Caring for Our Nervous Systems

Navigating the Neurobiology of Political Relationships

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Key Points

- All human cultures develop beautiful practices that make us feel good, therefore regulating our nervous systems.
- When we do things that feel good and are good for us, restorative drugs (neurotransmitters) circulate through our bodies—this is nature's pharmacy.
- When our nervous systems spend more time in restoration and regulation than in stress, we increase access to very cool prefrontal cortex functions.
- Those cool prefrontal cortex functions are necessary to create a just world.
- Some people get stuck in an amygdala-dominant state which decreases prefrontal cortex function. This is bad for them and others around them.
- Amygdala activation releases stressful neurotransmitters that can make people feel like they are under threat. Feeling under chronic threat changes perception. While defending against this perceived—and frequently inaccurate—threat, aggressive, brutal behavior becomes justified in the service of gaining power and resources for survival.
- That's part of what we're dealing with politically right now. Learning about neurobiology helps strategize against this oppressive, antisocial behavior and keeps us healthy individually and communally.

Introduction

As we face this pivotal political moment, remember that acting from the loving and creative parts of our human nature is self-care and it makes us very strong. Engaging in behaviors that support our emotional health and our nervous systems is a form of activism. Cultivating a flexible nervous system that can transition out of stress and activation into restoration supports internal sustainability for the important tasks we have in front of us. Additionally, neurobiology is a potent lens of analysis when strategizing responses to the spread of authoritarian and fascist leaders, their political and financial enablers, and corporations that participate in financial abuse of others in the pursuit of unending resource accumulation that is not directly necessary for their survival.

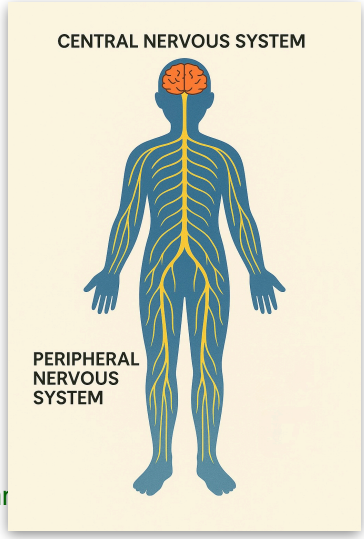
These antisocial behaviors, and the cognitive circumstances that allow justification of them, are catalyzed by a chronic, aggressive neurobiological survival response. This response, rooted in dominance and control, is driving behaviors that prioritize resource accumulation over mutual aid, interpersonal responsibility, and collective care. “When stress responses become chronic or dysregulated they contribute to maladaptive patterns of behavior and physiology” (Chrousos, 2009, p. 376).

However, there is good news. While it is true that human beings have the neurobiological wiring for aggressive survival responses, we are also deeply wired to survive through cooperation and prosocial relationship building. “Humans are capable of extraordinary aggression, but we are also capable of remarkable cooperation and altruism” (Sapolsky, 2017, p. 527).

This moment calls for an organized, prosocial response rooted in nervous system awareness and collective resilience. If the people most invested in domination and extraction are stuck in survival responses, then those seeking justice must increase their ability to stay regulated and capable of community building and complex group decision making under increasing pressure. The material in this guide serves that goal. Increasing conscious control of nervous system responses creates power, which can be used to infuse the world with justice. The beauty in the world and the experiences of the vulnerable inspire this work.

Basic Neurobiology

Nervous systems receive sensory input, interpret it, learn from it, and respond. The nervous system itself is created from billions of neurons that communicate with each other by releasing neurotransmitters (Cleveland Clinic, n.d.).



