Trauma's Footprint

Exploring Trauma's Impact on Your Brain & Body

"We have learned that trauma is not just an event that took place sometime in the past; it is also the imprint left by that experience on mind, brain, and body. This imprint has ongoing consequences for how the human organism manages to survive in the present.

Trauma results in a fundamental reorganization of how the mind and brain manage perceptions. It changes not only how we think and what we think about, but also our very capacity to think."

— Bessel A. van der Kolk, The Body Keeps the Score: Brain, Mind, and Body in the Healing of Trauma.

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What is Trauma?

Trauma is the emotional and mental reaction to deeply distressing or upsetting events, such as natural disasters, accidents, crime, or the loss of someone close. Trauma can overwhelm your ability to cope, leaving you feeling scared, helpless, or disconnected. Trauma may affect the brain and body, manifesting as emotional, physical, or cognitive challenges. Symptoms might include flashbacks, anxiety, depression, or trouble handling everyday life.

While trauma can potentially affect anyone, its impact varies. Factors like previous life experiences, social support, and the ability to process emotions determine how trauma manifests[1].

1 Van der Kolk, B. A. (2014). *The body keeps the score: Brain, mind, and body in the healing of trauma.* Viking.

The Neuroscience of Trauma: How Trauma Affects the Brain

The brain is the core of how we process and respond to stress. When a person experiences trauma, the brain's response systems are activated, often referred to as the "fight-or-flight" mechanism. Trauma impacts the core function of three key areas of the brain that determine how a person will react: the amygdala, prefrontal cortex, and the hippocampus.

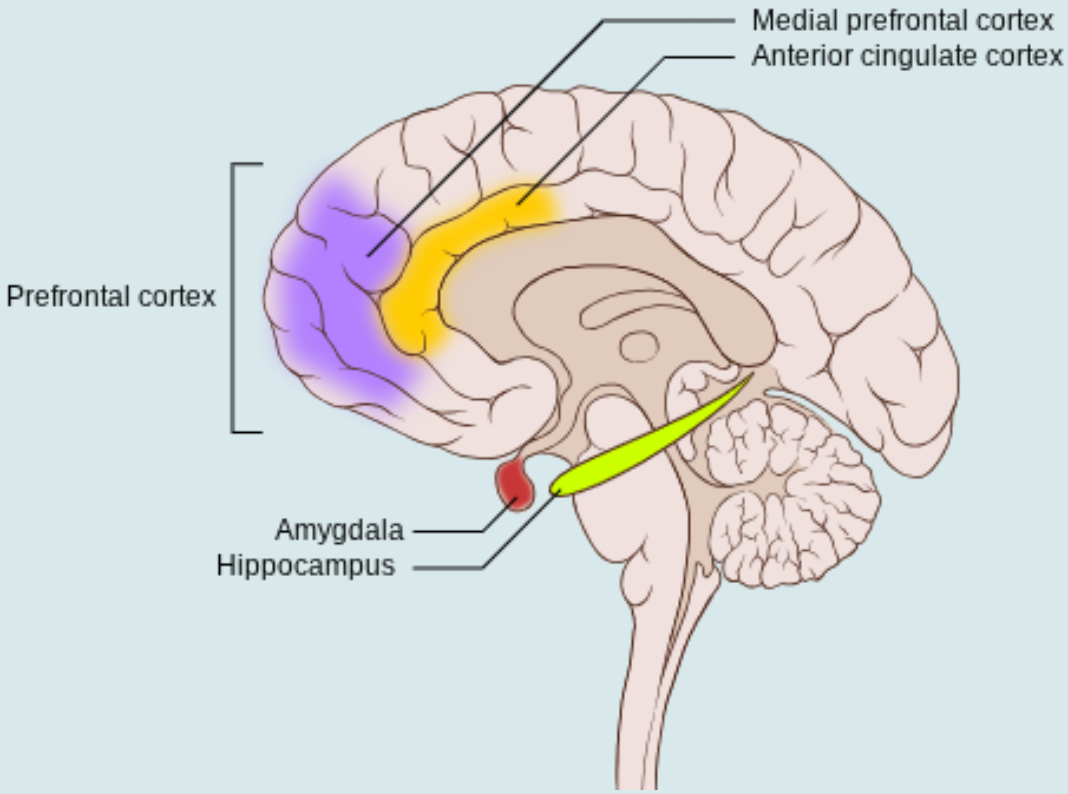


Image: *Patrick J. Lynch, medical illustrator C. Carl Jaffe, MD, cardiologist Fvasconcellos Whidou, CC BY-SA 4.0, via Wikimedia Commons/CC BY 4.0*

Amygdala (Emotional Processing)

The Amygdala is the region of the brain that processes emotions and memories, and also plays a central role in detecting and reacting to threats. During traumatic situations, the amygdala becomes hyperactive, often increasing the fear response. The body may experience an increased heart rate, rapid breathing, sweating, impairment of decision-making, and release of stress hormones such as adrenaline and cortisol [2] .

Prefrontal Cortex (Decision-making & Self-Regulation)

The Prefrontal Cortex is one of the last brain functions to develop fully. It is responsible for personality expression, complex cognitive behaviors, impulse control, and emotional regulation. Trauma can cause a decrease in function of the prefrontal cortex, which impairs a person's ability to think, regulate their emotions and behaviors, and make effective decisions.

