

# Diabetes

The incidence of diabetes has reached epidemic proportions. About 350 million people worldwide have diabetes, and according to the World Health Organisation cases are likely to double in the next 20 years. Diabetes can have devastating consequences. Knowledge is key to prevention, diagnosis and treatment...



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## What is diabetes?



**D**iabetes is a condition where the amount of glucose (sugar) in the blood is too high because the body cannot use it properly.

It occurs because of problems with the hormone insulin, which regulates blood sugars.

If you have diabetes, either your pancreas is not producing enough insulin, or your body cannot effectively use the insulin it is producing.

This leads to raised blood sugar, hyperglycaemia. Over time, uncontrolled diabetes can cause serious damage to many of the body's systems, especially the nerves and blood vessels.

### What should insulin do?

Insulin allows glucose to enter the body's cells, where it is used as fuel for energy. It is essential for life. You can think of insulin as a kind of key that opens the cells to allow glucose in.

If you have diabetes, you either

don't have a key (no insulin), or the key is not working properly.

When the glucose, which comes from eating carbohydrate, cannot get into the cells it builds up in the blood.

### Type 1 and type 2 diabetes

Type 1 diabetes occurs when the body is unable to produce any insulin. Therefore, the key to unlocking the cells is missing and glucose builds up in the blood.

Type 1 diabetes accounts for around 10% of cases. It can develop at any age, but usually appears before the age of 40 and often starts in childhood.

Type 2 diabetes develops when the body is unable to produce enough insulin, or when the insulin that is produced does not work properly – the key is not working.

Type 2 diabetes usually develops in people over the age of 40, but is becoming increasingly common in young adults and even children.



# Warning signs...

The common symptoms of diabetes include –

- Need to urinate often, especially at night
- Increased thirst
- Tiredness
- Weight loss
- Genital itching or thrush
- Slow healing cuts or wounds
- Blurred vision

Having these symptoms doesn't mean you have diabetes but it is important to see your doctor to check.

## Testing for diabetes

It is simple to test for diabetes. A blood test is all that is required. We offer fasting glucose blood tests for diabetes at our clinics.

Undiagnosed diabetes can lead to serious health complications, so regular checks are advisable.

## High risk groups

Anyone can develop diabetes, and research into why it occurs is still ongoing. However, a number of risk factors have been identified.

- Family history of diabetes
- Being overweight
- Eating an unhealthy diet
- Physical inactivity
- Increasing age
- High blood pressure
- Ethnicity – diabetes is more common in people of South Asian, African or African-Caribbean descent
- Impaired glucose tolerance
- History of gestational diabetes
- Poor nutrition during pregnancy

# Hypos and hyperts

Managing diabetes is all about balance; balancing any medication, diet and exercise. When this balance is not right, you are likely to experience blood sugars that are either too low or too high.

## Hypoglycaemia (hypo)

Hypoglycaemia means blood glucose levels have fallen too low – less than 4 mmol/l

### Symptoms

Shaking, sweating, hunger, tiredness, blurred vision, headaches, feeling tearful or moody, poor concentration.

### Treating a hypo

If conscious, treat immediately with 15–20g of fast-acting carbohydrate, eg a sugary drink, glucose tablets, sweets, fruit juice or glucose gel.

Note: Don't treat with foods high in fat because fat delays glucose absorption and won't treat the hypo quickly enough.

## Hyperglycaemia (hyper)

Hypers happen when blood glucose levels are too high – usually above 7mmol/l before a meal and above 8.5mmol/l two hours after a meal.

### Symptoms

Passing urine more - frequently, especially at night, increased thirst, headaches, tiredness and lethargy.

### Treating a hyper

If hyperts occur often, contact your doctor for a review of lifestyle and/or medication. If blood glucose level is high for a short time treatment isn't necessary. If it stays high drink plenty of sugar-free fluids. If you are on insulin you may need extra.



## A healthy lifestyle



## as well as manage,



## helps to prevent,



## type 2 diabetes





# The diabetes and weight link

**T**ype 2 diabetes has been strongly linked to diet and lifestyle.

Maintaining a healthy body weight and taking regular exercise are seen as key to preventing type 2 diabetes.

But, what is the link between weight and diabetes and is there anything you can do once you have developed the condition?

Studies have suggested that the stored fat in an overweight person may be contributing to the disease. And, if this is true, losing the fat stores could reverse diabetes.