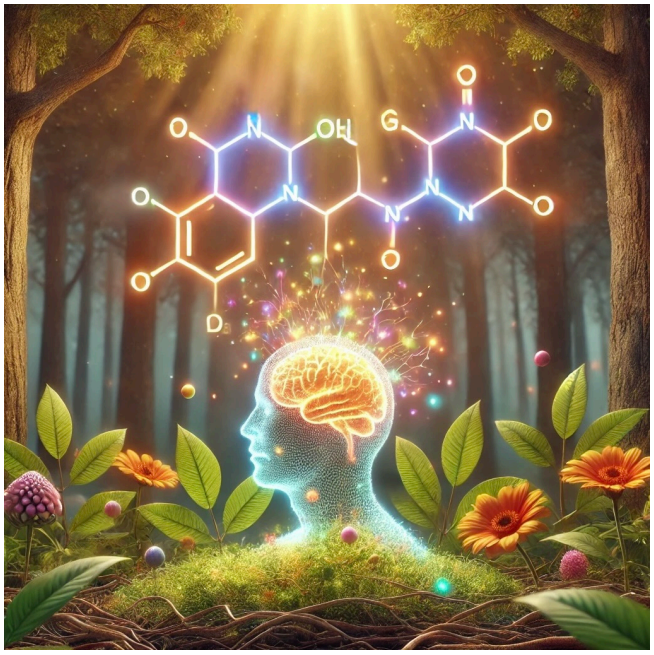
The Central Nervous System (brain and spine) processes information. The Peripheral Nervous System (sensory and

motor nerves) transmits information to and from the Central Nervous System (Kenhub, n.d.-b). This cycle of communication determines a person's physical, cognitive, and emotional state.

Humans are born with far more neurons and neural connections than the brain will ultimately maintain. Across childhood, adolescence, and into early adulthood, the brain gradually refines its structure. Many neurons are removed as the nervous system matures. In addition to neuron loss, the brain also refines its circuitry through synaptic pruning. "Neural circuits that are repeatedly activated become stronger and more efficient, while those that are not used tend to weaken and eventually disappear" (Siegel, 2010, p. 33). These processes literally shape an individual nervous system and track what we can expect from others, develop response patterns to other people and the world based on what we experience, and contribute to the formation of interpersonal attachment patterns. Nervous systems continue to change throughout life through experience, a process known as neuroplasticity. By refining awareness and making intentional choices, individuals can influence how their nervous systems develop and respond over time (Sapolsky, 2017; Siegel, 2010).

Neurotransmitters

Neurotransmitters are chemical messengers that carry signals between neurons and direct how different parts of the body and brain respond. Made by the body, they regulate functions such as mood, movement, digestion, heart rate, breathing, arousal, and immune activity. Over 100 neurotransmitters have been identified. They are nature's pharmacy, providing the body with its own set of powerful drugs. The primary neurotransmitters that drive the stress response include glutamate, which is excitatory and increases neural activation, and

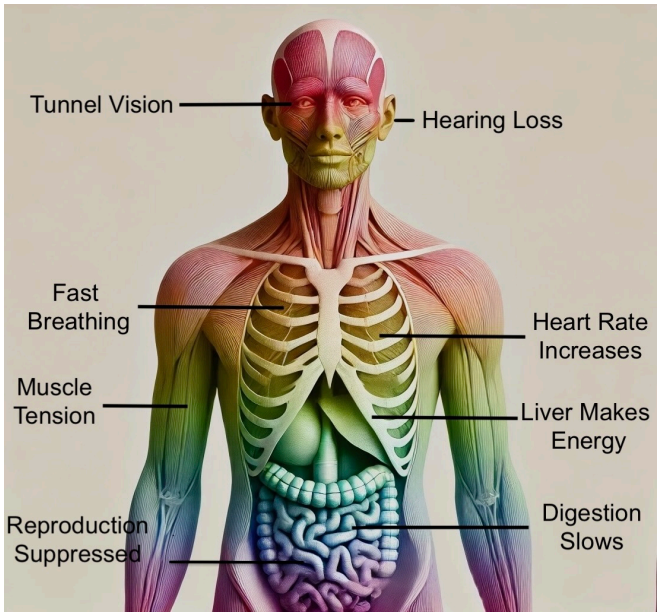


epinephrine, which fuels the fight or flight reaction by raising heart rate, blood pressure, and energy availability (Cleveland Clinic, n.d.; Dana Foundation, n.d.; Chrousos, 2009; Sapolsky, 2004).

