

UNDERSTANDING TRAUMA

What is Trauma?

Dr. Bruce Perry (2002), a physician, researcher, leading expert on childhood trauma, and founder of the Child Trauma Academy, defined trauma as a psychologically distressing event that is outside the range of usual human experience. He explained that traumatic experiences often involve a sense of intense fear, terror, and helplessness.

Unfortunately, trauma is not rare, and it is often not a one-time, well-publicized incident. For many children and teens trauma happens repeatedly and in their own homes. Although some youth survive and even thrive despite what they have experienced, others are negatively affected in significant ways, and those effects may be temporary or prolonged (National Child Traumatic Stress Network Schools Committee, 2008; Perry, 2007, 2009; Perry, Pollard, Blakely, Baker, & Vigilante, 1995; SAMHSA, 2014; van der Kolk, 2014).

Humans are not built to endure or get used to traumatic events. Although resiliency is important to foster, we must be careful not to mistake an unemotional response as a sign of resiliency. Sometimes, youth attempt to cope with trauma by shutting down their physical and psychological reactions in unhealthy ways (Lillas & Turnbull, 2009; National Child Traumatic Stress Network Schools Committee, 2008; Perry, 2009; Perry et al., 1995; SAMHSA, 2014).

Trauma is a distressing experience or set of experiences that threatens a person's actual safety or perceived sense of felt safety (Hughes, 2009; Lillas & Turnbull, 2009; Ogden, Minton, & Pain, 2006) to such a degree that it exceeds an individual's capacity to cope in healthy ways (Bloom & Farragher, 2013; Craig, 2016; Lillas & Turnbull, 2009; Ogden, Minton, & Pain, 2006; van der Kolk, 2014, 2017). Trauma has a negative impact on one's life functioning, whether those effects are immediate, ongoing, or delayed (SAMHSA, 2014; Siegel, 2012b; van der Kolk, 2014, 2017).

The Effects of Trauma on the Stress Response System

Hippocampus

The hippocampus is integral for memory, particularly the integration of implicit and explicit memory. Implicit memory includes body sensations, emotions, perceptions, and behavioral (or procedural) memory. It is functioning before birth. Explicit memory includes facts, events, and autobiographical memories that are typically based in a specific point in time. Explicit memory is not functioning until the age of 18 months.

Even if a traumatized child is too young to remember adverse experiences, the person will likely still remember what happened implicitly in terms of body sensations or emotions. In fact, adrenaline, which is released at times of stress, often enhances implicit memory. Later, when these implicit memories are activated, a person may feel like the implicit memory is happening in the present, even if there is no narrative from the past to go with it. This explains why traumatized youth may feel threatened or upset in situations that somehow remind them of past traumas, even if they do not know what those traumas are. Similarly, children's play themes may show signs of past trauma they may not explicitly remember.

Amygdala and Hypothalamus

Also within the limbic area, the amygdala works in conjunction with other biological processes and structures, including the hippocampus, to help detect threats. Then, it activates our body's stress response by sending a fast message to the hypothalamus in the brain. This allows us to act without thinking when in threatening situations so that we can move from an approach-oriented way of interacting in the world to one of avoidance in order to be safe. As part of this process, our brainstem may help initiate the fight, flight, freeze, or faint reflex as well. This is done via the body's autonomic nervous system (ANS), which is a whole-body response to stress. We can think of the amygdala as our body's security guard. It is what starts the process that gives us big energy in our bodies when we are upset and may lead us to impulsively yell, hit, or run away. With the amygdala activated, the brain saves time by allowing for quick action. This is good if we are in immediate danger: If we are in the jungle being chased by a tiger, there is no time to safely pause and think about how to solve the problem. We simply need to run. But this can be problematic if we are not in immediate danger; it decreases our ability to stop and think about the healthiest way to handle stressors. Our stress response system may cause us to overreact in ways that could be unsafe or, at the very least, damaging to our relationships.

Prefrontal Cortex

This part of the brain allows us, as humans, to think, plan ahead, solve problems, and learn. It is central to our capacity for self-awareness. The prefrontal cortex helps us manage strong emotions and behaviors because it can link, balance, and integrate the activities of the downstairs brain and upstairs brain, as well as help us connect to other people—functions that are critical for healthy living in addition to learning.

The Wise Leader and the Security Guard

All youth need support as their upstairs brain develops; furthermore, they need help to learn to balance the prefrontal cortex, the wise leader, and the amygdala, the security guard. Children need practice managing their stress response systems in adaptive ways. When this happens, stress is repeatedly managed, which allows input in the brain to reach the prefrontal cortex, where executive function and other healthy decision-making processes can be performed and thus strengthened for future use. The more this practice occurs, the easier it becomes because as Szalavitz and Perry (2010) stated, "The brain becomes what it does most frequently".

