

Chapter 3

TRAUMA- INFORMED & HEALING- CENTERED CARE



Neurobiology of Trauma¹

In advocacy work, it is helpful to understand that stress and trauma exist on a continuum. What may feel overwhelming or traumatizing to one person may not feel that way to another due to a variety of internal or external factors. These factors are often related to one's lived experience and available support and resources. The presence or lack of support and resources tend to make people more insulated from or more vulnerable to the effects of trauma. Our bodies hold a wealth of information. The cascade of physiological processes that occur when faced with overwhelm often helps inform how we perceive, and eventually heal from, particular experiences.

Fight, Flight, Freeze, or Fawn

It can be reassuring for survivors to know that traumatic events can initiate responses in their bodies that may be out of their control. This is the body's effort to help them survive traumatic experiences like sexual violence. These are often referred to as the survival responses of fight, flight, or freeze.

Most people like to imagine that they would know what they would do in a highly unsafe situation. Many assume that they would fight or run (flight) and many do. However, others may freeze or fawn. There are two types of freeze response. One is collapsing, in which muscles become loose and the person can faint or lose consciousness. The other is immobility, in which the person is very still, cannot move and often cannot talk.

More recently fawn has been added as a survival strategy. Fawn, or appeasement, is when survivors engage in avoidance or appeasing behaviors to reduce the likelihood of further harm. Fight, flight, freeze, and fawn responses occur quickly and are determined by the brain based on past experience, personality, and conditioning (like military training).



CONSIDERATIONS FOR ADVOCATES



A survivor may not know a freeze response is a completely normal reaction to a threatening situation. Advocates can normalize this and remind survivors, their loved ones, and other professionals that this response is outside of a person's conscious control. The survivor (or others) may inadvertently judge or blame themselves for inaction if they don't understand how an overwhelming traumatic situation can impact the body.

Many advocates appreciate a basic understanding of what happens physiologically when we encounter overwhelming situations that threaten our sense of safety. Advocates are encouraged to understand the neurobiology of trauma and to be able to talk about it in very simple terms that can feel validating to survivors, such as “Your body reacted the best way it knew how to help you survive in that moment,” or “It’s common for the body to freeze during an overwhelming experience like sexual assault.”

This section will review relevant parts of the neurobiology of trauma that are helpful for anyone working with trauma survivors to be aware of.

Neurobiology Review

The human brain has developed over time to have three broad sections. This “triune brain” developed from the bottom up and from the back to the front. The survival, or reptilian, brain developed first and contains the lower, innermost structures. The emotional, or limbic brain, developed next and is the interior area of the brain. The thinking brain, or the cerebral cortex, has always been part of the human brain, but its development occurred last and is involved in humans' higher-level cognitive function.

The brain and the spinal cord make up the central nervous system. These structures are connected to and communicate with all the nerves throughout the rest of the body, known as the peripheral nervous system. Neurons are the small structures that relay information back and forth within the body. The nervous system is further broken down into autonomic, sympathetic, and parasympathetic branches. These functions occur without conscious thought (like breathing or digestion), occur at our will or in response to threats, and help us relax after nervous system activation.

When the body registers stress or threats to safety, the brain further activates in ways to help us survive. In other words, the parts of our reptilian brain can take over in these moments, suppressing our thinking brain for a time. This can be helpful for short term survival.

However, it can be problematic when our brains err on the side of caution and register a threat that may not be there, which makes the body activate stress response at inappropriate times. In general, overwhelming stress and trauma dysregulate or disorganize the mind and body in physical, emotional, spiritual, and relational ways.

Repeated trauma also negatively impacts the brain on the cellular level, keeps certain brain structures over or underactive, and can build neural networks that are difficult to change since “neurons that fire together, wire together.”²

Understanding the Stress Response

The thalamus in the brain acts as the relay station that takes in sensory information and shares it with the rest of the brain. This happens both extremely quickly (with information going to the fear center of the brain, the amygdala) and slightly more slowly (with information simultaneously going to the thinking part of the brain, the cerebral cortex).

Many people think of the amygdala as the “fire alarm” of the brain that constantly evaluates our environments for potential threats or danger. For people who have experienced trauma, this fear center can be overactive. This contributes to hypervigilance or avoidance behaviors.

When the amygdala detects a threat, it begins the stress response, also known as the Hypothalamus-Pituitary-Adrenals or HPA Axis. This response happens so quickly that the act of fighting, fleeing, freezing, or fawning is beyond our conscious control. In fact, the amygdala turns off the thinking part of the brain temporarily.