Neurotransmitters play important roles in regulating the body and brain. Dopamine is released in anticipation of reward and plays a crucial role in motivation and learning by encoding both positive and negative experiences, allowing the brain to adjust behavior based on outcomes (Bromberg-Martin et al., 2010). Serotonin supports mood balance and gut health. GABA is inhibitory and helps calm neural activity. Oxytocin promotes bonding, touch, and social connection by enhancing prosocial behavior toward individuals who are already trusted. When oxytocin is released in the presence of unfamiliar or negatively perceived individuals, it can increase defensive and protective behaviors, such as those seen in a parent safeguarding a child. Oxytocin's effects depend on the specific social context and the nature of existing relationships rather than universally promoting affiliation (Bartz et al., 2011).

Stress Response

When the stress response gets triggered, the body prepares for survival. The nervous system shifts into action, flooding the body with stress hormones, including cortisol. Heart rate and breathing speed up, muscles tense, and blood flow moves toward areas needed for quick physical action. The brain focuses on the threat, and digestion, reproduction, and other functions not essential for immediate survival slow down (Sapolsky, 2004; Chrousos, 2009; American Psychological Association, n.d.).



The human stress response evolved to protect us from physical threats. However, a significant number of modern stressors are interpersonal, and therefore our stress

response can be maladaptive for current societal stressors. As neuroscientist Robert Sapolsky explains, “We turn on the exact same stress-response as do those mammals running for their lives or running for a meal, and we turn it on for psychological reasons. And if that occurs often enough, our disease risk increases, because that is not what the stress-response evolved for” (Sapolsky, n.d., Lecture 1).

The nervous system is built to cycle between stress and restoration. Physical and emotional health issues arise when we do not spend enough time in restoration. Chronic stress during development shapes default protective responses based on environmental and interpersonal input, potentially creating lasting patterns of reactivity (Levine, 1997; Levine, 2010).

The survival responses fight, flight, freeze, collapse, and appease are exhibited by humans to cope with perceived threats. They are strategies that are unconsciously activated in the hope that threat can be managed or avoided. Recognizing and understanding these patterns is a useful step toward developing more prosocial coping strategies and fostering resilience (Levine, 1997; Levine, 2010).

The survival responses—fight, flight, freeze, collapse, and appease—are not separate from the stress response but are distinct behavioral patterns that express it. These responses are orchestrated by the autonomic nervous system, particularly the sympathetic branch, and are mediated by the hypothalamic-pituitary-adrenal (HPA) axis (Kozlowska et al., 2015). This system releases stress hormones such as adrenaline and cortisol, which prepare the body to respond to perceived threats. The specific behavioral outcome—whether to confront, flee, immobilize, submit, or appease—is influenced by individual factors, past experiences, and the context of the threat. The freeze response, for example, involves simultaneous activation of both sympathetic and parasympathetic systems, leading to a state of immobility despite heightened arousal (Schauer & Elbert, 2010).

The collapse response, characterized by physical shutdown or fainting, is a parasympathetic dominant reaction that occurs when neither fight nor flight is viable. The appease response involves submissive behaviors aimed at defusing conflict, often rooted in early interpersonal experiences or trauma. Understanding these responses as integrated components of the stress response system highlights the complexity of human reactions to threat and the importance of context in shaping adaptive behaviors (Kozlowska et al., 2015; Schauer & Elbert, 2010; Van der Kolk, 2014).

Prefrontal Cortex Amygdala Relationship

Under stress, the functioning of the prefrontal cortex diminishes, impairing our ability to regulate emotions, make decisions, and respond flexibly to challenges (Siegel, 2010). The prefrontal cortex supports key capacities that allow humans to navigate complex situations, including social skills, problem-solving, attention, adaptability, abstract thinking, risk assessment, emotional regulation, language production, working memory, emotional expression, creativity, and impulse control. As Sapolsky (2004) explains, “The frontal cortex makes you do the harder thing, when it’s the right thing to do.” This part of the brain allows individuals to pause, consider options, and choose actions that align with their values rather than acting on impulse. However, under conditions of stress, the amygdala—the part of the brain responsible for detecting threat—becomes more active, and this heightened amygdala activation can dominate brain functioning, further reducing the influence of the prefrontal cortex (Sapolsky, 2004).

