

# PTSD doubles diabetes risk in women

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Women with post-traumatic stress disorder are nearly twice as likely to develop type 2 diabetes compared with women who don't have PTSD, according to researchers at the Mailman School of Public Health at Columbia University and Harvard School of Public Health.

The longitudinal cohort study provides the strongest evidence to date of a causal relationship between PTSD and type 2 diabetes. Results are published online in the journal *JAMA Psychiatry*.

The researchers analyzed survey data collected between 1989 and 2011 from 49,739 women enrolled in the Nurses Health Study II and found a dose-response relationship: the greater the number and severity of PTSD symptoms, the greater a woman's risk of type 2 diabetes. Four percent of the nurses reported the highest number of PTSD symptoms. By age 60, nearly 12 percent of women with the highest number of PTSD symptoms had developed type 2 diabetes, whereas fewer than 7 percent of women with no trauma exposure had diabetes.

Antidepressant use and elevated body mass index accounted for nearly half of the increased risk of type 2 diabetes, or 34 and 14 percent, respectively. On the other hand, smoking, diet quality, alcohol intake, and physical activity did not explain the association.

One in nine women will have PTSD at sometime over the course of her lifetime—twice the rate of men. Women are also more likely to experience extreme traumatic events like rape that carry a high risk for the disorder.

"Not only is PTSD devastating to mental health, but it affects physical health too, raising risk for cardiovascular disease, diabetes, and obesity," said senior author Karestan C. Koenen, PhD, professor in the Department of Epidemiology at the Mailman School.

"Women with PTSD and the health professionals who care for them should be aware that these women are at greater risk for diabetes," said first author Andrea L. Roberts, PhD, research associate in the Department of Social and Behavioral Sciences at Harvard School of Public Health. "As fewer than half of Americans with PTSD receive treatment, our study adds urgency to the effort to improve access to mental health care to address factors that contribute to diabetes and other chronic diseases."

To assess type 2 diabetes, the researchers used a validated survey method that first asked women whether they had been diagnosed by a doctor, then confirmed diagnosis with information about test results, symptoms, and medications. PTSD was assessed using the Short Screening Scale. The nurses reported a range of trauma, including sexual assault, domestic violence, car accidents, and unexpected death of a loved one.

The study builds on past findings by the researchers, including a 2013 study that reported a link between PTSD and obesity. Other research has shown a link between mental health issues like anxiety, social phobia, and agoraphobia and type 2 diabetes.

Further research is needed to identify the biochemical and possible additional behavioral changes, such as sleep disturbance, that mediate the relationship between PTSD and type 2 diabetes.

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