



## Diabetes

### Diabetes

Diabetes develops when the body can't use glucose properly. As a result, people with diabetes can have abnormally high levels of glucose in their blood, if the condition isn't controlled.

### Types of diabetes

There are two types of diabetes, Type 1 and Type 2. Type 1 is more likely to be diagnosed in younger people, but it can develop at any age. In the UK there are about 18,000 people under the age of 18 with Type 1 diabetes. It develops when cells in the pancreas that produce insulin are destroyed. Insulin is a hormone that regulates the levels of glucose in the blood. This type of diabetes is treated with insulin injections.

Type 2 diabetes is usually diagnosed in older people - the older you are the greater the risk. However, it is increasingly being found in younger people and sometimes in children. This type of diabetes can be treated with diet and exercise alone, although people with Type 2 diabetes often need medication and they sometimes need insulin too.

### What is diabetes?

The pancreas (a gland behind the stomach) produces a hormone called insulin to control the amount of glucose in the blood. When food is digested and enters your bloodstream, insulin moves glucose out of the blood and into cells, where it's broken down to produce energy. However, if you have diabetes, your body is unable to break down glucose into energy. This is because there's either not enough insulin to move the glucose, or the insulin produced doesn't work properly.

### Insulin resistance

Insulin resistance occurs when insulin levels are sufficiently high over a prolonged period of time causing the body's own sensitivity to the hormone to be reduced. Once the body starts to get resistant to insulin, it can be a difficult process to reverse because of the knock on effect of insulin resistance. Higher circulating levels of insulin in the blood stream and weight gain help to further advance insulin resistance. Insulin resistance is closely linked with inflammation, which is the body's attempt to heal itself. It is thought that in pre-diabetes and type 2 diabetes the body's immune system releases chemicals called cytokines, which are thought to interrupt the action of insulin. This therefore lowers insulin sensitivity and increases insulin resistance. Type 2 diabetes that is brought on by obesity is a result of chronic inflammation.

### Effects on health

Diabetes is the third most common long-term disease in the UK, after heart disease and cancer. People with diabetes can live a normal healthy life. However, poorly controlled diabetes can lead to complications such as heart disease, kidney disease, blindness and nerve problems leading to amputation. For both types of diabetes, it's extremely important to control blood sugar levels and blood pressure, to prevent any long-term complications.

### Who develops Diabetes?

It's poorly understood why people develop Type 1 diabetes, but you are more likely to develop Type 2 if you:

- Have a relative with diabetes (such as a parent, brother or sister)
- Are overweight
- Are over 40
- Are of Asian or African-Caribbean origin
- Have had diabetes during pregnancy

## Pre-diabetes

Many more people have blood sugar levels above the normal range, but not high enough to be diagnosed as having diabetes. This is sometimes known as pre-diabetes. If your blood sugar level is above the normal range, your risk of developing full-blown diabetes is increased, but it doesn't mean you will get it. It's very important for diabetes to be diagnosed as early as possible because it will get progressively worse if left untreated.

## Can diabetes be prevented?

There is no guaranteed way of preventing diabetes. However, eating a healthy balanced diet, taking regular physical exercise, and losing weight if you are overweight can delay the onset of the condition.

## Blood sugar balancing

Blood sugar imbalance is a condition in which your body does not handle glucose effectively regardless of any insulin issues. Throughout the day blood glucose levels may fluctuate outside of the bodies desired blood glucose range. Swinging from being very high after a meal, sugar, stimulant or stress, to being very low, say if you skipped breakfast.

## What should people with diabetes do and eat?

- It is important to firstly stabilize blood sugar levels – the following points can help you address this.
- People with diabetes should also try to maintain a healthy weight and exercise:
- If you are prone to low blood sugar (hypoglycaemia), you might sometimes need to increase your blood sugar level quickly. **The following is a recommendation from the NHS:**
- If you suffer from a hypoglycaemic episode, you should have some fast-acting carbohydrate, such as a banana or some glucose tablets, and follow this up with a starchy snack, such as a sandwich.
- Your GP or diabetes nurse can advise you on how to be prepared for hypoglycaemia, and manage it.

## Foods to Avoid:

**Carbohydrates:** Avoid confectionary and all sources of simple sugars, particularly "hidden" sugars in processed food. Reduce intake of fruit high in sugar (bananas, grapes) and all dried fruit. Avoid refined carbohydrates such as white rice, white bread and white pasta, especially if eaten alone or without protein.

**Fats:** Avoid all processed foods high in fats and reduce saturated fat.

**Proteins:** Avoid sources of protein attached to or combined with high levels of fat (red meat, pork, bacon, processed meat, sausages, etc.)

**Fluids:** Avoid drinks containing sugar such as squashes, undiluted fruit juices, carbonated soft drinks. Reduce stimulating drinks such as coffee, tea, caffeinated drinks (red bull) and colas etc.

## Foods to Increase:

**Carbohydrates:** Increase complex carbohydrates such as whole grains (brown rice, quinoa, buckwheat, rye, oats). Increase intake of starchy vegetables, lentils and pulses. Increase intake of fruits that are not too high in sugar.

**Fats:** Increase the intake of unsaturated fats: olive oil is particularly effective. Increase omega-3 fats from oily fish, linseeds, and hempseeds. Increase nuts and seeds to a sensible level – **note:** they are still high in calories.

**Protein:** Increase protein from lean sources, such as lean chicken and turkey, white fish, oily fish (tuna, mackerel, herrings, pilchards, sardines, salmon), eggs, yoghurt, cottage cheese, nuts and seeds. Include high quality protein with every meal and snack.

**Fibre:** Increase the intake of dietary fibre (both soluble and insoluble) from whole grains, lentils, pulses, fruit and vegetables: fibre has been shown to help balance blood sugar.

**Fluids:** Drink at least one litre of clear water daily — taken away from meals and sipped slowly to avoid stress on the kidneys. For variety drink diluted fruit juices, organic vegetables juices and herbal teas.

**Please Note:** This handout should only be used as a guide to help inform you as to the foods that **may** help in diabetes. It **should not** be used as definitive guide to diabetes. If you think you may have diabetes then please contact your medical doctor.