

Statistics

About 3 in every 100 people will develop Diabetes

There are presently about 1.4 million diagnosed Diabetics in the UK

A further 1 million are suspected, but as yet undiagnosed

Worldwide the figures are more like 177 million

Diabetes affects both sexes equally

Diabetes UK invest over £5 million in research every year to help find a cure

It is believed that Diabetes accounts for about 9% of the NHS budget (Probably over £5 billion a year)

There are about 350,000 Insulin Dependent Diabetics in the UK

www.diabeticinfo.co.uk

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Introduction

Diabetes is a serious condition and at present there is no cure. Research is progressing well and scientists are hopeful that islet cell transplants could be the answer.

The condition can however be treated successfully and many Diabetics have lived for well over fifty years with the condition. Millions of people in the UK have diabetes and most, with proper treatment, live normal, active lives.

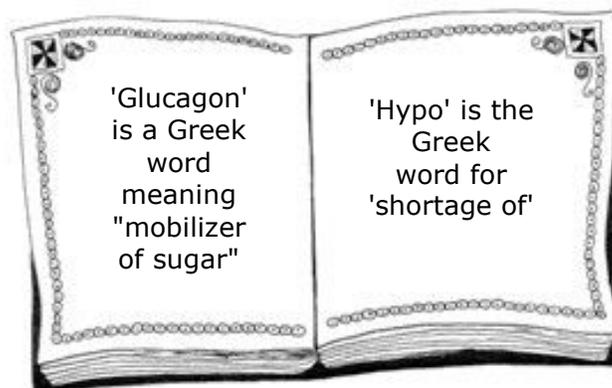
Medical advances in recent years have meant that the prospects for someone with Diabetes are far better than ever before. Continuing research constantly improves the lives of Diabetics, as scientists the world over, work towards finding a cure.

The name

Aretaeos Cappadocian, coined the name 'diabetes mellitus' in the second to third century AD. Diabetes is from a Greek word that means to siphon. This refers to the excessive urination seen in undiagnosed diabetics.

Mellitus - comes from a Latin word that means sweet like honey - and like the urine of diabetics which contains extra sugar (glucose).

Here are a few other words:



Quick History

1500 BC
Ebers Papyrus first describes the symptoms of diabetes

400 BC
Susruta records the symptoms and classifies types of diabetes

6 AD
Charaka refines the work of Susruta

10 AD
Celsus develops a clinical description of diabetes

20 AD
Aretaeus coins the term diabetes

1869
Paul Langerhans identifies clusters of cells (islets of Langerhans) in the pancreas

1889
Von Mering and Minkowski observe that diabetes develops when an animal's pancreas is removed

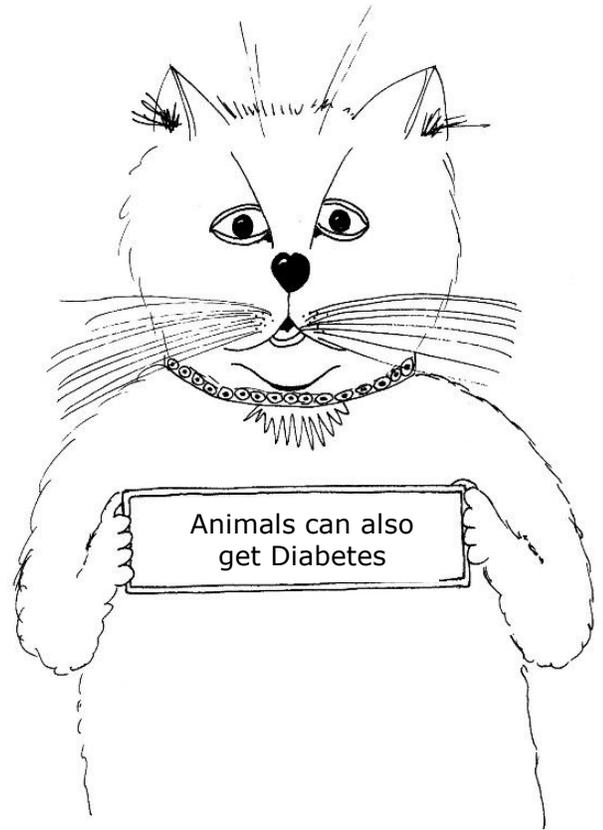
1921
Banting & Best isolate secretion from animal pancreas (insulin) and inject into diabetic dog, to find a fall in blood sugar!

History

Diabetes is one of the oldest known human conditions. Descriptions of the symptoms can be traced as far back as ancient Egyptian, Indian, Roman, Japanese and Chinese writings. But it was not until the 19th Century that a proper understanding of the condition was developed.

The first major breakthrough came in 1889 when two German scientists, Von Mering and Minkowski discovered that the removal of the pancreas gave rise to Diabetes. Later in 1921 two Canadian scientists, Frederick Banting and Charles Best, made their famous discovery of insulin, from small groups of cells in the pancreas called islets of Langerhans.

In 1922, insulin became available as a treatment for diabetes and was seen as a medical miracle, transforming the lives of millions who would have otherwise died after a painful wasting disease. In 1952 it was discovered that one form of diabetes could be treated with tablets to lower blood glucose levels and this brought about the distinction between Type 1 and Type 2 Diabetes.



