

Major depression more than doubles risk of dementia among adults with diabetes

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Adults who have both diabetes and major depression are more than twice as likely to develop dementia, compared to adults with diabetes only, according to a study published in the recent *Journal of General Internal Medicine*.

Dementia is the progressive decline of thinking and reasoning abilities. These can include memory loss, difficulty with basic math, wandering, living in the past, personality changes, and not recognizing familiar people.

"[Diabetes](#) alone has shown to be a risk factor for dementia, as has major depression by itself," noted the lead author of the study, Dr. Wayne Katon, University of Washington (UW) professor of psychiatry and behavioral sciences. Also on the study team were researchers from the Group Health Research Institute in Seattle and the Veterans Affairs (VA) Puget Sound Health Care System, as well as UW researchers in medicine and in epidemiology.

Various other population studies, Katon and the other authors noted, have shown that the risk of Alzheimer's disease, [vascular dementia](#), and other types of dementia is from 40 percent to 100 percent higher in people with diabetes, compared to people without diabetes. A history of depression more than doubles the subsequent risk of Alzheimer's disease and other forms of dementia in the general population.

"We wanted to determine the effects of both conditions - diabetes and

major depression--occurring together," Katon said. "Our analysis suggests that major depression more than doubles the risk of dementia in adults with diabetes."

The research team on this project, which is part of the Pathways Epidemiological Follow-Up Study, tracked the outcomes of adults from the Group Health Cooperative's diabetes registry who agreed to participate. They were patients from nine Puget Sound area primary-care clinics in western Washington state. The clinics were chosen for their socioeconomic and racial/ethnic diversity and were demographically similar to the area's population. Initial enrollment of patients took place between 2000 and 2002, and the patients were studied for five years. Patients already diagnosed with dementia were excluded from the study.

Over the five-year period, 36 of 455, or 7.9 percent, of the diabetes patients with major depression were diagnosed with dementia. Among the 3,382 patients with diabetes alone, 163 or 4.8 percent developed dementia.

The researchers calculated that major depression with diabetes was associated with a 2.7-fold increase of dementia, compared to diabetes alone. Because the onset of dementia can sometimes be marked by depression, the researchers also adjusted their hazard model to exclude patients who developed dementia in the first two years after their depression diagnosis.

The team's previous findings from earlier studies showed that depression increases the mortality rate among people with diabetes, as well as the rate of complications such as heart, blood vessel, kidney and vision problems.

The exact manner in which diabetes and depression interact to result in poorer outcomes is not certain. Some studies suggest that a genetic

marker for dementia is associated with a faster cognitive decline. Depression may also raise the risk of dementia, the authors noted, because of biological abnormalities linked to this affective illness, including high levels of the stress hormone cortisol, poor regulation in the hypothalamus-pituitary system, or autonomic nervous system problems that can affect heart rate, blood clotting, and inflammatory responses.

Depression, they added, might also raise the risk of dementia because of behaviors common in the condition, such as smoking, over-eating, lack of exercise, and difficulty in adhering to medication and treatment regimens. In the current study, patients with both diabetes and [major depression](#) were more likely to be female, single, smokers, physically inactive, and treated with insulin. They also had more diabetes complications and a higher body mass index, a ratio calculated from height and weight. However, these differences were controlled for in the analysis and depression remained an important risk factor.

Diabetes, the authors noted, is a risk factor for dementia because of blood vessel problems and also may accelerate the decline of Alzheimer's disease. Many factors linked to diabetes might also increase the odds of developing dementia, including tissue damage from high blood sugar levels, episodes of low blood sugar and insulin resistance.

Depression is common among people who have diabetes. Until more research is available on the exact mechanisms behind the links between depression, diabetes, and [dementia](#), the researchers say, "It seems prudent for clinicians to add effective screening and treatment for depression to other preventive measures such as exercise, weight control, and blood sugar control to protect against the development of cognitive deficits in patients with diabetes."

Provided by University of Washington

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