Hippocampus (Memory & Context)

The hippocampus is central for memory formation and meaning making. Trauma can reduce the size of the hippocampus, impairing a person's ability to separate past and present experiences. This is why many survivors of trauma may experience flashbacks and intrusive memories and have difficulty processing new information.

[2] *McEwen, B. S. (2017). Neurobiological and Systemic Effects of Chronic Stress. Chronic stress (Thousand Oaks, Calif.), 1, 2470547017692328.*

Stress Response System: Fight-or-Flight Activation

The stress response system is a natural survival mechanism that is triggered by perceived threats. This system releases hormones such adrenaline and cortisol that prepare the body to react quickly. These hormones increase a person's heart rate and blood pressure and cause the body to react in one of four common ways: fight, flight, freeze, or fawn. Prolonged activation of this system can impair the brain's ability to regulate emotions, contributing to anxiety, depression, and difficulty coping with stress [3] .

[3] McEwen, 2017.

Below are examples of these 4 types of responses:

Fight

- Tight jaw
- Teeth Grinding
- Clenched fists
- Fast heartbeat
- Increased blood pressure
- Anger
- Irritability
- Focus or fixation on the threat
- Heightened awareness
- Fast breathing
- Flushed skin

Flight

- Anxiety
- Panic
- Avoidance
- High energy
- Restlessness
- Fidgeting
- Leg shaking
- Numbness in arms or legs
- Excessive exercising
- Darting eyes
- Substance use

Freeze

- Inability or difficulty moving
- Sense of dread
- Pale skin
- Decreased heart rate
- Muscle tension
- Shutting down
- Low energy
- Feeling cold, numb, or heavy
- Disassociation
- Feeling “frozen”

Fawn

- Appeasing the threat source
- People-pleasing
- Trouble setting boundaries
- Denying your own needs & wants
- Over-agreement

Body Memory: How Trauma Affects the Body

The concept of body memory suggests that the body holds onto trauma in the form of somatic experiences such as physical sensations, tension, breathing, and postures. Over time, these sensations can become chronic and display as pain, illness, or physical discomfort.

Common Somatic Symptoms:

Chronic pain: A person might experience unexplained pain in the neck, shoulders, and back. This pain can be the body's way of holding tension in response to stress or anxiety.

Fatigue: Being on high alert can lead to fatigue as the body remains on high alert, resulting in exhaustion of both physical and emotional resources.

Digestive issues: Trauma can disrupt the gut-brain connection, leading to gastrointestinal issues like irritable bowel syndrome, nausea, acid reflux, or constipation.

Sleep Disturbances: Trauma can disrupt sleep patterns, leading to insomnia, nightmares, or frequent waking during the night. Lack of quality sleep can exacerbate symptoms of trauma and impair cognitive function.

Weakened immune system: The body's response to trauma may suppress the immune system, making individuals more susceptible to infections, autoimmune diseases, and prolonged inflammation.

Trauma's negative impact on the body often results in changes to a person's emotions and behavior such as:

Emotional

- Hypervigilance
- Intrusive Thoughts or Flashbacks
- Mood Swings and Emotional Numbness

Cognitive

- Memory Problems
- Difficulty Concentrating
- Negative Beliefs or Self-Worth Issues

Coping with Trauma

There are strategies and resources that can help alleviate the negative impact of trauma on your brain and your body. Mental health therapy and emotional wellness practices can be particularly beneficial. Some examples include:

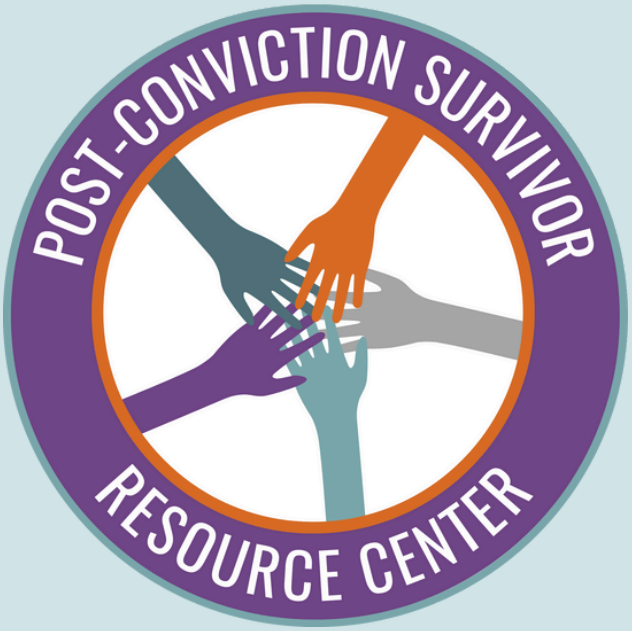
Cognitive Behavioral Therapy (CBT)
A therapeutic approach to help identify and change negative thought patterns and cope with trauma-related symptoms.

EMDR (Eye Movement Desensitization and Reprocessing)
A technique using eye movements while recalling traumatic memories to help process trauma and reduce emotional intensity.

Somatic Experiencing
A therapeutic practice that focuses on bodily sensations and aims to release the physiological trauma-related tension stored in the body.

Yoga & Mindfulness
Practices to balance the autonomic nervous system, reduce stress, and improve emotional and physical well-being.

Massage & Acupuncture
Alternative therapies that can help release physical tension, promote relaxation, and support the body's natural healing processes.



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