Using MRI scans, researchers have found that as people with diabetes have dieted and lost fat stored in the pancreas (where insulin is made), insulin production has restarted. So, it seems that being overweight may contribute to diabetes because fat stored in the pancreas blocks insulin production.

Researchers at Newcastle University claim to have cured

diabetes in a group of obese people using diet alone.

A group of 14 volunteers with type 2 diabetes and a BMI in the obese range of over 30 were put on a strict diet of just 600 calories a day for eight weeks.

Eleven lasted the course, losing an average of 2st 5lb, with BMI down to 29, overweight rather than obese.

After a week their blood levels had returned to normal, and by the end of eight weeks their diabetes had disappeared.

Is this the answer for everyone with diabetes? It does seem to offer hope, although such extreme dieting requires a huge amount of willpower and cannot be achieved by everyone. It should also not be attempted without medical supervision.

And, the weight must be kept off otherwise the diabetes will simply return.

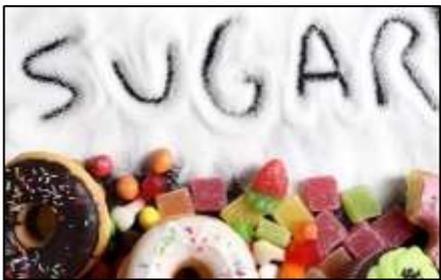
Of the 11 volunteers completing

the study, most regained a bit of weight after they returned to a normal diet. After three months, seven of them remained diabetes free, while the other four were just into the diabetes category.

There is no reason why slower, more controlled weight loss would not produce the same results – and in a much healthier and more sustainable way.

“As long as the dieting is sensible and medical advice is sought, then losing weight if you are overweight or obese is always a good thing,” says Medicare’s senior GP Dr Hussain. “And it can have a real impact on diabetes. I have had personal experience of patients who have lost significant weight and reversed their diabetes.”

Even if it does not lead to a complete reversal of the condition, a healthy diet and weight loss can only improve health. ■



# How to eat well with diabetes

## Eat regular meals

To help keep your blood sugars even, eat at regular intervals throughout the day. And always have a healthy breakfast. Porridge oats and eggs are a good start to the day. Avoid cereals that are high in sugar.

## Keep an eye on portion sizes

Don't skip meals if trying to lose weight, but watch portion sizes. Use a smaller plate and make sure it is not piled up high. Drink a glass of water to fill up and resist a second helping.

## Careful with the carbs

You do need to include carbs in your diet, but choose healthier carbs – vegetables, fruits, wholegrain and pulses. And, remember all carbs affect blood glucose levels so don't overdo them.

## Watch the fat

Everyone needs some fat as part of a healthy diet, but try to stick to healthier unsaturated fats. Cut back on saturated fats; found in butter, cheese, red and processed meats, cakes and pastries.

**Eating a healthy diet is essential for people with diabetes**

## Get your five a day

Aim for at least five portions of fruit and veg a day to get your vitamins, minerals and fibre.

## Cut back on salt

Too much salt is associated with high blood pressure, which increases the risk of diabetes complications.

Adults should have no more than 1 teaspoon (6g) of salt per day,

children should have even less. Most of our salt comes from processed foods so beware of these.

## Dish up the fish

Fish is a good source of protein, and oily fish is particularly good, as it's rich in omega-3, which protects against heart disease. Eat two portions of oily fish, such as salmon, mackerel or sardines every week.

## Eat more beans

Beans, lentils and pulses don't have a big impact on blood glucose and may help control cholesterol.

## Hydrate

We all need to stay hydrated by drinking 8–10 glasses of fluid a day.

## Glycaemic Index

The glycaemic index (GI) tells us whether a food raises blood glucose levels quickly, moderately or slowly.

Different carbohydrates are digested and absorbed at different rates, and GI is a ranking of how quickly each carbohydrate-based food and drink makes blood glucose levels rise after eating them.

The GI index runs from 0–100, with glucose having a GI of 100. Slowly absorbed carbohydrates have a low GI rating (55 or below), and include most fruits and vegetables, milk, some wholegrain cereals and bread, pulses and basmati rice.

Research has shown that eating low GI foods helps maintain a healthy blood sugar level in people with type 2 diabetes.

# Monitoring diabetes

Self-monitoring of blood glucose is an important part of diabetes management. Monitoring will help you keep blood glucose levels stable, provide information for you and your healthcare team and help you to avoid complications associated with diabetes.

Many people with diabetes will test their blood glucose levels themselves using a home blood glucose testing kit. This involves pricking a finger and putting a drop of blood on a testing strip.