This stress response pathway, the HPA Axis, is both in the brain (activating the hypothalamus and pituitary gland) and in the body (activating the adrenal glands that sit on each of the kidneys in the lower back). The amygdala talks to the hypothalamus to help activate the sympathetic nervous system for action. The pituitary gland in the brain communicates with the adrenal glands

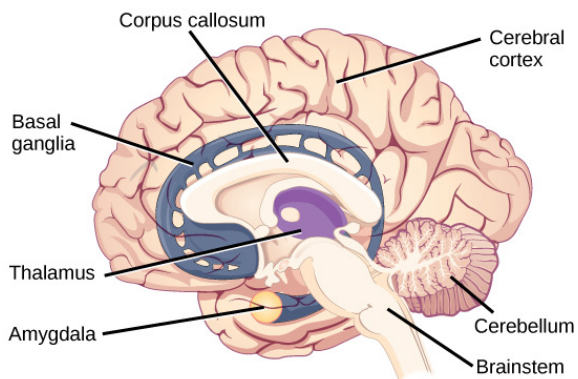


to secrete over 1400 biochemicals (including cortisol, oxytocin, and opiates), and jump starts survival-related physical processes that activates the body's stress response. This stress response is intended for short term activation. Ideally, stress peaks and then the parasympathetic nervous system can help calm the body after an overwhelming event. However, traumatic events or long-term stress can cause this stress pathway to be overactive. In the long run, chronic stress can lead to a host of negative health outcomes.

Trauma and Memory

The hippocampus is another important structure in the brain. It acts as the memory center, or a huge "filing cabinet," where explicit, declarative, and autobiographical memory is made and kept. This large area of the brain encodes memory by taking a still shot, putting a time stamp on it, and remembering how long something lasted.

The hippocampus also decides what information to keep or discard. It tends to retain emotionally-charged memories because they are relevant to future survival. With sensory information, the amygdala



references these files in the hippocampus to decide when something is a threat that requires a heightened response. When survivors experience triggers, or stimuli that activate their nervous systems in similar ways to the original trauma, it is often because the hippocampus gave faulty information to the amygdala based on the neural networks that have been created and maintained or reinforced.

Overwhelming stress and trauma causes disorganization in the mind and body, including in how memories are encoded or retrieved. When the body is stressed, the surface of the hippocampus is flooded with cortisol. It does not fully activate, which can result in encoding errors. Under stress the hippocampus may take close-up snapshots (tunnel vision) of details or fragments that the brain thinks are important. It may take fuzzy pictures,

and it may not time stamp a memory (or sequence it in a larger context of events).

Additionally, there are times when no memory may be made at all. This includes when new sensory information does not go from the thalamus to the hippocampus, when too much alcohol or other substances are in the body, for children under 3 (as the hippocampus is just starting to come online), or when a trauma is so overwhelming that the hippocampus and prefrontal cortex are suppressed entirely by the amygdala. Even if a memory is not encoded in the brain, the body may still keep knowledge of the experience through physical sensations. Additionally, the scientific field of epigenetics is finding that some physiological impacts of trauma can be passed from generation to generation on a cellular level.

When a survivor reports to law enforcement or has a medical forensic exam, a trauma-informed line of questioning centers on:

- Building trust and rapport with the survivor through warmth, empathy, and patience.
 - Helping the survivor reduce their initial stress level.
 - Allowing plenty of time to talk.
 - Explaining why certain questions need to be asked.
 - Asking open-ended and sensory based questions.
- This can help survivors with memory recall.

The human brain is constantly taking in information, but it doesn't retain it all. We all have moments of mild dissociation, like driving down the road and letting our minds wander. Dissociation occurs on a continuum, from zoning out to using dissociation as a protective way to create mental distance and safety from a distressing experience. When early life trauma is severe and pervasive, it can both impact people's ability to remember events as well as how their identity forms.

For some people, traumatic memories will surface over time, for others those conscious memories may be inaccessible forever. In this field we often notice that memories tend to appear at a few different times, including:

- When people have a sense of safety in their lives.
- When they are actively engaging in trauma treatment or healing work.
- When other situations occur that remind the brain and body of earlier traumas.

This may happen when someone is in their 40s, when the human brain is often in a 'default mode' and the neural network allows for greater mind wandering.



Neurobiology and Trauma Treatment

From a physiological perspective, early trauma treatment strives to help decrease activation of the amygdala, so that the stress response is not get triggered as much, as often, or at times when there is not a real threat. Treatment often involves working with the hippocampus to help refile memories and to help it give less erroneous information to the amygdala when assessing potential threats. This is called memory consolidation work.

Advocates have an important role in bearing witness to others' suffering, in helping survivors and concerned others manage overwhelm, and in assisting with activities that help the body become less activated. Much of what we feel physically, in our subtle (or not so subtle) body sensations, helps inform our emotions. With the support of advocates or other helping professionals, survivors may need to reconnect to their bodies safely. They may also need help to work through emotional experiences in ways they can tolerate, without their mind or body becoming too overwhelmed.