The parts of the brain that get activated more often become stronger. “Neural circuits that are repeatedly activated become stronger and more efficient, while those that are not used tend to weaken and eventually disappear” (Siegel, 2010, p. 33). Chronic amygdala activation strengthens amygdala connections.

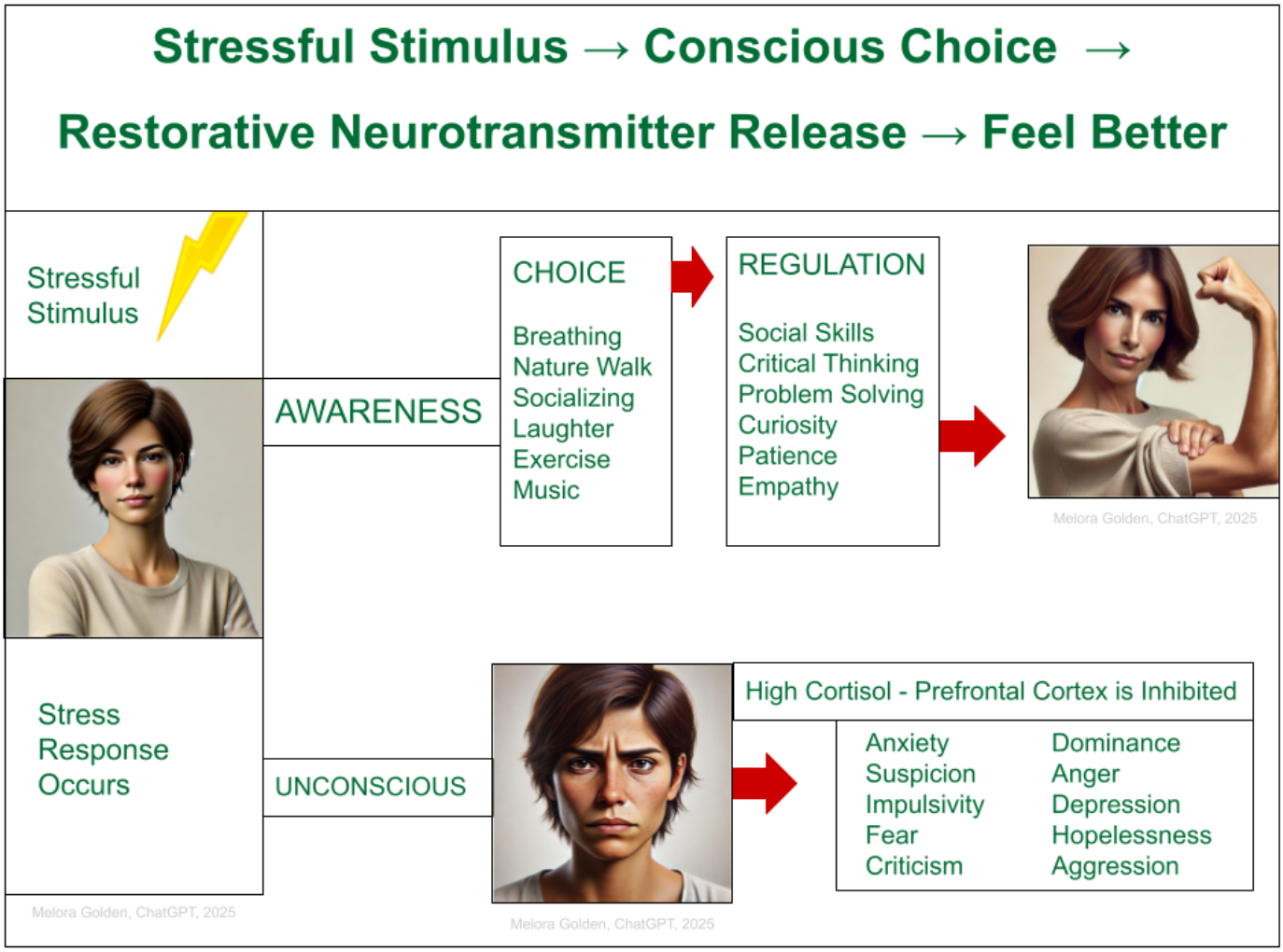
The amygdala and the prefrontal cortex have a special relationship. Stress shifts control away from the prefrontal cortex toward more reactive brain systems. As Sapolsky explains, “The prefrontal cortex… can regulate and inhibit the amygdala, but when you are stressed or emotionally aroused, the amygdala can override the prefrontal cortex” (Sapolsky, 2004).

