

For the Primer, visit [doi:10.1038/nrdp.2015.57](https://doi.org/10.1038/nrdp.2015.57)

➔ Post-traumatic stress disorder (PTSD) can develop after a person is exposed to a traumatic event, such as war, natural disaster or violent attack. Widely viewed as a disorder of extinguishing fearful memories, current research is focused on explaining differences in fear responses and resilience among affected people in the aftermath of trauma.

DIAGNOSIS

Despite changes in the diagnostic criteria for PTSD over the past 40 years, clinicians can diagnose their patients using a series of questions that aim to determine the presence, frequency and severity of symptoms. Symptoms of PTSD include traumatic nightmares, flashbacks, emotional numbing, diminished interest, detachment, hypervigilance, difficulty concentrating and sleep disturbances. Importantly, the physician who suspects PTSD must confirm that the patient has experienced trauma — it is a prerequisite for a PTSD diagnosis. However, only a minority of people who experience a traumatic event develop the disorder.

Rx MANAGEMENT

The most effective strategies for treating patients with PTSD are psychotherapies that aim to help patients to integrate traumatic experiences so that they can experience meaningful relationships and high functioning. Trauma-focused treatments include a combination of narration or exposure to the traumatic narrative through visualization, exercises to help patients to cope with situations that trigger strong reactions and relaxation techniques to help with physiological hyperarousal. Other types of therapy and certain medications have also shown effectiveness in treatment.

EPIDEMIOLOGY

One of the first large epidemiological studies of PTSD was carried out in veterans of the Vietnam War

The prevalence of PTSD is higher in women than in men for reasons that might include their higher likelihood of experiencing physical violence such as assault and rape, and perhaps increased vulnerability to the disorder through genetic or environmental factors

PREVENTION

Training in resilience — the ability to 'bounce back' from adversity — has been the focus of some prevention studies. At-risk individuals, including military personnel, emergency first responders and journalists working in areas of conflict, might benefit most from strategies that enhance resilience, but data are scant on their effectiveness. Such strategies involve training individuals in how to respond to stressful situations and self-management approaches such as sleep regulation and mindfulness.

The level of combat exposure relates to the rates of PTSD development in military populations — the prevalence is higher in combat-exposed personnel than in support personnel

Across the world, socioeconomically disadvantaged people are most at risk of PTSD because of higher exposure to trauma and lower access to post-trauma care

MECHANISMS

Studies have shown that PTSD is associated with exaggerated negative-feedback sensitivity of the hypothalamic–pituitary–adrenal axis, which controls reactions to stress. Individuals who later develop PTSD are thought to have lower levels of glucocorticoid signalling at the time of the trauma, which results in unopposed sympathetic nervous system activation and promotes the consolidation (long-term memory formation) of the trauma. Other studies have shown irregularities in the levels of pro-inflammatory cytokines and endocannabinoids, allelic variation in glucocorticoid-related genes and fluctuations in activity in the default mode, salience and central executive neural networks, which might all contribute to the risk of PTSD and a low resilience to trauma.

QUALITY OF LIFE

The symptoms of PTSD are inherently linked to quality of life. Poor sleep, for example, can lead to poor concentration and an irritable mood, which can affect work and personal relationships. Victims of personal assault can experience phobic behaviours with respect to people or situations that are reminiscent of their trauma. People who experience sexual assault often report somatic symptoms such as pelvic pain. Patients often feel isolated, which can be attributed to emotional numbing that interferes with personal relationships.