Some survivors may actually feel more activated when they become too relaxed. Particularly for people who have experienced a freeze response, relaxation can feel like a trauma trigger. This is because both the sympathetic and parasympathetic nervous system branches were operating during a freeze.

Survivors may already know what activities work best to calm their mind and body. They may benefit from gentle questioning of what, if anything, has been helpful to them in the past. When working with a new client who has a history of the freeze response or does not feel connected to their body, gentle body-based grounding activities are a good place to start. This may be better than deep relaxation techniques or anything that asks a survivor to close their eyes. When guiding survivors

through grounding activities, advocates should always use invitational language with many opportunities for survivors to make choices and be in control.

Many people have now heard of neuroplasticity. This is the idea that the brain constantly changes over the lifespan. Even though the stress response and trauma is damaging to the memory center of the brain, the hippocampus is able to regenerate to some degree and neural networks can change. Omega 3 consumption (such as eating fish), meditation, movement or exercise, and new situations or scenery all support the hippocampus' ability to create new neurons and new neural pathways.

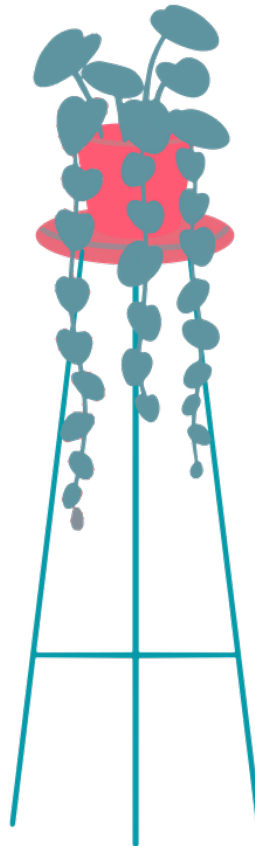
Vicarious Trauma & Mirror Neurons

As an advocate, you will be impacted by others and others will impact you. Our brains work to be on the same wavelength as someone we are supporting, in a process called co-regulation. A helping professional's attunement to a survivor helps their healing process. The brain has mirror neurons that activate when we move or when we observe others. These mirror neurons are thought to be the root of our ability to feel empathy on the most cellular level. While empathy is vital to advocacy, it adds to how overwhelm or eventual vicarious trauma develops in helping professionals who are exposed to others' trauma.

Post Traumatic Growth & Resilience

While many people think of the mind and body as separate, we know they are deeply connected. Trauma causes dysregulation and disconnection physiologically, in one's psyche or mind, and in one's relationship to others.

However healing can and does happen in all of these realms, too. Instead of thinking of trauma as a process of recovery that has a beginning and an end, it is helpful for advocates to understand healing as a journey



of integrating traumatic experiences so that they have decreased negative impacts on the survivor over time.

Additionally, survivors can experience post traumatic growth. This concept is steeped in the neurobiology of trauma: the human brain is constantly changing. Neural connections and activity can be strengthened or weakened so that survivors' lived experiences are more tolerable and hopeful. This neuroplasticity can make brains more resilient, even after traumas, potentially allowing people to better manage the impact of future overwhelming events. These brain changes often happen best with a mix of body- and mind-based approaches or strategies, such as mindfulness practices.

✓ KEY POINTS

Chapter 3

Key to a trauma-informed approach to advocacy is shifting away from the dominant narrative of “What’s wrong with you?” to instead center the question of “What happened to you?” Language is powerful and can reflect deep intention and understanding.⁴

A trauma-informed approach centers the survivor and their self-identified needs to inform support and resources.⁵

The body’s extreme effort to help someone survive a traumatic situation like sexual violence is referred to as fight, flight, freeze, or fawn. It can be helpful for advocates to normalize these responses and remind survivors that this is a brain response and out of the person’s control.

Healing in the brain and body is possible, but rarely linear. It is helpful for advocates to understand healing as a journey of integrating traumatic experiences so that they have decreased negative impacts on the survivor over time.

Trauma impacts memory and can result in dissociation and future triggering events.

Endnotes

¹ Sexual Assault Support Services of Midcoast Maine. (2021). *Trauma and the Brain: Questions and Answers for Survivors of Sexual Assault*.

² Hebb, D. (1949). *The Organization of Behaviour*. John Wiley & Sons.

³ Centers for Disease Control and Prevention (2019). *Preventing Adverse Childhood Experiences: Leveraging the Best Available Evidence*. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

⁴ Used with permission from and thanks to: National Sexual Violence Resource Center. (n.d.) *Foundations of advocacy training manual*. Retrieved from: <https://www.nsvrc.org/foundations-advocacy-training-manual>. p.67

⁵ Ibid.

Much of the information in this chapter is thanks to work done by Jim Hopper: jimhopper.com.

