

The search for predictors of risk for post-traumatic stress disorder

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Data in a study published in the Archives of General Psychiatry suggest that certain variants of a gene that helps regulate serotonin (a brain chemical related to mood), may serve as a useful predictor of risk for symptoms related to post-traumatic stress disorder (PTSD) following a trauma.

"One of the critical questions surrounding PTSD is why some individuals are at risk for developing the disorder following a trauma, while others appear to be relatively resilient," says lead author, Kerry J. Ressler, MD, PhD, Howard Hughes Medical Institute investigator and professor in the Department of Psychiatry and Behavioral Sciences at Emory University School of Medicine.

"It is known that genetic heritability is one component of the differential risk for PTSD, but the mechanisms remain relatively unknown."

In this study, the researchers were able to look at college students who had been interviewed for a study prior to a 2008 mass shooting on the Northern Illinois University campus, and then were interviewed afterward. The researchers used these prospective psychological data to examine the association between variants in the [serotonin transporter gene](#) promoter region of the brain, and PTSD/[acute stress disorder](#) symptoms that developed in the aftermath of exposure to the shooting.

"We believe that the strength of this study is the availability of the same validated survey measure to assess PTSD symptoms prior to and after a

shared acute traumatic event," explains Ressler, who is also a researcher at the Yerkes National Primate Research Center at Emory.

The data suggest that differential function of the serotonin transporter may mediate differential response to a [severe trauma](#). This is interesting because the gene product is the target for the first-line treatment for PTSD, the [selective serotonin reuptake inhibitors](#) (SSRIs). Additionally, variants in the gene have previously been shown to be associated with different risk for depression following [life stress](#).

The researchers concluded that when examined in a relatively homogenous sample with shared trauma and known prior levels of child and adult trauma, this serotonin transporter genotype may serve as a useful predictor of risk for PTSD related symptoms in the weeks and months following trauma.

Importantly, notes Ressler, this is one of likely a number of genes that will ultimately be found to contribute to risk and resilience. As more of these gene pathways are understood, it is hoped that such findings will contribute to improved treatment and prevention as well as better prediction of risk for PTSD following traumatic exposure.

Provided by Emory University

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