Wisdom Body ACADEMY

Resilient Roots

Trauma-Informed Training

THE NERVOUS SYSTEM AND TRAUMA

Trauma is held in the nervous system where it can change how the brain processes emotions, senses, and memories. To understand trauma, we must look at the function of the nervous system and how it's designed to help us respond immediately to novelty and threat, *without having to think* about it first - and how this means trauma responses are automatic and below the level of conscious awareness.

Because trauma happens initially on the level of an overwhelmed nervous system, it's important to understand:

1. how the nervous system works,
2. how to build resilience against, and heal from, trauma on a nervous system level.

In this manual we'll explore the first point by mapping nervous system physiology, outlining the sympathetic and parasympathetic branches, the fight, flight, freeze, fawn and safe and social responses (and how to recognise them), the window of tolerance, and how experiences become memories and programmed responses in the automatic behaviours of the nervous system.

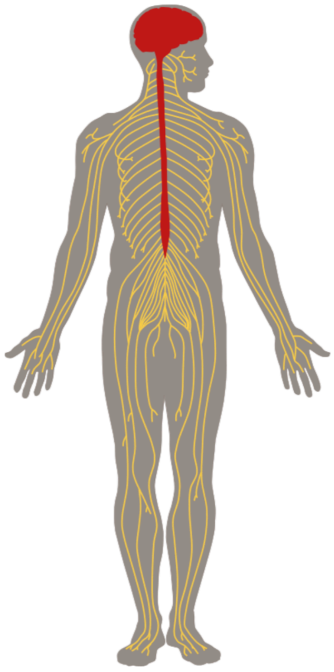
What is the Nervous System?

The Nervous system is a network of nerves that receives, interprets and responds to stimuli from inside and outside the body.

IT CONSISTS OF:

- the Central Branch - brain and spinal column - (shown in Fig 2a in red), and

- the Periphery Branch which includes the Somatic voluntary motor system and the *Autonomic Nervous System* (ANS) - (shown in fig 2a in yellow).



A map of the nervous system - Fig 2a

>> *The branch that we are most interested in is the Periphery branch particularly the Autonomic Nervous System as it is responsible for regulating involuntary (automatic) body functions, such as:*

Ø heartbeat,
Ø blood flow,
Ø defecation,
Ø sexual response,
Ø the balance of water and electrolytes,
Ø breathing and digestion,
Ø body temperature, and
Ø production of body fluids (saliva, sweat, and tears), and urination.

Without the ANS, we would need to consciously make our heart beat, our lungs breathe and our skin sweat to cool us down. The ANS makes it unconscious and automatic and reduces the amount of energy and effort needed to run those systems.

Inside the ANS, we have the Sympathetic and Parasympathetic functions:

Sympathetic branch/Accelerator

- Fight
- Flight
"Get up and "do" something"

Parasympathetic branch/Brake

- Freeze (dorsal vagal)
- Safe and Social (ventral vagal)
"Take the parachute down"

A HEALTHY nervous system moves FLEXIBLY between these branches of acceleration and brake (see Fig. 2b), in charge of maintaining a relatively even balance between mobilisation and relaxation.

A Healthy Nervous System

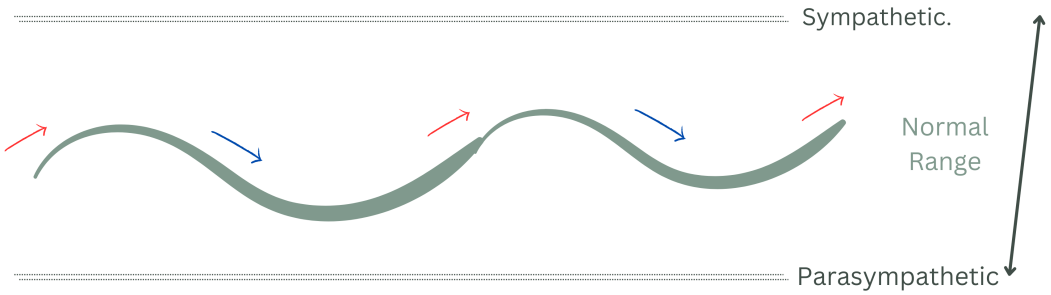


Fig 2b

A dysregulated/traumatised nervous system moves INFLEXIBLY between these two branches, getting stuck in states of activation or shutdown (see Fig. 2c). The “thermostat” in a

traumatised nervous system is stuck on or off, or is not reliably turning on or off when needed.