What is Diabetes?

Diabetes is a condition in which the amount of glucose (sugar) in the blood is too high because the body is unable to use it properly and cannot therefore convert the glucose into energy. Normally a hormone called insulin carefully controls the amount of glucose in our blood. A gland called the pancreas, which lies just behind the stomach, makes insulin. It helps glucose enter the cells where it is used as fuel for the body.

Glucose is obtained from the food and drinks that we eat, either from sweet foods or from the digestion of starchy foods such as bread or potatoes. Insulin makes cells extract glucose from the blood and prevents them from breaking down proteins and fats. It is the only hormone that can reduce blood glucose and it does this by increasing the amount of stored glucose in the liver in the form of glycogen, preventing the liver from releasing too much glucose and by encouraging cells elsewhere in the body to take up the glucose.

If the insulin supply fails the whole system goes out of balance and after a meal, there is nothing to stop blood glucose levels from rising. In a normal functioning body, when the blood glucose level falls - for example, during physical activity - the level of insulin also falls. Insulin, therefore, plays a vital role in regulating the level of blood glucose and in particular, in stopping the blood glucose level from rising too high. In the undiagnosed diabetic, as the concentration of glucose rises above a certain level, it starts to spill out of the bloodstream and into the urine, causing excessive urination and thirst.

When insulin fails the by-products of the breakdown of fat and muscle build up in the blood and can lead to the production of ketones. If this is not prevented, the person will eventually develop ketoacidosis and potentially go into a coma. If ketones are present, the diabetic patient should seek urgent medical advice.

Types of Diabetes

Whilst some Diabetics can control their condition with diet alone, there are two main types of Diabetes as mentioned already.

These are:

Type 1 Diabetes - also known as Insulin Dependent Diabetes

Type 2 Diabetes - also known as Non-Insulin Dependent Diabetes

Type 1 Diabetes develops where there is a severe lack of insulin in the body because most or all of the insulin producing cells in the pancreas have been destroyed. This type of Diabetes usually appears in people under the age of forty, often in childhood. It is treated with insulin injections and also by following a healthy low-fat, low-sugar diet with a sensible exercise regime.

Type 2 Diabetes develops when the body can still produce some insulin, but not enough for its needs, or when the insulin that the body produces does not work properly. This type of Diabetes usually appears in people over the age of forty. It is treated either by diet alone, diet and tablets, or a combination of diet and insulin injections.

All Diabetic conditions are equally serious, if not controlled - there is no such thing as 'mild' Diabetes.

The main symptoms of Diabetes are:

Increased thirst
Extreme tiredness
Weight loss

Going to the loo all the time, especially at night
Genital itching or regular episodes of thrush
Blurred vision

Type 2 Diabetes develops slowly and the symptoms are usually less severe. Some people may not notice the symptoms at all and their Diabetes is only picked up in a routine medical check up. Symptoms may be put down to 'getting old' or being 'overworked'.

Type 1 Diabetes develops much more quickly, usually over a few weeks and symptoms are very obvious.

In both types the symptoms are quickly relieved once treatment has commenced. Early treatment will reduce the chances of developing serious health problems, such as heart disease, amputation and blindness.

What causes it?

Nobody knows for sure why the cells in the pancreas have been damaged or destroyed. The most likely cause is an abnormal reaction of the body to the cells, triggered by a viral or other infection.

People who are overweight are particularly likely to develop Type 2 Diabetes and there is also a tendency for Diabetes to run in families. The condition is also more common in Asian and African-Caribbean communities.

The importance of Glucose and Insulin

When little or no insulin is present in the body, the blood glucose cannot be used properly and so the level of glucose in the bloodstream rises. Insulin is a chemical (or hormone) made in the pancreas and it is also a protein. Because insulin is a protein, insulin dependent diabetics have to inject it, rather than taking it orally, because otherwise the digestive juices would break it down. Insulin is made in beta cells in tiny clusters called islets of Langerhans (after the man who first observed them). Inhaled insulin's are being tested and may prove an alternative to injections.

Cells are microscopic building blocks that make up the whole body. Insulin opens passages in the body's cells so that glucose can enter, where it becomes fuel to make energy, enabling your muscles, your heart and your brain to work. Glucose is also stored in the liver (where it is known as glycogen) and kept until the body requires it. If the beta cells stop making insulin, glucose cannot enter the body's cells. In the absence of insulin, starchy and sugary foods are still being digested in the gut and being absorbed after every meal, so the glucose builds up uncontrollably in the bloodstream. To make matters worse, without insulin, the liver also breaks down its glycogen stores and releases yet more glucose into the bloodstream. Eventually the bloodstream has to release the excess glucose, which overflows into the bladder, causing the passing of lots of urine. The syrupy urine draws water out of the body causing excessive thirst. Body fat is broken down into fatty acids and they form substances called ketones. Where there is a severe lack of insulin, a lot of ketones are made and the blood becomes acidic. See Ketoacidosis.

Without insulin the body starts to waste away by eating its own fat, quickly causing weight loss.

**177 million
diabetics
Worldwide
and
counting!**

You are not alone