

Weight loss can put type 2 diabetes into remission for at least two years

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More than a third (36 percent) of people with type 2 diabetes who took part in a weight management programme delivered in NHS primary care are in remission two years later, the latest findings of the Diabetes Remission Clinical Trial (DiRECT) have revealed.

The second year results of the trial, funded by Diabetes UK and led by experts at Newcastle University and the University of Glasgow, were announced today at Diabetes UK's Professional Conference and published in *The Lancet Diabetes & Endocrinology*.

Professor Roy Taylor – who co-led the trial with Professor Mike Lean – said the findings 'pull down the curtain on the era of type 2 [diabetes](#) as an inevitably progressive disease'.

These new results build on the globally-reported findings presented at the International Diabetes Federation in December 2017, which showed that 46 percent of participants were in remission after one year. A year later, 70 percent of those participants are still in remission.

The results confirm that – as with the first year results – remission is closely linked to weight loss; 64 percent of participants who lost over 10 kilos were in remission at two years. Participants regained some weight, as expected, between the first and second year. However, those in remission after one year who stayed in remission had a greater average weight loss (15.5 kilos) than those who did not stay in remission (12 kilos).

Participants were defined as in remission if they had long-term blood glucose levels (HbA1c) of less than 48mmol/mol (6.5 percent) without needing to use any type 2 diabetes medications.

As well as resulting in remission for many participants, the programme led to a drop in blood glucose levels and fewer diabetes medications across the whole intervention group. The average HbA1c fell from 60mmol/mol at the start to 54mmol/mol at the end of year two. Diabetes medication use dropped from 75 percent of the group to 40 percent.

In comparison, the average HbA1c remained similar (58mmol/mol vs 59mmol/mol) in those receiving standard care – the control group – and the proportion of people taking medications increased from 77 percent to 84 percent.

Quality of life scores increased across both groups, but those in the intervention group reported a larger improvement (10 point increase versus 2.5 point increase).

Understanding why significant weight loss results in remission of type 2 diabetes is at the heart of DiRECT. Detailed studies have so far revealed that weight loss can lead to reduced levels of fat inside the pancreas, which in turn associated with the recovery of pancreas function and insulin production.

By understanding the biology of remission, Professors Taylor and Lean believe it should be possible to provide better care for people diagnosed with type 2 diabetes in the future.

Professor Roy Taylor, Director of Newcastle University's Magnetic Resonance Centre, and co-primary investigator of the DiRECT trial, said: "These results are a significant development, and finally pull down the curtain on the era of type 2 diabetes as an inevitably progressive

disease.

"We now understand the biological nature of this reversible condition. However, everyone in remission needs to know that evidence to date tells us that your type 2 diabetes will return if you regain weight.

"Even during the second year of freedom from type 2 diabetes there was a highly suggestive difference in major complications of diabetes. The numbers are still small at the moment, and further information on this must be gathered during the planned longer term follow up."

Professor Mike Lean, Head of Human Nutrition at Glasgow University, diabetes specialist physician at Glasgow Royal Infirmary, and co-primary investigator of DiRECT, said:

"Proving in DiRECT that type 2 diabetes can be put into remission for two years in more than two thirds of people, if they can lose more than 10 kilos, is incredibly exciting. Achieving that entirely in NHS [primary care](#) is vital.

"People with type 2 diabetes and healthcare professionals have told us their top research priority is 'can the condition be reversed or cured'. We can now say, with respect to reversal, that yes it can. Now we must focus on helping people maintain their weight loss and stay in remission for life.

"If allowed to progress, type 2 diabetes becomes devastating. Our work has also shown that this weight management programme is relatively inexpensive when compared to the long-term management of type 2 diabetes, and this provides a compelling case for shifting resources to offer remission-based care."

Dr. Elizabeth Robertson is Director of Research at Diabetes UK. She

said: "These results further challenge the perception that type 2 diabetes needs to be a lifelong condition for everyone diagnosed with it.

"Remission of type 2 diabetes can be life changing; DiRECT offers one potential solution, we are committed to working with the researchers and the NHS to ensure these exciting findings reach people with type 2 diabetes as soon as possible.

"But we know type 2 diabetes is a complex condition, and this approach will not work for everyone. That's why we're continuing to invest in further research, to understand the biology underlying remission and find ways to make [remission](#) a reality for as many people as possible."

More information: Yiqiao Xin et al. Within-trial cost and 1-year cost-effectiveness of the DiRECT/Counterweight-Plus weight-management programme to achieve remission of type 2 diabetes, *The Lancet Diabetes & Endocrinology* (2018). [DOI: 10.1016/S2213-8587\(18\)30346-2](https://doi.org/10.1016/S2213-8587(18)30346-2)

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