enough to be diagnosed as diabetes, you might be told you have pre-diabetes. Many people can stop this progressing by making some lifestyle changes such as losing weight and being more active. Ask your pharmacist or GP for advice.

#### Diabetes education

If you are diagnosed with diabetes, you should be offered free diabetes education from the NHS, such as a course or an app. These give you the chance to learn more about your condition and how to manage it. You might be able to meet other people with diabetes. Diabetes UK also offers a free online education course: 'Type 2 diabetes and me'.

Ask your GP to refer you to a diabetes education course.

## Managing your condition

Patients with type 1 are referred to a specialist care team. They need to take insulin for life, and they need to manage their diet and exercise to stay fit and active, and keep their blood sugar stable.

If you are diagnosed with type 2 diabetes, you should have help from a team of health professionals including your GP. You will have advice on your diet, foot checks from a nurse or foot specialist, and eye checks by an optician. You should have your blood sugar level checked at least once a year and your blood pressure should be monitored.

## Managing type 2 through diet and exercise

All diabetics need to stay active and eat a healthy diet to stay fit and well. For type 2 diabetics, it may be possible to achieve a normal blood sugar level by losing weight and being more active. But don't stop taking any medication without speaking to your doctor. Along with treatment, you should get help and advice with making lifestyle changes.

## Medication for type 2

This guide can only give general information. You should always get individual advice about your own health and any treatment you may need from a medical professional such as a GP or pharmacist.

Many people with type 2 need medication to help them control their blood sugar. Metformin is the most commonly prescribed medication. If this doesn't bring your blood sugar level down enough, you will be offered another drug or combination of drugs.

It can take time to get the right medication or the right dose. Talk to your GP or pharmacist if you have any questions or concerns about your treatment.

### Metformin

This is the most common medicine given for type 2. It helps to lower your blood sugar levels by reducing the amount of glucose that your liver produces. It also helps your body to respond better to the insulin that it produces. It is usually given in a low dose to start with and gradually increased, to avoid stomach upsets. It's available in different forms such as modified release tablets.

### Sulfonylureas

This type of drug works by helping your pancreas to produce more insulin. It can lead to low blood sugar (hypoglycaemia) and side effects including nausea and weight gain. There are a number of different sulphonylureas including glibenclamide, glimepiride, gliclazide, tolbutamide and glipizide.

### GLP-1 (glucagon like peptide 1 receptor agonists)

GLP-1 agonists are given by injection and boost insulin production when there are high blood glucose levels, reducing blood glucose without the risk of low blood sugar (hypoglycaemia). They include dulaglutide, exenatide, liraglutide and lixisenatide.

### Pioglitazone

Pioglitazone is a type of thiazolidinedione medicine (TZD), which make your body's cells more sensitive to insulin so more glucose is taken from your blood. It's usually used in combination with other drugs. It can lead to weight gain and other side effects including bone fractures and increased risk of infection so you should be reviewed regularly while taking this drug.

### **SGLT2 inhibitors (sodium–glucose cotransporter 2)**

This is a new type of drug for type 2 diabetes. It works by increasing the amount of glucose excreted through your urine to reduce the amount of glucose in your blood. Examples include dapagliflozin, canagliflozin and empagliflozin.

### **Gliptins (DPP-4 inhibitors)**

These drugs prevent the breakdown of a naturally occurring hormone called GLP-1 which helps the body produce insulin when blood sugar levels are high. Gliptins keep levels of GLP-1 higher in the blood to help reduce blood sugar, but without causing low blood sugar (hypoglycaemia). Examples include alogliptin, linagliptin, sitagliptin, saxagliptin, and vildagliptin.

### **Other medications**

Less commonly used medications include acarbose, which slows down the rate at which your digestive system breaks carbohydrates down into glucose. It's not used as much because of common side effects like diarrhoea.

Meglitinides (nateglinide and repaglinide) are taken just before eating, and stimulate insulin production. They may help people with irregular mealtimes.

### **Insulin injections**

Insulin can be used for type 2 diabetes if other medicines no longer work. There are different types of insulin treatments available.

Your care team will talk to you about the type of insulin that they think is best for you. They will also teach you how to inject yourself and help you with any concerns you may have.

## **Type 2 diabetes diagnosis after a stroke**

For some, diabetes may make very little difference to their day-to-day life, but for others it can have a big impact. You may find that you need to change your diet, take medication and monitor your blood glucose levels frequently. Some people are only diagnosed with diabetes after they have had a stroke. Coping with this as well as the effects of your stroke can be tough.

You may feel a range of different emotions about having diabetes. It can take time to adjust to the demands of managing your condition and it can be easy to feel overwhelmed. But try to take it one step at a time. Speak to your GP about how you are feeling; don't wait for your annual check.

