

# **Diabetes, Depression Can Be Two-Way Street**

**But experts note factors such as obesity; inactivity might also be at play**

**By Ellin Holohan**

*HealthDay Reporter*

MONDAY, Nov. 22 (HealthDay News) -- Diabetes and depression are conditions that can fuel each other, a new study shows.

The research, conducted at Harvard University, found that study subjects who were depressed had a much higher risk of developing diabetes, and those with diabetes had a significantly higher risk of depression, compared to healthy study participants.

"This study indicates that these two conditions can influence each other and thus become a vicious cycle," said study co-author Dr. Frank Hu, a professor of nutrition and epidemiology at the Harvard School of Public Health in Boston. "Thus, primary prevention of diabetes is important for prevention of depression, and vice versa."

In the United States, about 10 percent of the population has diabetes and 6.7 percent of people over the age of 18 experience clinical depression every year, according to the researchers.

Symptoms of clinical depression include anxiety, feelings of hopelessness or guilt, sleeping or eating too much or too little, and loss of interest in life, people and activities.

Diabetes is characterized by high blood sugar and an inability to produce insulin. Symptoms include frequent urination, unusual thirst, blurred vision and numbness in the hands or feet.

About 95 percent of diabetes diagnoses are type 2, and often are precipitated by obesity.

The researchers found that the two can go hand in hand.

The study followed 55,000 female nurses for 10 years, gathering the data through questionnaires. Among the more than 7,400 nurses who became depressed, there was a 17 percent greater risk of developing diabetes. Those who were taking antidepressant medicines were at a 25 percent increased risk.

On the other hand, the more than 2,800 participants who developed diabetes were 29 percent more likely to become depressed, with those taking medications having an even higher risk that increased as treatment became more aggressive.

Tony Z. Tang, adjunct professor in the department of psychology at Northwestern University, said that participants who were taking medications for their conditions fared worse because their illnesses were more severe.

"None of these treatments are cures, unlike antibiotics for infections. So, depressed patients on antidepressants and diabetic patients on insulin still frequently suffer from their main symptoms," said Tang. "These patients fare worse in the long run because they were much worse than the other patients to start with."

Tang cautioned against drawing too many conclusions from the study. He noted that the correlations between diabetes and depression declined markedly when excessive weight and inactivity were controlled for in the study.

"This suggests that much of the observed correlation between depression and diabetes comes from confounding variables," he said. "In layman's terms, being fat and having an unhealthy lifestyle makes people more likely to be depressed, and [also] more likely to have diabetes."

But if research establishes a strong connection between the two illnesses it could advance treatment, Tang added.

"If a substantial causal connection is established between the two disorders, it would be rather novel and it could potentially change how we understand and treat both disorders," Tang said.

Dr. Joel Zonszein, director of the Clinical Diabetes Center at Montefiore Medical Center in New York City, said establishing causal relationships is difficult in a study based on questionnaires because self-reports can be inaccurate.

"This is not ideal," he said. "It's difficult to say what is causing what, if one is causing the other. This is very difficult to elucidate."

A large, controlled, randomized study is needed, said Zonszein, who is also a professor of clinical medicine at Albert Einstein College of Medicine, in New York City.

But he praised the research, noting that tracking such as large number of subjects "over a long period of time" strengthened the findings.

Hu, also a professor of medicine at Harvard University, said the study conclusions were valid. When two conditions share the same risk factors (obesity

and lack of exercise), "we can still say that the conditions are linked and one is both the cause and consequence of the other condition," he explained.

Depression can affect blood sugar levels and insulin metabolism through increased cortisol, contributing to unhealthy eating habits, weight gain and diabetes, he said.

"On the other hand, management of diabetes can cause chronic stress and strain, which in the long run, may increase risk of depression," said Hu. The two "are linked not only behaviorally, but biologically."

### **More information**

For more on diabetes, go to [U.S. National Library of Medicine](#) .

SOURCES: Joel Zonszein, M.D., professor, clinical medicine, Albert Einstein College of Medicine, and director, Clinical Diabetes Center, Montefiore Medical Center, New York City; Frank B. Hu, M.D., Ph.D., professor, nutrition and epidemiology, Harvard School of Public Health, professor, medicine, Harvard Medical School, Boston; Tony Z. Tang, Ph.D., adjunct professor, department of psychology, Northwestern University; vice chairman, WorldLink Foundation; Nov. 22, 2010, *Archives of Internal Medicine*

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