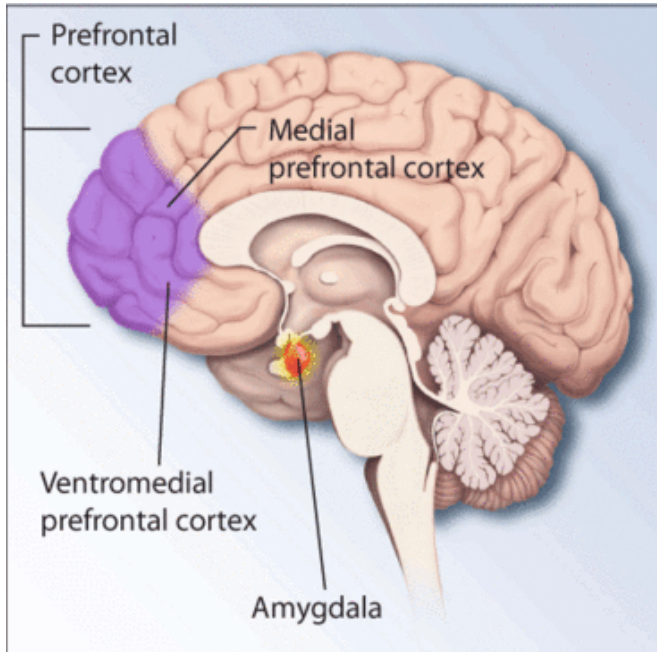


# Size of brain region is associated with response to PTSD treatment

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Regions of the brain associated with stress and posttraumatic stress disorder. Credit: National Institutes of Health

A study has found that PTSD patients with a larger hippocampus—a region of the brain key to distinguishing between safety and threat—are more likely to respond to exposure-based therapy for posttraumatic stress disorder (PTSD).

The study, from researchers at Columbia University Medical Center (CUMC) and New York State Psychiatric Institute (NYSPI), was published online in *Psychiatry Research: Neuroimaging* on May 4, 2016.

Previous research has shown that having a smaller [hippocampus](#) is associated with increased risk of PTSD. In this study, the researchers examined the relationship between hippocampus volume, measured with MRI, and response to treatment in

50 participants with PTSD and 36 trauma-exposed healthy controls. The participants were evaluated at baseline and after 10 weeks, during which time the PTSD group had prolonged exposure [therapy](#), a type of cognitive behavioral therapy that has been shown to help patients with PTSD discriminate between real and imagined trauma.

The study found that patients with PTSD who responded to treatment had greater hippocampal volume at the beginning of the study than non-responders to treatment.

The findings add to growing evidence that the hippocampus is key to distinguishing between cues that signal safety and those that signal threat.

"If replicated, these findings have important implications for screening and treating patients who have been exposed to trauma," noted Yuval Neria, PhD, professor of medical psychology at CUMC, director of the PTSD Program at NYSPI, and senior author of the paper. "For example, new recruits for military service may be scanned before an assignment to determine whether they are capable of dealing with the expected stress and trauma. Having a smaller hippocampus may be a contraindication for prolonged exposure to trauma."

First author Mikael Rubin, MA, a former project coordinator at NYSPI and currently a PhD student at University of Texas at Austin, added, "While we only studied response to prolonged [exposure therapy](#), future research may help to determine if PTSD [patients](#) with a smaller hippocampus respond better to other treatments such as medication, either alone or in combination with psychotherapy."

**More information:** The article, "Greater Hippocampal Volume is Associated with PTSD Treatment Response," was published online in *Psychiatry Research: Neuroimaging* on May 4, 2016.

Provided by Columbia University Medical Center

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