For traumatized youth, their stress response systems have been activated (often repeatedly) as a result of the unsafe situations they have experienced. According to the Hebbian Rule, "Neurons that fire together, wire together." This means that the more high-stress states that are experienced, the stronger those pathways in the brain become. As Perry (2007; Perry & Szalavitz, 2007) has described, what starts as an adaptive state in the face of trauma can eventually become a maladaptive trait after a frequent pattern of use. Thus, traumatized youth are often neurologically set up to quickly respond in the face of even mild perceptions of stress with downstairs brain reactions; these low-stress situations are perceived as dangerous so input doesn't pass to the prefrontal cortex, as it would for youth who have not experienced trauma.

In this way, Perry (2008, 2009) described that brain development is use dependent, meaning growth only occurs in relation to relationships and life experiences. Much like a plant that

grows and later needs pruning, the human brain grows based on social experiences and later it prunes unused connections. When early childhood social experiences are impaired by traumatic stress, the neural pathways associated with activation of the stress response system are strengthened and connections key to healthy brain development, particularly as it relates to upstairs brain functioning, may be pruned.

As a result, traumatized youth may not have a well-developed wise leader, and even if they do, they may not have had much practice balancing their wise leader and security guard. Instead, traumatized youth often repeatedly enter dysregulated arousal states, which the next section explores (Lillas & Turnbull, 2009; Perry et al., 1995; Siegel, 2010, 2012b; Siegel & Bryson, 2012, 2014; Szalavitz & Perry, 2010; van der Kolk, 2014).

The Effects of Trauma on Arousal

Stephen Porges (2011), who is a professor of psychiatry, Director of the Brain-Body Center at the University of Illinois at Chicago, and originator of the polyvagal theory, has asserted that our embodied brain is most definitely not just in our heads. A network of nerves, including the important vagus nerve, connects the brain in our skull with every other part of our body, including the heart, intestines, and other organ systems. Specifically, the brain's stress response system allows for three subsystems of defense that are controlled by the body's nervous system. Through a subconscious process called neuroception, our neural circuitry rapidly distinguishes whether a situation is safe, challenging, dangerous, or life threatening and directs us to respond accordingly.

This process governs the following responses:

1. Relationship-seeking actions that enable the other to help us soothe our stress
2. Mobilizing defenses through an anxious, hypervigilant state, which is called hyperarousal
3. Immobilizing defenses that shut down the body into a numb state whereby attention is withdrawn from the outside world, which is called hypoarousal

When faced with stimuli that we perceive as challenging, distressing, or threatening, our body dysregulates via the ANS in one of two ways: hyperarousal or hypoarousal (Lillas & Turnbull, 2009; Ogden & Fisher, 2015; Porges, 2011).

Hyperarousal is a state of whole-body stress response marked by primarily increasing energy. It occurs when our sympathetic nervous system pushes on the gas pedal and the body mobilizes its defenses by way of an anxious hypervigilance (Lillas & Turnbull, 2009; Ogden & Fisher, 2015; Porges, 2011). According to Lillas and Turnbull (2009), when experiencing hyperarousal, people tend to feel anxious and may become highly sensitive to stimulation in the environment as they scan for signs of danger. Individuals often feel less in control when their stress response systems are activated in this way. People are also less able to connect with others. Energy, sensory experiences, and emotions generally begin to feel big and can continue to intensify to levels that are too much if the stress response is not relieved by a removal of the stressor or an increase in social support.

Flooded Arousal. As an individual's hyperalert state goes up in intensity, one loses more and more control before "flipping one's lid" in a state of fear or rage. This extreme state of reactivity is marked by flooded arousal that is definitely too much. Emotions feel overwhelming, and the body may rely on the fight, flight, or freeze reflex to quickly expend a surge of energy in an impulsive effort to preserve safety. Once in a flooded state, managing oneself responsibly truly is a can't instead of a won't (Lillas & Turnbull, 2009; Ogden & Fisher, 2015; Ogden et al., 2006; Porges, 2009; Siegel, 2010).

Hypoarousal. People do not always enter a state of feeling too much as their body dysregulates and mobilizes in response to stress via the ANS. Instead, and also to varying degrees, individuals can enter a state of hypoarousal marked mostly by decreasing energy in the body. This occurs when the parasympathetic nervous system pushes on the brake pedal for protection, resulting in an immobilization response to threat. In states of hypoarousal, the body withdraws attention from the outside world. Individuals tend to experience feeling not enough rather than feeling too much. As such, people experience a shutting down of sensations and feelings as a means to manage dysregulated arousal. In this state, individuals are still experiencing a high degree of arousal (think "pressure on the brake pedal"), but it manifests as feeling numb, depressed, helpless, hopeless, shut down, or trapped. Because arousal is still high and dysregulated, executive function, as well as learning, can become impossible.