Don't be afraid to ask questions – medical professionals are there to give you the information and support you need.

The organisations we've listed at the end of this guide can also provide help and support.

## How to live well with diabetes and reduce your risk of stroke

### Stopping smoking

Smoking doubles your chance of having a stroke, so it's well worth getting advice on giving up. As soon as you stop smoking, your stroke risk starts to go down.

### Eating a healthy diet

Having a healthy diet is a big part of blood sugar control and it also reduces your risk of stroke. Eat lots of vegetables and fruit, and have homemade food if you can, as it usually has less fat and salt than ready meals and snacks. Cutting salt can help with controlling blood pressure, and eating less fat can help with weight loss. You should get advice from a dietitian or through a diabetes education programme. Ask your GP for advice.

### Moving around more

Being active can lower your blood sugars, so try to move as much as you can. Try walking for half an hour a day. If you can, try to keep moving at home too. Just walking around the room every 20 minutes can lower your stroke risk. If you are taking insulin or have very high blood pressure, it's important that you speak to your GP before starting to be more active.

### Managing your weight

Staying a healthy weight cuts your risk of a stroke. It also lowers your blood sugar levels, so if you need to lose weight ask your GP pharmacist about help available locally.

### Drinking less alcohol

Regularly drinking too much alcohol can raise your risk of a stroke, and the calories in alcohol can also make it harder to lose weight. In the UK, the Government advises that to keep health risks from alcohol low, it's best to have no more than 14 units a week, spread over at least three days. That's the same as about seven medium sized glasses of wine, or about six pints of beer. The limit is the same for men and women.

### Talk to other people

You may find that speaking to other people with diabetes is a good way of getting help and support. Diabetes UK runs local groups and care events that give you the chance to meet with other people and find out how they are coping with a similar situation. Contact Diabetes UK to find out more. See 'Other sources of help and information' later in this guide.

### Where to get help and information

#### From the Stroke Association

##### Helpline

Our Helpline offers information and support for anyone affected by a stroke. This includes friends and carers.

Call us on **0303 3033 100**, from a textphone **18001 0303 3033 100**  
Email [helpline@stroke.org.uk](mailto:helpline@stroke.org.uk).

##### Read our information

Get more information about stroke online at [stroke.org.uk](http://stroke.org.uk), or call the Helpline to ask for printed copies of our guides.

##### My Stroke Guide

The Stroke Association's online tool My Stroke Guide gives you free access to trusted advice, information and support 24/7. My Stroke Guide connects you to our online community, to find out how others manage their recovery.

Log on to [mystrokeguide.com](http://mystrokeguide.com) today.

### Other sources of help and information

#### Diabetes UK

Website: [diabetes.org.uk](http://diabetes.org.uk)

Helpline: **0345 123 2399**

Provides information and support to people living with diabetes, including details of local support groups and how to lead a healthy lifestyle.

#### Diabetes Research and Wellness Foundation

Website: [drwf.org.uk](http://drwf.org.uk)

Tel: **0239 263 7808**

A charity that raises awareness of diabetes and provides support to people living with type 1 and type 2 diabetes.

#### Stop-smoking services in the UK

##### NHS Smokefree (England)

Website: [nhs.uk/smokefree](http://nhs.uk/smokefree)

##### Help me quit (Wales)

Website: [helpmequit.wales](http://helpmequit.wales)

Helpline: **080 8250 2157**

##### Stop smoking (Northern Ireland)

Website: [stopsmokingni.info](http://stopsmokingni.info)

##### Quit Your Way (Scotland)

Website: [nhsinform.scot/smoking](http://nhsinform.scot/smoking)

Helpline: **0800 848 484**

Your notes

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### About our information

We want to provide the best information for people affected by stroke. That's why we ask stroke survivors and their families, as well as medical experts, to help us put our publications together.

#### How did we do?

To tell us what you think of this guide, or to request a list of the sources we used to create it, email us at [feedback@stroke.org.uk](mailto:feedback@stroke.org.uk).

#### Accessible formats

Visit our website if you need this information in audio, large print or braille.

#### Always get individual advice

This guide contains general information about stroke. But if you have a problem, you should get individual advice from a professional such as a GP or pharmacist. Our Helpline can also help you find support. We work very hard to give you the latest facts, but some things change. We don't control the information provided by other organisations or websites.

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Every five minutes, stroke destroys lives. We need your support to help rebuild them. Donate or find out more at [stroke.org.uk](https://stroke.org.uk).

The Stroke Association is registered as a charity in England and Wales (No 211015) and in Scotland (SC037789). Also registered in the Isle of Man (No. 945) and Jersey (NPO 369), and operating as a charity in Northern Ireland.