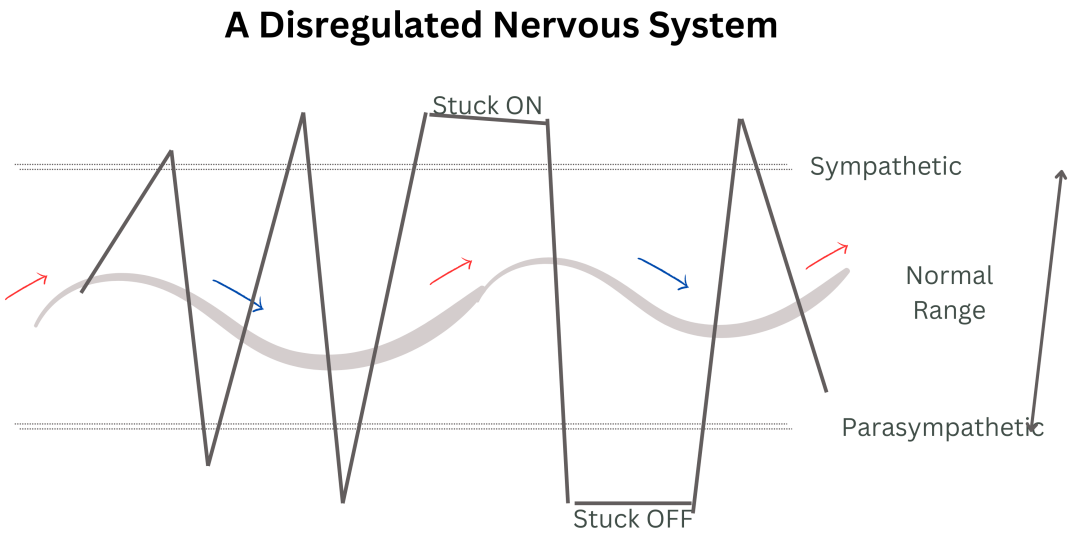


Fig. 2c

So, how does an experience become trauma and automatic behaviours?

LET'S LOOK MORE AT THE SEQUENCE OF THINGS...

The nervous system receives information (from fingertips, eyes, ears, gut or skin) and sends it along nerve fibres to the hypothalamus deep in the brain, which sends signals to the endocrine system to create hormones to help you respond (such as dopamine, oxytocin, adrenaline etc).

This creates the fuel for you to respond with relaxation, opening (parasympathetic), and tightening in muscles, ligaments (sympathetic) etc. as the perception of safety or threat requires.

💡 The messages from the nervous system go First to the brainstem so your body can respond quickly with appropriate (life-affirming) responses.

💡 Because we need to be able to fight/ flight or freeze IMMEDIATELY, your brainstem or "animal brain" holds programming for How to respond quickly, *without involving the neo-cortex (see Fig. 2d)*.

Without having to think it through.

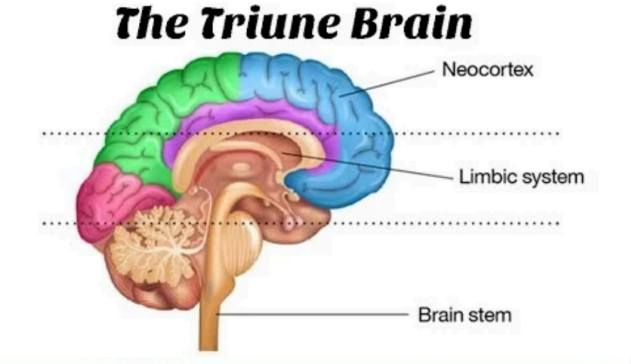


Fig. 2d

The more strongly charged or repetitive an event in your client's past, the more "chemical load" their brain will give to your client's response.

This can translate into Lots of adrenaline flooding the body every time they see a dog (if your client has been bitten several times), v's having a small spike in adrenaline and readiness to respond (if your client has never been bitten or scared by a dog).

This is significant for your work with clients (and their repeating feelings, thoughts and behaviours) because a lot of your clients' procedural responses (the sequence of what to do -when) arise out of the automatic programming in the ANS.

Ø All the times your client successfully or unsuccessfully survived a threat,
Ø All the times they had a triumphant event,
Ø As well as the epigenetics/DNA memories from their ancestors' triumph and times of threat.

... All of this is held in the automatic programming in the brain .. and Can't be accessed purely through thinking or talking about the thing/s.

Do you want to read that again?

This is going to be very important if you are working with supporting clients to change automatic behaviours they have had for a long time, and if you are creating trauma-informed processes. Simply describing or talking about their feelings or experiences won't help the level of their automatic reactions and responses.

