

New clues into why people with type 2 diabetes develop dementia

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New research may help explain why people with type 2 diabetes are more likely to develop dementia.

The findings, from scientists at Imperial College London and presented at the Diabetes UK Professional Conference 2021, could help identify [risk factors](#) for dementia in people with type 2 [diabetes](#) and inform interventions to help prevent or delay the condition.

The research, funded by Diabetes UK, analyzed 'cardiometabolic factors' – such as [blood](#) pressure, blood sugars and cholesterol levels—in people with type 2 diabetes across two decades. The team identified changes in these factors during this period that were associated with developing dementia in later life.

Dementia, a group of conditions that affect the brain, causing memory loss and other changes to brain function, is more common in people with type 2 diabetes, but the reason why people with type 2 are more at risk hasn't been clear.

High blood sugar levels, blood pressure and cholesterol in people with type 2 diabetes can damage [blood vessels](#) and lead to serious cardiovascular problems, such as heart attacks and strokes. It has been suggested that these 'cardiometabolic factors' that are known to affect heart health might also affect brain health and could potentially play a role in the development of dementia in people with type 2 diabetes.

Higher blood pressure

To explore this, a team of researchers, led by Dr. Eszter Vamos at Imperial College London, looked to see if the factors affecting heart health in people with type 2 diabetes could also impact their dementia risk. They analyzed data from 227,580 people with type 2 diabetes over the age of 42 years, around 10% of whom went on to develop dementia. The team examined the participants' medical history across the 20 years prior to their dementia diagnosis to look at changes in cardiometabolic factors and bodyweight, and compared these to people who didn't develop dementia.

Over the 20-year period, changes in blood pressure differed between those who did and didn't develop dementia. People who developed dementia had higher blood pressure between 11-19 years before their dementia diagnosis, which then declined more steeply closer to their diagnosis, compared to those who didn't develop dementia. A decline in bodyweight starting at 11 years before a dementia diagnosis was found in people who developed the condition and this was steeper than in those who didn't develop it.

Blood sugar and [cholesterol levels](#) were also found to be generally higher across the entire 20-year period among people with type 2 diabetes who developed dementia, compared to those who didn't.

Eating healthily reduces dementia risk

Eating healthily, keeping active, reducing alcohol intake and stopping smoking are all advised to help everyone reduce their risk of dementia. These findings suggest that by monitoring cardiometabolic factors and managing blood sugar, blood pressure, cholesterol and bodyweight, people with type 2 diabetes could be supported to lower their risk of dementia.

Dr. Eszter Vamos, Diabetes UK-funded researcher at Imperial's School of Public Health, said: "Our results emphasize the importance of carefully managing cardiometabolic factors such as blood pressure, cholesterol and glucose levels early on, for people with type 2 diabetes.

"While this study cannot confirm causal associations, these results show that [blood pressure](#) and other cardiometabolic factors could be contributing to dementia development up to two decades before diagnosis."

Eye and kidney conditions

Dr. Elizabeth Robertson, Director of Research at Diabetes UK, which funded the study, said: "These crucial findings have uncovered how type 2 diabetes may contribute to dementia onset. Changes in the body that lead to dementia occur years before symptoms arise, and for the first time, researchers have uncovered a pattern of changes in people with type 2 diabetes that are associated with dementia.

"Knowing which factors contribute to the development of dementia, and when they have the biggest impact, is vital in giving people with type 2 diabetes the best possible care to prevent or delay dementia onset."

Next the researchers will investigate whether diabetes-related complications such as eye and kidney problems could be linked to dementia risk. The team will also examine whether risk factors for type 2 diabetes that we can't control—such as age and ethnicity—could work alongside cardiometabolic factors to determine [dementia](#) risk.

Provided by Imperial College London

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