

# Brain atrophy linked with cognitive decline in diabetes

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New research has shown that cognitive decline in people with Type 2 Diabetes is likely due to brain atrophy, or shrinkage, that resembles patterns seen in the early stages of Alzheimer's disease.

Dr Chris Moran and Associate Professor Velandai Srikanth of Monash University led the first large-scale study to compare [brain scans](#) and cognitive function between people with and without Type 2 Diabetes Mellitus (T2DM). They found that [brain atrophy](#), rather than cerebrovascular lesions, was likely the primary reason for cognitive impairment associated with T2DM.

The World Health Organisation reports that more than 347 million people worldwide live with diabetes and around 90 per cent of these cases are Type 2.

Associate Professor Velandai Srikanth of Monash University's Department of Medicine said the findings had important implications for Australia's ageing population.

"Type 2 Diabetes and dementia are both highly common disorders affecting the [ageing population](#) and this research shows that there may be a mechanistic link between them. Indeed, generalised brain atrophy may be the key driver of cognitive decline in Type 2 diabetes and such atrophy is also commonly seen in people with dementia," Associate Professor Srikanth said.

"By 2031 it is estimated that around 3.3 million Australians will have diabetes. The burden of dementia in the population will be greatly increased if a significant number of these individuals experience [cognitive decline](#)."

The research built on previous studies that had shown there may be a greater risk of future dementia in people with T2DM. However, it was unclear whether T2DM was a causal factor for the development of cognitive impairment, and if so, what mechanisms may be involved.

The researchers compared cognitive function and Magnetic Resonance Imaging (MRI) scans of the brain in more than 700 people with and without T2DM.

Those with diabetes performed less well in certain cognitive tests and had greater shrinkage in specific regions of the brain, which appeared to drive the differences in cognitive function. Although the researchers found that participants with diabetes also had more strokes on MRI, this did not explain the cognitive differences between groups.

The findings, published in *Diabetes Care*, will lead further research in trying to identify why people with Type 2 Diabetes develop brain atrophy, and how such atrophy may be prevented or slowed.

Provided by Monash University

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