TYPES OF MEMORY

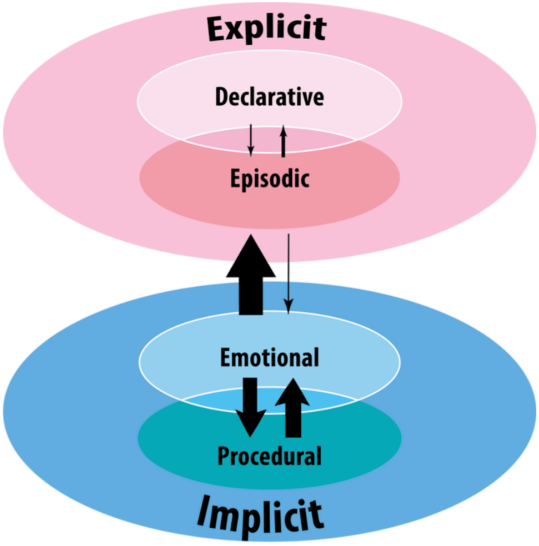


Fig. 2e

It's helpful to understand the nature of memory when an experience has not been processed with our explicit understanding.
Peter Levine's work with memory divides what we "know" (explicit) and what is subconscious (implicit).

Explicit
- we can describe the event,
- have conscious awareness,
- have knowledge and concepts about it,
- "I remember that"

Implicit
- we have procedural skills and actions,
- emotional conditioning,
- body actions and memories,

As we process implicit memory it naturally moves into explicit.. meaning and sense arise out of the body.

🔑 Because trauma goes into the pre-cognitive and procedural parts of the brain, it can often be to some degree implicit/ not consciously known.

💡So, to understand the nervous system and how to access implicit memory better - (so we can support clients to experience more flexibility and release from trauma) - we need to learn to read the language of the nervous system and its stuck, repetitive or frozen states.
We need to go deeper into the signs and symptoms of different nervous system states.

HOW TO RECOGNISE Nervous System States

The Sympathetic / Accelerator Branch

This branch influences breathing, heart rate, blood flow, blood pressure, supports regulation of body temperature and *primes for action and mobilises for fight/flight.*
When more extreme, the energy is disorganised, chaotic and overwhelming. Your client looks and listens for sounds of danger and misses cues of safety.

FIGHT RESPONSE: Motivated, crisis, stress, hate. Anger, explosion, rage, strength, solidness, power, or collapse and absence/ inability to fight.

FIGHT

Fig. 2f

Signs are: Fast heart rate, alert eyes, muscle bracing/ pain, guts shut down, and louder or faster voice.

Fight is a boundary maker. It's also related to DESIRE.
We can Fight for what we want. Fight for our life force against inertia. Fight with passion.

Fight = getting bigger showing strength or size, it wants to be heard, felt and known. It's often felt/seen in the hands, legs, eyes and jaw.

FLIGHT RESPONSE:

Escape, fear, anxiety, legs. It might want to be invisible, unseen, unknown. "Gone!"

FLIGHT

Fig. 2g

Often includes a turning away of the head and neck (orienting to escape), and lots of "electricity" feelings in the legs.

The Flight response is our ability to leave rather than engaging socially, fighting or shutting down.

The Parasympathetic Settling/ Shutdown Branch:

Divided into Safe and Social (Ventral vagal) And Freeze/shutdown (dorsal vagal). This branch is in charge of bringing activation down, into rest and digest mode, or into energy preservation and shutdown.

FREEZE (Dorsal vagal shutdown) RESPONSE

FREEZE

Fig. 2h

"Life -threat." When we're in a freeze response we move out of connection, and into collapse.

Signs are shame, grief, confusion, and numbness. Collapse, shut-down, floating, lost, alone, abandoned, memory loss, hopeless. Disassociation, going through the motions, safety and hope feel unreachable

Slow heart rate, cold, low skin tone, downwards gaze, stillness, higher pain tolerance.
The body enters conservation mode: Numb, foggy, fuzzy, low motivation, fainting.

SAFE AND SOCIAL (Ventral Vagal rest/digest) RESPONSE

SAFE & SOCIAL

Fig. 2i

This is a myelinated vagus nerve. A cranial nervous system - beginning in the brain. It forms a biological face/heart connection and is the "rest, digest and integrate" branch of the nervous system.

Signs are Healthy homeostasis.
The ability to co-regulate and self-regulate, conversational, mindfulness, safe touch and intimacy. Reach out and offer support
Tune into the moment and tune out distraction

Compassion, flexibility and resilience. Problem-solving,
Joy, hope, awe, connection, curiosity
Soft expressive gaze, open body language more vocal range, hearing tuned to human voices.

FAWN RESPONSE

FAWN

Fig. 2j

Fawn is a mixed state of fight/flight (mobilizing to respond to threat) and freeze (shutting down in the face of threat).

The fawn response is a behaviour designed to create safety by pleasing the people we are relating with.
Signs are incongruent face, body or voice signals with stated desires. Low preference, high adaptability and pleasantness. Denial of own needs or reality. Poor boundaries, and poor self-care when feeling threatened or unsafe. Disconnected from own wants and desires. Often reporting exhaustion and overwhelm in caregiving roles.