Faces of trauma in the classroom

The faces of trauma are varied, and there is no guidebook that dictates which educator responses, whether proactive or reactive, are best for every traumatized child or adolescent. Every student's needs are specific to his or her own story, although the framework for understanding and beginning to help these youth is the same. The key is in building a trauma-sensitive classroom and school environment marked by a focus on establishing and maintaining safe and supportive relationships, as well as an appreciation and acknowledgment that students are doing their best to cope with what may be effects from a difficult set of circumstances.

Importantly, not all youth with concerning behaviors, social difficulties, emotional issues, or diagnosed mental health problems have been traumatized. There are a number of contributors that affect emotional and behavioral health, including genetic factors, biological mother's stress level and health status during pregnancy, any exposure to substances or toxins while in utero, prematurity at birth, biological or health issues in the child, youth temperament, nutrition, sleep, other developmental considerations, poverty or limited family resources, access to health care, extended family or community support, family factors, parenting approaches, peer influences, environmental variables, cultural values, and educational experiences (Chasnoff, 2010; Levine, 2002; Lillas & Turnbull, 2009; Shonkoff et al., 2012).

Emotional effects. Prolonged distress as a result of developmental trauma often contributes to intense emotional reactions and difficulty regulating those big feelings. It can also result in a shutdown of emotions as described previously, or a combination of both. These are problems associated with affect regulation and may contribute to the following:

- Hypervigilance, meaning the student is on the lookout for danger and then quickly dysregulates when finding it
- Overreactions to what most would deem small problems
- High states of distress
- Emotional self-regulation problems (e.g., high anxiety, mood concerns, anger management problems)
- Difficulty labeling or describing feelings
- Struggling to communicate wants or needs
- Dissociation, where the student may shut down and turn off emotions, separate from one's body or the world, appear to be in a trance-like state, have difficulty thinking clearly when triggered, display memory problems, or may appear to be a different person at times (Cook et al., 2005)

Behavioral Effects. Traumatized children and adolescents with affect regulation problems are at risk for a variety of accompanying behavioral issues. This is not to say that all behavior is done intentionally, but rather that behavior is never random and is often a result of a need to seek a sense of felt safety, avoid danger, calm an overreactive stress response, or otherwise get one's physical or emotional needs met (Blaustein & Kinniburgh, 2010).

Examples include the following:

- Hyperactivity
- Poor impulse control
- Appearing attention-seeking or demanding
- Violence or other dangerous actions
- Oppositional behavior
- Difficulty with rules, points systems, and behavior plans
- Trauma reenactment through aggressive or sexual behavior or play
- Stealing or hoarding food, clothing, or objects
- Self-harm
- Being overly compliant
- Eating problems
- Sleep disturbances, bowel or bladder issues
- Maladaptive self-soothing behaviors
- Substance use (Cook et al., 2005)

Cognitive Effects. When the brain's security guard kicks in, the upstairs brain is offline, which impairs traumatized youth's cognitive development and functioning; this occurs both in single moments but also over time when childhood trauma is severe and prolonged (Blaustein & Kinniburgh, 2010). Students who have been traumatized often exhibit the following characteristics:

- Lack of curiosity
- Learning disabilities, processing difficulties, or memory impairments
- Language difficulties (i.e., vocabulary deficits or abstract and pragmatic language problems, which include the nuances of language in social situations)
- Difficulties in regulation of attention, focus, and work completion

- Problems with executive function (i.e., response inhibition, organization, planning, problem solving, and understanding cause–effect relationships)
- Difficulty understanding one’s own contribution to things that happen (Cook et al., 2005)

Relationship Effects. Traumatized students, especially those who have experienced developmental trauma at the hands of trusted caregivers, have had the foundation of their experiences in relationships significantly impaired. Not only do they often struggle with overwhelming states of arousal and emotions, behaviors are difficult to control, they may lack optimal cognitive functioning, and they have a poor self-concept; in many instances, they have learned that relationships provide little to no refuge from their pain, fear, and helplessness (Blaustein & Kinniburgh, 2010). As a result, they may display the following characteristics:

- General mistrust of others
- High need for control of self or others (often as a way to cope with anxiety)
- Interpersonal difficulties with adults and peers
- Unhealthy boundaries in relationships (i.e., rigid or diffuse)
- Hesitance to ask for help or a tendency to ask for help with everything
- May be clingy and overly dependent out of fear that if they do not hang tightly on to people, those individuals may go away or stop being available to them
- Withdrawn, socially isolated, or otherwise detached from others in an attempt to not need anyone
- Tendency to demonstrate both “I need you” and “Get away from me” patterns of communication
- Overly helpful or solicitous of attention
- Difficulty reading social cues
- Communication problems
- Difficulty taking another person’s point of view
- Little understanding of others’ feelings and lack of empathy
- Vulnerable to revictimization and/or victimizing others (Cook et al., 2005)