

# Diet reverses type 2 diabetes

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(Medical Xpress) -- A Newcastle University team has discovered that Type 2 diabetes can be reversed by an extreme low calorie diet alone. Affecting two and half million people in the UK – and on the increase – Type 2 diabetes is a long-term condition caused by too much glucose, a type of sugar, in the blood.

In an early stage clinical trial of 11 people, funded by [Diabetes](#) UK, all reversed their diabetes by drastically cutting their food intake to just 600 calories a day for two months. And three months later, seven remained free of diabetes.

Professor Roy Taylor of Newcastle University who led the study and is also Director of the Newcastle Magnetic Resonance Centre said: “To have people free of diabetes after years with the condition is remarkable - and all because of an eight week [diet](#).”

“This is a radical change in understanding [Type 2 diabetes](#). It will change how we can explain it to people newly diagnosed with the condition. While it has long been believed that someone with Type 2 diabetes will always have the disease, and that it will steadily get worse, we have shown that we can reverse the condition.”

Research revealed today at the American Diabetes Association conference and published in *Diabetologia* transforms thinking on diabetes. It demonstrates that people who go on a very [low calorie diet](#) can remove fat which is clogging up the pancreas allowing normal insulin secretion to be restored.

Traditionally, it has been thought that as a progressive condition, Type 2 diabetes can be controlled by diet initially then tablets, but may eventually require insulin injections.

Type 2 diabetes, which was once known as adult-onset diabetes, is now found in young adults and children. It is caused by too much glucose in the blood due to the pancreas not producing enough insulin - a hormone which breaks down glucose into energy in the cells – or due to the body not reacting to it, known as insulin sensitivity.

The results of the diet

Under close supervision of a medical team, 11 people who had developed diabetes later in life were put on an extreme diet of just 600 calories a day consisting of liquid diet drinks and non-starchy vegetables. They were matched to a control group of people without diabetes and then monitored over eight weeks. Insulin production from their pancreas and fat content in the liver and pancreas were studied.

After just one week, the Newcastle University team found that their pre-breakfast blood sugar levels had returned to normal.

A special MRI scan of their pancreas revealed that the fat levels in the pancreas had returned from an elevated level to normal (from around 8% to 6%). In step with this, the pancreas regained the normal ability to make insulin and as a result, blood sugar after meals steadily improved.

The volunteers were then followed-up three months later. During this time they had returned to eating normally but had received advice on portion size and healthy eating. Of the ten people re-tested, seven remained free of diabetes.

“We believe this shows that Type 2 diabetes is all about energy balance

in the body,” explained Professor Taylor, “if you are eating more than you burn, then the excess is stored in the liver and pancreas as fat which can lead to Type 2 diabetes in some people. What we need to examine further is why some people are more susceptible to developing diabetes than others.”

Dr Iain Frame, Director of Research at Diabetes UK, said: “We welcome the results of this research because it shows that Type 2 diabetes can be reversed, on a par with successful surgery without the side effects. However, this diet is not an easy fix and Diabetes UK strongly recommends that such a drastic diet should only be undertaken under medical supervision. Despite being a very small trial, we look forward to future results particularly to see whether the reversal would remain in the long term.”

“I no longer needed my diabetes tablets”

Gordon Parmley, 67, from Stocksfield in Northumberland took part in the trial. He said: ““I love playing golf but I was finding that when I was out on the course sometimes my vision would go fuzzy and I would have trouble focussing. It was after this that I was diagnosed with Type 2 diabetes. That was about six years ago and from then on, I had to control the diabetes with a daily combination of tablets - the diabetes drug, gliclazide and tablets for my cholesterol.

“When my doctor mentioned the trial I thought I would give it a go as it might help me and other diabetics. I came off my tablets and had three diet shakes a day and some salad or vegetables but it was very, very difficult and I’m not sure I’d have done it without the support of my wife who went on a diet alongside me.

“At first the hunger was quite severe and I had to distract myself with something else – walking the dog, playing golf – or doing anything to

occupy myself and take my mind off food but I lost an astounding amount of weight in a short space of time.

“At the end of the trial, I was told my insulin levels were normal and after six years, I no longer needed my diabetes tablets. Still today, 18 months on, I don’t take them. It’s astonishing really that a diet – hard as it was – could change my health so drastically. After six years of having diabetes I can tell the difference - I feel better, even walking round the golf course is easier.”

Provided by Newcastle University

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