

THE AUTONOMIC NERVOUS SYSTEM AND "WINDOW OF TOLERANCE"

The Autonomic Nervous System (ANS) is part of our Peripheral Nervous System, which connects the brain and spinal cord to the rest of the body. The ANS controls internal body processes such as blood pressure, heart and breathing rates, body temperature, digestion, metabolism, and more. Its job is to scan the internal and external environment for cues of safety or danger, and act in the service of our survival by stimulating a defensive response if needed to keep us safe.

The ANS is broken up into 3 sections: the Sympathetic, Parasympathetic, and Enteric Nervous systems. The enteric nervous system regulates digestive processes and communicates with the Sympathetic and Parasympathetic systems. The sympathetic and parasympathetic sides work together but with opposing responses, and help maintain homeostasis in our bodies. Our Focus here is on the Sympathetic and Parasympathetic responses.

When the ANS senses a perceived or real threat, the Sympathetic or “fight or flight” defense response is activated. We become physiologically “hyper-aroused”, activated, or mobilized, like pushing the “gas pedal” in a car. Our response is to flee or fight. The Vagus Nerve connects the brainstem to the body; through neuroception, a term coined by Dr. Stephen Porges, it assesses the safety of a situation and the mood of those around you. Once there is a sense of safety, or if the danger went away or we come to realize we were not actually in danger, the Parasympathetic side (the “brake”, or “rest, digest, and repair” system, made up primarily of the vagus nerve) balances us back out, and we calm down and move on.

Our nervous system responds not just to external physical threats, but also internal ones like physical issues, thoughts, and emotions. Even without external threats, when daily stressors are prolonged or repetitive, we often do not have time to rebalance and can become mentally and physically unwell. When we remain in a heightened state, often feeling we cannot escape, the brain interprets the situation as hopeless and causes us to “freeze” and ultimately shut down, or collapse. We go from hyper- to hypo-aroused, which is the parasympathetic system on overdrive; like slamming the brakes instead of pressing them slowly.

The following diagram comes from Dan Siegel’s term “Window of Tolerance”, which refers to our optimal zone of functioning. When in our Window, we can take in information from our environment and respond to it well, without withdrawing or feeling overwhelmed. We are best able to manage our emotions, deal with daily tasks and stressors, and engage with others. The diagram outlines the types of responses we may have in each state, so you can begin to better recognize your current state and respond in a healthy way. The Window is flexible, in that we can take care of our needs and use healthy coping skills to keep it nice and wide; this allows us to manage most things while remaining balanced. However, if stressors overwhelm us and cause our window to narrow, many things will feel unmanageable.

Knowing our autonomic state, we can assess what skills may help us get regulated, or back into our Window. When in a heightened state, doing things to calm ourselves would be helpful. When we are shut down, doing something to energize or activate would help to get the nervous system back “online”.

For a similar approach, please see Dr. Stephen Porges' Polyvagal Theory work. He is a master at helping people see: Our nervous systems do not tell us WHO we are or WHAT we are, but HOW we are!

For more details about these concepts and information on healthy coping skills to widen your window, sign up for the Mindfulness and Meditation for Wellness or Proactive Pain Relief Courses at drmelissacarris.com.



HYPERAROUSAL

Sympathetic Nervous System ("fight or flight")

emotional, cognitive, and behavioral symptoms

- diminished capacity to socially engage / not "present"
- difficulty concentrating / focused on "threat"
- out of control / impulsive / overwhelmed / flooded
- anxiety / panic / fear / anger / rage / poor judgment
- hypervigilance
- racing thoughts / rigid or chaotic thinking
- intrusive imagery / flashbacks / nightmares



physiological symptoms

- body prepares to fight or flee
- adrenaline, cortisol, etc. are secreted
- increased breathing, heart rate, blood pressure
- muscle tension / sweating / pupils dilate
- increased oxygen and blood to muscles, heart, and other vital organs
- sleep disruption
- suppressed digestive & immune systems

WINDOW OF TOLERANCE (optimal arousal zone; "rest, digest, repair, social engagement")

Parasympathetic Nervous System - ventral vagal response

emotional, cognitive, and behavioral symptoms

- emotionally regulated (access to full range of emotions)
- present moment awareness
- managing stressors well / can self-soothe
- feel safe, open, curious, relaxed, calm, and alert
- intuition / insight / can feel and think simultaneously
- can integrate information and make decisions calmly
- socially engaged / connected / feel empathy
- manage work & relationships well



physiological symptoms

- heart rate and blood pressure are regulated
- circulation in non-vital organs
- normal breathing
- muscle tone more relaxed
- digestion and immune system are functioning
- body can repair and heal

HYPOAROUSAL ("freeze" or "shut down")

Parasympathetic Nervous System - dorsal vagal response

emotional, cognitive, and behavioral symptoms

- blunted emotions / relative absence of sensation
- flat affect / depression / shut-down / numb / empty
- passive / withdrawn / disconnected
- shame / embarrassment
- hopelessness / helplessness
- loss of interest / minimal energy
- slow thinking / memory loss / "blank"
- spacey / zoned out / dissociative / not present



physiological symptoms

- exhaustion / collapse / shut down
- feel numb / go limp / faint
- decreased heart rate and blood flow
- diminished muscle tone and facial expression
- senses shut down
- increased storage of fuel
- increase in pain reducing endorphins/analgesia
- feeling "paralyzed" (freeze = physically immobilized but still hyperaroused inside)



HOW STRESSORS AND COPING IMPACT OUR WINDOW OF TOLERANCE

HYPERAROUSAL



Stressors can shrink our Window of Tolerance

WINDOW OF TOLERANCE

It is difficult to stay regulated within such a narrow window



Stressors can shrink our Window of Tolerance



HYPOAROUSAL

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WINDOW OF TOLERANCE

Healthy coping skills widen our window and keep us regulated



HYPOAROUSAL



Melissa Carris, Ph.D.
— drmelissacarris.com —

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