By consciously engaging in nervous system restorative behaviors, we can reduce amygdala over-activation and support the dominance of the prefrontal cortex. “The brain is continually changing throughout life in response to experience, a process known as neuroplasticity” (Siegel, 2010, p. 4). This allows us to spend more time accessing the capacities of the prefrontal cortex and applying them to respond thoughtfully and effectively to this political moment.

Physiologically Transitioning from Stress to Restoration

Sapolsky states, “By altering which stimuli we attend to, we can influence which neurotransmitters are released” (Sapolsky, 2017, p. 277). Increased knowledge of nervous system responses improves ability to choose restorative behaviors that shift a person out of a reactive state and toward prosocial actions and improved complex problem-solving. This shift happens on a physiological level, changing the neurotransmitters that are circulating through the nervous system.

Nervous system awareness and restoration are both political acts and tools for collective care. It helps individuals move beyond suppression or antisocial discharge of stress and instead achieve true shifts in their nervous system state through conscious attention and intentional behavior.



Restoration Practices and Tool Kit Development

Building a more resilient and flexible nervous system is a lifelong practice. Fortunately all human cultures have created wonderful ways to feel good. Increased understanding of how stress feels in the body and the mind helps. Awareness of stress symptoms signals when to consciously engage in a discharge or restorative practice. The discharge and restorative practices in a resilience tool kit will vary by individual and culture. Individuals can identify the restorative practices that work best for them and begin to apply them consciously and with increased understanding that the choices made affect neurotransmitter release. Which in turn shapes emotional experience,

improves the functioning of the mind, and supports the ability to interact compassionately with others. These small, intentional actions over time, create meaningful change and greater capacity to meet challenges with the skills of the prefrontal cortex intact.

Begin to track how stress shows up in your body and in your thinking.
Learn your stress signals, awareness creates the possibility for choice.
Create your tool kit of restorative behavioral choices.
Develop your tool kit of discharging strategies. Sometimes we need to discharge anger or fear before we can regulate.
Tend to your attachment system—secure connection supports regulation.
Share and practice nervous system awareness with supportive communities.
This is a practice, every small act adds up.

Some Restorative Practices

Laughter
Exercise
Pets
Learning
Enjoyable food
Accomplishing goals
Hydration
Meditation
Taking a bath
Breathing practices
Walking
Prayer
Music
Massage
Helping others

Reading
Being creative
Community engagement
Friendship
Singing
Dance
Sensory self-care
Belly breathing
Awareness practices
Consensual touch
Deep sleep
Regular rest
Social engagement

Breathing

When possible, begin a breathing practice by breathing out first. Diaphragmatic breathing, often called belly breathing, uses the full range of your respiratory system by drawing air into the diaphragm rather than only into the chest. Practice inhaling slowly and having your exhale be slightly longer than the inhale. “Breathing practices can rapidly reduce stress by shifting autonomic balance toward parasympathetic dominance” (Brown & Gerbarg, 2005, p. 194).

