

# Diabetes explained

## Diabetes and Endocrinology Patient Information Leaflet

### What is diabetes?

Diabetes is a condition where the amount of sugar (called glucose) in your blood becomes too high because the body is unable to use it properly. This is because the body's method of converting glucose into energy is not working as it should.

There are two main types of diabetes:

**Type 1 diabetes** develops when there is a severe lack of insulin in the body. This is because most or all of the cells in the pancreas that produce it have been destroyed. This type of diabetes usually appears in people under the age of 40, often in childhood. It is treated by insulin injections and diet.

**Type 2 diabetes** is when the pancreas can still produce some insulin but not enough for proper control of blood glucose (sugar) levels or when the insulin produced does not work properly (insulin resistance). It usually occurs later in adult life and is treated by diet, tablets or sometimes by insulin.

## How is my body meant to get its energy?

Normally, the amount of glucose in our blood is carefully controlled by a hormone called insulin. Insulin is made by a gland called the pancreas that lies just behind the stomach. It helps the glucose to enter the cells where it is used as fuel by the body to create energy.

We obtain glucose from the food that we eat, either from sweet foods, fruit or from the digestion of starchy foods such as bread or potatoes. Glucose can also be made by the liver.

After a meal, the blood glucose level rises and insulin is released into the blood. When the blood glucose level falls (for example during exercise), the level of insulin produced also falls. Insulin, therefore, plays a vital role in regulating the level of blood glucose and in particular, in stopping blood glucose levels from rising too high.

## What are the symptoms of diabetes?

You may experience:

- thirst and a dry mouth
- the need to pass large amounts of urine (especially during the night)
- tiredness
- weight loss
- itchy genitals
- blurred vision

Type 2 diabetes develops slowly and the symptoms are usually less severe. Some people may not notice any symptoms at all but their diabetes is picked up in a routine medical checkup.

## Who gets diabetes?

Diabetes is a common health condition. About 3.2 million people in the UK are known to have diabetes and an estimated one in 70 people have it unknowingly.

Over three quarters of people with diabetes have Type 2 diabetes. Although diabetes can occur at any age, it is rare in children under the age of two.

# What causes diabetes?

## Type 1 diabetes

As mentioned earlier, Type 1 diabetes develops when the insulin producing cells in the pancreas have been destroyed. Nobody knows for sure why these cells have been damaged. The most likely cause is an abnormal reaction of the body against the cells. This may be triggered by a viral or other infection. It generally affects younger people and both sexes are equally affected.

## Type 2 diabetes

Type 2 diabetes usually appears in middle aged or elderly people but it can sometimes appear in younger people. In this type of diabetes the body no longer responds normally to its own insulin (insulin resistance) and/or it does not produce enough insulin for its needs.

People who are overweight are more likely to develop it. It tends to run in families and is more common in sections of the Asian community. Some people wrongly describe this as mild diabetes but all diabetes must be taken seriously and treated properly to avoid the complications that can arise from it.

There are other causes of diabetes but they are all very rare. These include certain diseases of the pancreas. Sometimes an accident or an illness may reveal diabetes if it has not already been diagnosed although these are not the cause of it. Stress does not cause diabetes although it may make the symptoms worse. You cannot catch diabetes from somebody, nor can you give it to them.

## How is diabetes treated?

Although diabetes cannot yet be 'cured' it can be treated very successfully. Before discussing the different kinds of treatment, it is important to know something about blood glucose levels.

When sugar and starchy foods have been digested, they turn into glucose. When somebody has diabetes, the glucose in their body is not turned into energy because there is not enough insulin or the insulin produced by the body is not being used properly. This means that glucose cannot get into the cells that need it.

As the body knows it needs more glucose in these cells, the liver makes more glucose than usual and this process can cause some diabetes sufferers to lose weight. However, this too cannot be turned into energy and just remains in the bloodstream. The lack of glucose in cells is why people with untreated diabetes often feel tired. The unused glucose spills over into the urine and this causes people with untreated diabetes to pass urine a lot.

Treatment of diabetes is important because you will feel so much better if you keep your blood glucose levels as near normal as possible. This means that you should aim for a level of 4-8mmol/l before meals, and no more than 10mmol/l after meals. Your diabetes doctor or nurse will advise you on what is best for you. They can also advise you on the many gadgets available that can help you to monitor your blood glucose levels.

### **Type 1 diabetes treatment**

People with Type 1 diabetes need to have injections of insulin for the rest of their lives. They also need to eat a healthy diet that contains the right balance of foods. Insulin cannot be taken by mouth like a medicine because it is destroyed by the digestive juices in the stomach. Up to four injections each day may be needed.

If you or someone close to you needs to have insulin injections, your diabetes doctor or nurse will talk to you. They will show you how to inject and give you all the support and help you need.

You will be shown how to do a simple blood or urine test at home to measure your glucose levels. You will then be able to adjust your insulin and diet according to your daily routine. You will be given advice on what to do if your glucose level is too low.

If you have Type 1 diabetes, injections of insulin are necessary to keep you alive. You will need to have them every day.

### **Type 2 diabetes treatment**

People with Type 2 diabetes need to eat a healthy diet that contains the right balance of foods. If your diabetes doctor or nurse finds that this alone is not enough to keep your blood glucose levels normal, you may also need to take tablets.

There are three types of diabetes tablets. One type helps your pancreas to produce more insulin. The second type helps your body to make use of the insulin that your pancreas does produce. The third type of tablet slows down the speed at which the body absorbs glucose from the intestine.

Your diabetes doctor or nurse will tell you all about the tablets, when to take them and how to monitor your blood urine glucose levels.

Sometimes people with Type 2 diabetes also have insulin injections depending on how the condition affects them.

## **How will diabetes affect my way of life?**

As you now realise, you will need to make some changes to your life if you have diabetes. You may need to change your eating habits. If you smoke, you should certainly give it up, as it is particularly dangerous if you have diabetes. Eating a healthy diet and regular exercise is also good for you.

In the last 10 to 20 years, the care for people with diabetes has improved dramatically. One of the most important developments has been improved methods of screening. These help your doctor to pick up any problems early so that they can be treated. This is why having regular medical checkups is so important.

Hundreds of thousands of people in the UK have diabetes and the vast majority live a normal, healthy life. Most people enjoy work and travel and live an active life just as they did before. With good care of your diabetes, you can be one of them.

## **Can I find out more?**

**Diabetes UK**

**Tel:** 0345 123 2399

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

If you have any questions, or if there is anything you do not understand about this leaflet, please contact:

Diabetes Team on 01384 244399 (9am to 5pm, Monday to Friday)

**This leaflet can be made available in large print, audio version and in other languages, please call 0800 0730510**

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