Posttraumatic stress disorder: Nature and nurture?

Edmund S. Higgins, MD

Posttraumatic stress disorder (PTSD) can be one of the most frustrating anxiety disorders for both the patient and clinician. Asymptomatic persons become haunted by an experience they can’t forget. Their resulting anxiety can sour what were once healthy relationships or disable someone who previously was productive.

In some cases, despite aggressive psychopharmacology and psychotherapy, the patient remains incapacitated by inappropriate and unremitting fear. The trauma seems to have broken something—changed something inside the brain—that can’t be fixed.

Brain imaging studies of patients with PTSD—combat veterans and women with histories of childhood sexual abuse—have shown smaller hippocampal volumes compared with patients without PTSD. This finding has led to speculation that stress hormones (glucocorticoids) adversely affect the hippocampus (Figure 1).

This line of reasoning suggests that prolonged stress causes increased production of glucocorticoids that are neurotoxic to the hippocampus, resulting in hippocampal atrophy. Studies of rodents and patients with Cushing’s syndrome support this hypothesis. The hippocampus, there-

Figure 1. The hippocampus, a specialized type of cortex, is key to memory and emotion. As this medial view shows, it extends along the lateral ventricle floor on each side of the brain.

Illustration for CURRENT PSYCHIATRY by Marcia Hartsock, CMI

Dr. Higgins is a practicing psychiatrist with an interest in neuroscience developments that relate to psychiatry. He is clinical assistant professor of family medicine and psychiatry, Medical University of South Carolina, Charleston.
Although there is evidence suggesting the hippocampus, a brain region crucial for memory and emotion, may have been irreversibly damaged in patients with severe PTSD, the theory that this damage is caused by stress and trauma has been questioned by recent research. Su...