In contrast, shallow chest breathing is associated with the sympathetic activation that's part of the stress response. Quick, high chest breaths commonly occur during states of threat and sympathetic nervous system activation, supporting the fight or flight response (Sapolsky, 2004). By shifting to slow diaphragmatic breaths, with each exhale lasting a beat or two longer than the inhale, you send a signal to the body that it is safe to move out of a stress response and into a calmer physiological state.

Practicing gentle belly breaths for even a few minutes creates a window for your body to move out of survival mode and into restoration. Over time, regularly engaging in these longer breathing cycles trains your nervous system to favor parasympathetic activation—so that, in moments of stress, you’ve already strengthened the pathways that bring you back to balance.

Discharging Survival Response Activation

Restorative practices that regulate the nervous system are great. Additionally, when gripped by the activation of a survival response it can help to discharge the activation energy before shifting to restoration. These survival responses, fight, flight, freeze, collapse, and appease shift control away from the prefrontal cortex toward more

reactive brain systems. "Trauma is not in the event itself but in the nervous system that becomes stuck in defensive activation" (Levine, 2010).

Discharging the activation that got triggered by a negative event decreases the chance that it will get stuck in the body and become trauma and can also be used to address existing trauma. Discharging helps restore access to prosocially useful brain functions, allowing us to act in alignment with our values and best interests. When possible, it's advisable to prioritize discharging and restoration before deciding how to respond to the event that triggered the stress and survival responses.

The information in the remainder of this section is informed by the discipline of Somatic Experiencing, developed by Peter Levine, attachment theory, and general somatic wellness practices that are widely used within trauma-informed and body-oriented therapeutic approaches.

Fight: the body prepares to **confront the threat** and energy mobilizes for defense.

- Through movement, visualization, or words therapeutically complete a defensive response to discharge activation. In our imagination it is OK to visualize a protective defensive response even when the visualization includes aggression towards another person. Imagining something or saying it in a therapeutic container doesn't mean we're going to act that way in real life. The process is intended for a specific physiological purpose and helps free the nervous system from cyclical surges of stressful neurotransmitter release.
- Slow physical movements allow the body to safely complete protective impulses like striking, pushing, or setting boundaries, which may not have been possible at the time of threat. Physical movements should be slow if possible, this helps the nervous system integrate the discharge (Levine, 1997).
- Visualizing a physical defensive response to harm is very useful as there are no physical limitations. A visualization can include whatever degree of defensive response is necessary to cycle out of the activation. Resources can also be added to visualizations to help restructure experience.
- It's also useful while either alone or with a trusted friend or therapist to say out loud and unedited what we would like to say to the person responsible for the harm (Levine, 1997).

- Orienting: the process of using the senses, such as seeing, hearing, smelling, and feeling, to take in the environment, helping the nervous system recognize safety in the present moment and shift out of survival states (Levine, 2010).
- Safe, physical activities and exercises can help release pent-up energy.
- Belly breathing while exhaling longer than inhaling can activate the parasympathetic (rest and digest) nervous system.
- Movement practices such as yoga, tai chi or martial arts can help discharge activation. This is particularly useful when coordinated with belly breathing.

Flight: The nervous system **prioritizes escape**. Focus narrows on exit strategies.

- Orienting engages the senses, such as seeing, hearing, smelling, and feeling, to take in the environment and reassure the nervous system that it is no longer in danger. This helps the nervous system recognize safety in the present moment and begin to shift out of survival states (Levine, 2010).
- Discharge through movement can help satisfy the urge to flee in a safe and contained way, allowing excess activation to be released from the body (Levine, 1997; Levine, 2010).
- Rhythmic activities like walking or cycling, ideally letting the eyes scan the distant landscape and the periphery.
- Sensory activities such as focusing on the feeling of feet on the ground or holding onto a textured object can anchor awareness in the present moment.
- Visualizations of expansive and safe places.
- Progressive muscle relaxation helps reduce tension by engaging and then very slowly releasing muscle groups.

Freeze: the system **becomes immobile**, often holding breath or reducing movement to avoid detection.