## Blood glucose targets

People with diabetes should try to keep their blood glucose levels as near as possible to the normal range of those who do not have diabetes. These are -

- 3.5–5.5mmol/l before meals
- less than 8mmol/l, two hours after meals

But everyone is different and target levels should be decided with the help of your healthcare team.

The target blood glucose ranges below are indicated as a guide.

## Children with Type 1 diabetes (NICE 2015)

- on waking and before meals: 4–7mmol/l

- after meals: 5–9mmol/l.

## Adults with Type 1 diabetes (NICE 2015)

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

## Type 2 diabetes

(Diabetes UK Council of Healthcare Professionals 2015)

- before meals: 4–7mmol/l
- two hours after meals: less than 8.5mmol/l.

## Test regularly



## Consult your doctors



## Keep on target



# Diabetic complications

If not well managed, diabetes can lead to serious long-term health complications.

## Feet

People with diabetes are at much greater risk of developing problems with their feet due to the effect of raised blood sugars on skin, circulation and nerve supply. If foot problems are left untreated, foot ulcers and infections can develop. At worst, this may lead to amputations. However, most foot problems are preventable with good foot care. All people with diabetes should see a foot specialist at least once a year.

## Cardiovascular disease

People with diabetes have a higher chance of developing cardiovascular disease (CVD). CVD is the greatest cause of death for

people with diabetes. CVD includes heart disease, stroke and all other diseases of the heart and circulation. Adopting a healthy lifestyle will reduce the risks of developing CVD and everyone with diabetes should seek advice from their healthcare team.

## Retinopathy

Retinopathy is damage to the retina (the back of the eye) and is a complication that can affect people with diabetes. Retinopathy can lead to blindness. Regular specialist eye tests are advised.

## Neuropathy

Neuropathy, nerve damage, is one of the long-term complications of diabetes. Nerves carry messages from the brain to every part of the body. These messages are essential for everything from senses and

movement to heart beat and breathing. Therefore, nerve damage can cause problems in various parts of the body.

Diabetes can cause neuropathy because high blood glucose levels damage the small blood vessels which supply the nerves. This prevents essential nutrients reaching the nerves and nerve fibres are damaged or destroyed.

## Nephropathy

People with diabetes have a higher risk of nephropathy, or kidney disease. Kidney disease in people with diabetes develops slowly, and is most common in those who have had diabetes for more than 20 years. One in three people with diabetes might develop kidney disease. Maintaining level blood sugar levels lessens the risk.

# Yearly diabetic health check

Everyone with diabetes should have a full diabetes health check at least once a year to ensure their diabetes is being properly managed and to help avoid complications.

The annual check should include:

- **An HbA1c test** to measure overall blood glucose control
- **Blood pressure check** and advice to help you achieve blood pressure targets

- **Blood fats**, including cholesterol, will be checked and advice given

- **Eye screening** for retinopathy using special digital cameras

- **Foot check**. Skin, circulation and nerve supply of your feet should be checked by a foot specialist

- **Kidney function test**. This should include a urine test for

protein (which may indicate infection) and a blood test for kidney function

- **Weight** should be checked and waist measured. If you need to lose weight advice should be given.

- You should also be given the opportunity to have any questions answered and you should be given help to plan your ongoing care for the next year.



## How Medcare can help

We recognise people with diabetes have special healthcare needs and we are here to support you.

### Diagnosis

We offer fasting blood tests to check for diabetes.

### Diabetes club

We run a free diabetes club with a specialist visiting diabetes nurse. The club is a great forum for information, support and advice.

### Yearly health check

We can provide the annual review and checks all diabetes patients should undergo.

### Foot care

Our chiropodist can help with all your diabetic foot care needs.

### Nutrition advice

Our doctor and nurse can advise you on controlling blood sugars with diet.

### Diabetes membership plan

To make it easy and more cost effective for our diabetes patients, we have a special diabetes membership plan. This includes help and advice on monitoring diabetes, making lifestyle changes and controlling medication. All aspects of diabetes health care, including medical issues, foot care, and nutrition are covered.

**Medcare**  
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A large banner image featuring the Medcare logo on the left, which consists of a blue heartbeat line above the word 'Medcare'. To the right of the logo, a healthcare professional in a white coat is shaking hands with a patient. The background is a blurred clinical setting. At the bottom of the banner, there is a dark grey bar with white text containing the phone number, email address, and website URL.