

Depression and diabetes: fellow travelers, researchers say

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Researchers have long known that type-2 diabetes and depression often go hand in hand. However, it's been unclear which condition develops first in patients who end up with both. Now, a new study led by Johns Hopkins doctors suggests that this chicken-and-egg problem has a dual answer: Patients with depression have an increased risk of developing type-2 diabetes, and patients with type-2 diabetes have an increased risk of developing depression.

For the study, published in the June 18 *Journal of the American Medical Association*, diabetes expert Sherita Hill Golden, M.D., M.H.S., and her colleagues took advantage of data generated by the Multi-Ethnic Study of Atherosclerosis (MESA), which examined risk factors for atherosclerosis, or hardening of the arteries, in an ethnically diverse group of 6,814 men and women between ages 45 to 84. Participants in the MESA study identified themselves when they enrolled as white, black, Hispanic or Chinese.

During MESA, participants made three visits to clinics over the course of three years to be examined for various atherosclerosis risk factors, including type-2 diabetes and symptoms of depression, which could serve as a precursor for full-blown clinical depression.

The study also collected information on other atherosclerosis risk factors, such as participants' body-mass indices, blood pressure, diet and exercise patterns, and smoking habits, as well as information correlated with health in general, such as income and socioeconomic factors.

Mining the data for their own purposes, Golden and her colleagues excluded from their analysis all participants who had high fasting glucose, an indication of diabetes, at the initial clinic visit. They then looked to see whether participants who initially had elevated symptoms of depression, as indicated through a questionnaire, were more likely than those who didn't to develop high fasting glucose at the end of the three-year study period.

Results showed that those with elevated depressive symptoms were 42 percent more likely overall to develop diabetes by the end of the study than those without these symptoms. Moreover, the stronger the symptoms, the higher the risk of diabetes, a "dose response" that lends strength to the findings.

Even when the researchers accounted for such factors as overweight, lack of exercise, and smoking, the risk of developing diabetes was still 34 percent higher for patients with depressive symptoms.

To investigate whether diabetes could lead to depression, Golden and her colleagues used the same pool of MESA information and excluded those who had elevated depressive symptoms at the initial clinic visit. Then, they looked to see whether those who had high fasting glucose—with or without a formal diagnosis of diabetes—were more likely to develop depressive symptoms by the end of the study.

The researchers found that patients treated for diabetes, about 9 percent of the group, were about 54 percent more likely to develop elevated depressive symptoms than those without diabetes.

Surprisingly, those with prediabetes or untreated diabetes were about 25 percent less likely to develop elevated depressive symptoms than people with normal fasting glucose, a finding Golden's team cannot explain at this time.

Golden, an associate professor of medicine and epidemiology at the Johns Hopkins University School of Medicine, speculates that depression may lead patients to develop behaviors that trigger diabetes or make it worse, such as overeating, not exercising or smoking. Similarly, keeping up with the often extensive treatment regimens to care for their diabetes may make patients' depression worse. Understanding how one condition might lead to another could improve treatments for both problems, she says.

"Having both diabetes and depression can make it difficult for patients to get the good clinical outcomes that we like to see for each of these conditions," says Golden. "To make sure that patients with diabetes and depression receive the best care, we wanted to get to the bottom of the connection between these two conditions.

"It's important that doctors be attuned to look for both conditions in patients at risk for either diabetes or depression," Golden adds. "We may want to develop interventions for both treatments, instead of just one or the other."

Source: Johns Hopkins Medical Institutions

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