People with type 2 diabetes are at increased risk of Alzheimer's disease and other adverse cognitive health issues. A new study conducted by Umeå University, Sweden, shows that the reason for the correlation may
be that people with type 2 diabetes have more difficulty getting rid of a protein that potentially increases the likelihood of contracting the disease.

The study is published in the journal *Journal of Alzheimer's Disease*.

"The results may be important for further research into possible treatments to counteract the risk of people with type 2 diabetes being affected by Alzheimer's," says Olov Rolandsson, senior professor at the Department of Public Health and Clinical Medicine at Umeå University, research leader and first author of the study.

The substances that the researchers have studied are two so-called beta-amyloids, which are among the most important components of the plaques found in the brains of people with Alzheimer's disease.

The researchers measured the concentrations in the blood of the beta-amyloids Aβ1-40 and Aβ1-42 as well as the enzyme that breaks down the beta-amyloids in a test group with type 2 diabetes and in a healthy control group.

The two groups were given infusion of glucose for four hours, which induced acute hyperglycemia among the participants in both groups, i.e. high blood sugar levels, after which repeated samples were taken from the subjects.

Immediately after the infusion of the sugar solution, the groups had similar values. Soon, the values of beta-amyloids fell sharply in the control group, while the values of the amyloid-degrading enzyme rose. Among the group with type 2 diabetes, there were no changes, i.e. the levels of beta-amyloid did not decrease, nor was there an increase in the enzyme that breaks down amyloid.
The results indicate that the body, in people with type 2 diabetes, does not have the same ability as healthy people to take care of beta-amyloid, which could increase the risk that it is then stored in the brain and causes cognitive diseases such as Alzheimer's.

"More research is needed to confirm the results of this limited study. Hopefully, in the long term, it can also lead to new treatments. But the findings underline the importance of preventing type 2 diabetes as far as possible and that people who do have it should avoid having episodes of high blood sugar," says Olov Rolandsson.

The study was conducted on 10 people with type 2 diabetes and eleven people without diabetes in the control group. The participants were aged 66–72 years.


Provided by Umea University

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