- Pendulation: the process of gently guiding attention between areas of the body that are activated or uncomfortable and areas that feel less bad, neutral, or good (Levine, 2010). This helps release restorative neurotransmitters and increases nervous system flexibility by alternating between different sensations. Experiencing this contrast of less activation, neutrality or even comfort begins to create a destination in a person's body. This destination, when returned to over time, becomes easier to access when needed.

- Orienting: the process of using the senses, such as seeing, hearing, smelling, and feeling, to take in the environment, helping the nervous system recognize safety in the present moment and shift out of survival states (Levine, 2010).
- Gently stimulating the senses, such as holding a warm cup of tea, helps reconnect with the body.
- Small movements, like gently moving the jaw or wiggling fingers or toes, can begin to soften the freeze response.
- Looking around and identifying safety cues can assist in re-engaging with the present.
- Connecting with a trusted person for a low-stakes activity can provide co-regulation and help calm the nervous system.
- Verbalizing thoughts and feelings alone or to a safe person.

Collapse: the body shuts down into a **state of helplessness**, often due to prolonged or overwhelming threat.

- Therapeutic support can assist in safely exploring and processing recovery options.
- Titration and resource building support safe reactivation of energy. Titration helps prevent overwhelm by working with small amounts of activation at a time. Resource building provides inner or outer anchors of safety to stabilize the system as it begins to recover from shut down (Levine, 2010).
- Engaging in mild activities such as slow movement can gently move life force energy through the system.

Appease: The nervous system seeks safety by **deferring to other people's needs**. People may fawn, over-agree, or suppress personal needs to avoid or de-escalate conflict or gain favor with a perceived threat.

- Attachment system work to address patterns that contribute to appeasing behaviors.
- Self-compassion practices support non-judgmental awareness of personal feelings and needs.
- Journaling can help strengthen self-awareness of personal needs and desires.
- Strengthening awareness of internal cues of safety and self-support thus helping reduce the compulsion to over-focus on others' needs or seek safety through appeasement.
- Practicing saying no in low-stakes situations builds confidence in setting boundaries.

Conclusion

Building movements and institutions that support nervous system health and collective care strengthens the campaign against systemic oppression. Prosocial behaviors, including regulation and co-regulation, create the conditions for collaboration, empathy, and resilience. Sapolsky identifies that “vagal tone, oxytocin, and positive social modeling can shift us out of the fear-driven state and into a state of relational openness” (Sapolsky, 2017, p. 593). A regulated nervous system supports prosocial behavior. “It’s not about nature versus nurture—it’s about what nurtures our nature” (Sapolsky, 2017, p. 627).

It is very helpful to cycle out of stress and into restoration on a regular basis. This improves individual health, group dynamics, working conditions, and reinforces our connection to our prefrontal cortex and its powerful functions. Cycling out of stress into restoration is accomplished by regularly engaging in the restorative practices that human culture has created. Literally doing the good stuff keeps us strong. Acting prosocially creates more safety in the world and in activist communities. Increasing interpersonal emotional security and deepening relationships creates a strong foundation for strategic action that will effectively disrupt oppression and forge a compassionate, creative global culture.

Video Links

Basic neurobiology playlist: https://www.youtube.com/playlist?list=PLG_DMo8UWe5P2S2nN3UsJHzsQMdMmtWxl

Neurotransmitters playlist: https://youtube.com/playlist?list=PLG_DMo8UWe5N-1hGGfpEvI3eZ4SkylKDX&feature=shared

School House Rock nervous system video: https://www.youtube.com/watch?v=ivk_irrH1WY

Flight Freeze Response: https://www.youtube.com/watch?v=jEHwB1PG_-Q

Dan Siegel attention and neuroplasticity: https://www.youtube.com/watch?v=PkLUia6csIM

Robert Sapolsky prefrontal cortex amygdala relationship: https://www.youtube.com/watch?v=7htlm3DQ_so&list=PLG_DMo8UWe5OoqQcgXNWt1qWIycLcOrQf&index=7

Andrew Huberman neuroplasticity video: https://www.youtube.com/watch?v=BCV8PCU8YGM

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