

New strategy to weaken traumatic memories

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Imagine that you have been in combat and that you have watched your closest friend die in front of you. The memory of that event may stay with you, troubling you for the rest of your life. Posttraumatic stress disorder (PTSD) is among the most common and disabling psychiatric casualties of combat and other extremely stressful situations. People suffering from PTSD often suffer from vivid intrusive memories of their traumas. Current medications are often ineffective in controlling these symptoms and so novel treatments are needed urgently.

In the February 1st issue of [Biological Psychiatry](#), published by Elsevier, a group of basic scientists shed new light on the biology of [stress](#) effects upon [memory](#) formation. In so doing, they suggest new approaches to the treatment of the distress related to [traumatic memories](#). Their work is based on the study of a drug, RU38486, that blocks the effects of the stress hormone cortisol.

Using an animal model of traumatic memory, investigators at the Mount Sinai School of Medicine show that treatment with RU38486 selectively reduces stress-related memories, leaving other memories unchanged. They also found that the effectiveness of the treatment is a function of the intensity of the initial "trauma." Although this particular study was performed in rats, their findings help to set the stage for trials in humans. Cristina Alberini, Ph.D., corresponding author on this article, explains how their findings will translate into developing clinical parameters: "First, the drug should be administered shortly before or after recalling the memory of the traumatic event. Second, one or two treatments are sufficient to maximally disrupt the memory. Third, the

effect is long lasting and selective for the recalled memory. Finally, the time elapsing between the traumatic experience and the treatment seems to be an important parameter for obtaining the most efficacious treatment."

Dr. John Krystal, Editor of *Biological Psychiatry* and affiliated with both Yale University School of Medicine and the VA Connecticut Healthcare System, discusses the significance of the findings: "When treating PTSD, clinicians often attempt to reduce the negative distortions of traumatic memories so that people can better cope with their traumas. The new study by Taubenfeld and colleagues suggests that blocking the effects of cortisol may be one strategy to promote the 'normalization' of traumatic memories." Dr. Alberini agrees, noting that "these results suggest that carefully designed combinations of behavioral and pharmacological therapies may represent novel, effective treatments for PTSD or other anxiety disorders."

More information: The article is "Preclinical Assessment for Selectively Disrupting a Traumatic Memory via Postretrieval Inhibition of Glucocorticoid Receptors" by Stephen M. Taubenfeld, Justin S. Riceberg, Antonia S. New, and Cristina M. Alberini. Authors Taubenfeld, Riceberg, and Alberini are with the Department of Neuroscience, and New and Alberini are with the Department of Psychiatry, all at Mount Sinai School of Medicine, New York, New York. The article appears in *Biological Psychiatry*, Volume 65, Issue 3 (February 1, 2009), published by Elsevier.

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