



## Review Aims to Pave the Way to Better PTSD Care

By Rick Nauert PhD

New research has advanced scientific understanding of how post-traumatic stress disorder (PTSD) develops and persists. Experts believe the new findings will improve care and perhaps aid prevention of the disorder.

A special issue of the *Harvard Review of Psychiatry* reviews the growing body of evidence that will enhance the way psychiatrists understand brain structure and function involved in PTSD. Experts believe the new knowledge will augment efforts to interrupt the processes leading to the development of PTSD symptoms in traumatized individuals.

“PTSD, while one of the most recently defined syndromes in psychiatry, may also be one of the earliest to benefit from progress in neurobiology and advances in translational approaches to brain function and behavior,” said guest editor **Kerry J. Ressler, MD, PhD**. Ressler is with **McLean Hospital**/Harvard Medical School.

Ressler noted that patients with PTSD have “characteristic re-experiencing, avoidance, and hyperarousal symptoms,” which can persist for months or years after exposure to traumatic events.

Posttraumatic stress disorder affects about 6 percent of the population, but the rate is much higher in groups exposed to severe trauma, such as combat veterans, refugees, and assault victims.

Although PTSD is at least partly genetic, it also depends on personal history of trauma in childhood and adulthood, as well as psychological factors linked to mediation of fear and regulation of emotions.

“Therefore, PTSD is among the most likely of psychiatric disorders to be understood from the perspective of environmental influences interacting with biological vulnerability,” Ressler said.

The special issue provides expert updates in four key areas related to the development, diagnosis, and management of PTSD:

- **Neurophysiology.** Scientific understanding of human fear responses provides important insights into how PTSD develop and persists. The mechanism of “fear extinction”—in which learned fear is suppressed by new learning—is highly relevant to PTSD and its treatment. Ressler said effective treatments for PTSD, particularly exposure therapy, are based on the mechanisms of fear extinction.
- **Neuroimaging.** Research has also made strides in identifying the brain structures and functions involved in emotion dysregulation of PTSD. New findings have identified biomarkers of these dysregulated processes—including abnormal functioning of the body’s stress responses, and dysfunction of brain areas called the hippocampus and amygdala. These brain regions are involved in memory and emotional responses. These

discoveries may point toward treatments targeting stress hormones and functioning of these brain regions.

- **Resilience.** The concept of resilience—the ability to adapt successfully to trauma or threat—is being studied to explain why some traumatized individuals develop PTSD symptoms while others do not. Interventions to promote resilience have potential not only as a treatment for people with PTSD, but for also preventing it in populations at risk of trauma.
- **Evidence-based treatments.** The special issue concludes with a review and update of evidence behind the range of “reasonably effective” treatments for PTSD. Psychotherapy approaches address the underlying dysfunctions of fear extinction and emotion regulation. A class of antidepressants (selective serotonin reuptake inhibitors) are the only FDA-approved medications for PTSD, but many other drugs may be used off-label to treat specific symptoms.

Although current treatments do address the underlying mechanisms of PTSD, many patients do not improve or continue having symptoms. Moreover, others might have a better response to individualized treatment approaches.

“Advances in neurobiology and behavioral science are needed for truly targeted, innovative, robust treatments and preventions,” Ressler concluded.