

# Young adults with PTSD may have a higher risk of stroke in middle age

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Young adults who suffer from posttraumatic stress disorder (PTSD) may be more likely to experience a transient ischemic attack (TIA) or major stroke event by middle age, raising the risk as much as other better-

known risk factors, according to new research published in *Stroke*, a journal of the American Stroke Association.

"Stroke has a devastating impact on [young patients](#) and their families, many of whom struggle to cope with long-term disability, depression and economic loss during their most productive years," said Lindsey Rosman, Ph.D., lead author of the study and assistant professor of medicine in the division of cardiology at the University of North Carolina School of Medicine in Chapel Hill. "Ten to 14% of ischemic strokes occur in adults ages 18 to 45, and we don't really have a good understanding of the [risk factors](#) for stroke in this age group."

While PTSD has previously been shown to increase the risk of heart disease and stroke in [older adults](#), this is the first study to demonstrate a link between trauma-induced stress disorders and the risk of TIA and stroke in young and middle-aged adults, an age group that has experienced a striking increase in stroke events over the past decade.

Although this study was conducted solely in veterans, PTSD is a debilitating mental condition that affects nearly 8 million adults in the U.S. and about 30 percent of veterans. People who observe or directly experience a traumatic event such as sexual assault, gun violence/mass shooting, military combat or a natural disaster may develop long-lasting symptoms of anxiety, avoidance, hypervigilance, anger/irritability, flashbacks and nightmares. "PTSD is not just a [veteran](#) issue, it's a serious public health problem," Rosman said.

Researchers analyzed medical data from more than one million young and middle-aged veterans enrolled in healthcare services provided by the Veterans Health Administration (mostly males, age 18-60, average age of 30, 2 out of 3 white) and had served in recent conflicts in Iraq and Afghanistan. None had previously experienced a TIA or stroke.

During 13 years of follow-up, 766 veterans had a TIA, and 1,877 had an ischemic stroke. Researchers also found:

- 29% were diagnosed with PTSD, and veterans with PTSD were twice as likely to have a TIA, raising the risk more than established risk factors such as diabetes and sleep apnea.
- Veterans with PTSD were 62% more likely to have a stroke, raising the risk more than lifestyle factors such as obesity and smoking.
- Veterans with PTSD were more likely to engage in unhealthy behaviors, such as smoking and getting little exercise, that raise the risk for stroke.
- Even after adjusting for multiple stroke risk factors, co-existing psychiatric disorders, such as depression and anxiety, as well as drug and alcohol abuse, veterans with PTSD were still 61% more likely to have a TIA and 36% more likely to have a stroke than veterans without PTSD.
- There was a stronger link between PTSD and stroke in men than in women.

"Clinicians should be aware that mental health conditions such as PTSD are increasingly prevalent among young people and may have major implications for their risk of stroke," Rosman said. "Our findings raise important questions about whether early recognition and successful treatment of PTSD can prevent or decrease the likelihood of developing stroke in those exposed to violence, trauma and severe adversity."

Although the study showed a strong relationship between PTSD and early TIA and stroke, it wasn't designed to prove that PTSD causes either condition. Additionally, because the analysis was conducted in younger veterans, the results may not be generalizable to non-veterans or older adults who may have more conventional stroke risk factors, such as atrial fibrillation and heart failure.

"We need to improve stroke prevention in [young adults](#) by developing targeted screening programs and age-appropriate interventions. Addressing mental health issues including PTSD may be an important part of a broader public health initiative to reduce the growing burden of [stroke](#) in young people," Rosman said.

**More information:** *Stroke* (2019). [DOI: 10.1161/STROKEAHA.119.026854](#)

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