The priority of someone in a fawn response is to use relationships to create safety, not to discover their desires, needs etc, and not to individuate.

Each of these nervous system responses is a necessary option for response to life.

They are not a hierarchy of good and bad. We need the capacity to activate and mobilise, to settle or hide as appropriate. Trauma happens when we get stuck in one of these responses. So we also need to be able to come out of these states and register safety and the passage of time, and rest, digest and integrate.

THE WINDOW OF TOLERANCE

This is a theory developed by Dan Seigal "to describe the optimal zone of "arousal" for a person to function in everyday life"[1] and helps us to understand the limits to a person's experience and capacity when they are carrying trauma.

When we are inside our window of tolerance, we can deal with whatever is happening in our lives.

Stress might happen but we can stretch and move with it. And return relatively quickly back to balance (see Fig. 2k)

Trauma reduces our window of tolerance (capacity to respond to novelty, stress and stimuli in life) and sends us more quickly into hyperarousal (anxiety, anger, overwhelm) or hypo arousal (spacey, zoned out, numb, frozen) (see Fig. 2L).

When we're outside our window of tolerance we can get stuck, often bouncing between hyper and hypo arousal as the body tries to find equilibrium.

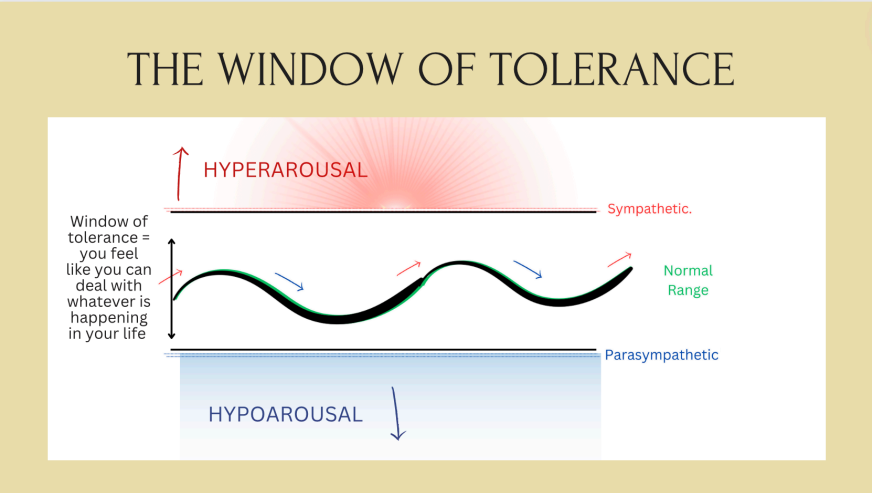


Fig. 2k

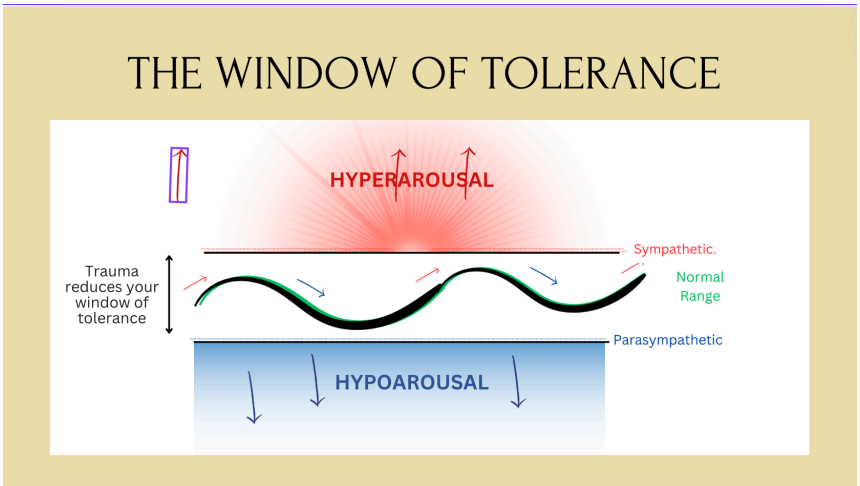


Fig. 2L

[1] https://www.nicabm.com/trauma-how-to-help-your-clients-understand-their-window-of-tolerance/

Doing work with a trauma therapist and spending time in trauma-informed processes learning self-regulation, building a sense of internal safety and discharging accumulated trauma can expand a person's window of tolerance, flexibility and well-being in life.

THE NERVOUS SYSTEM LADDER

The nervous system ladder gives us a visual map of the stages of response to threat or trauma. When we subconsciously somatically perceive danger, we drop down this ladder.. safe and social connection to flight (ready to run, feeling anxious) or fight (getting angry, making boundaries, getting big to scare the other away), to freeze or shut down (see Fig. 2m).

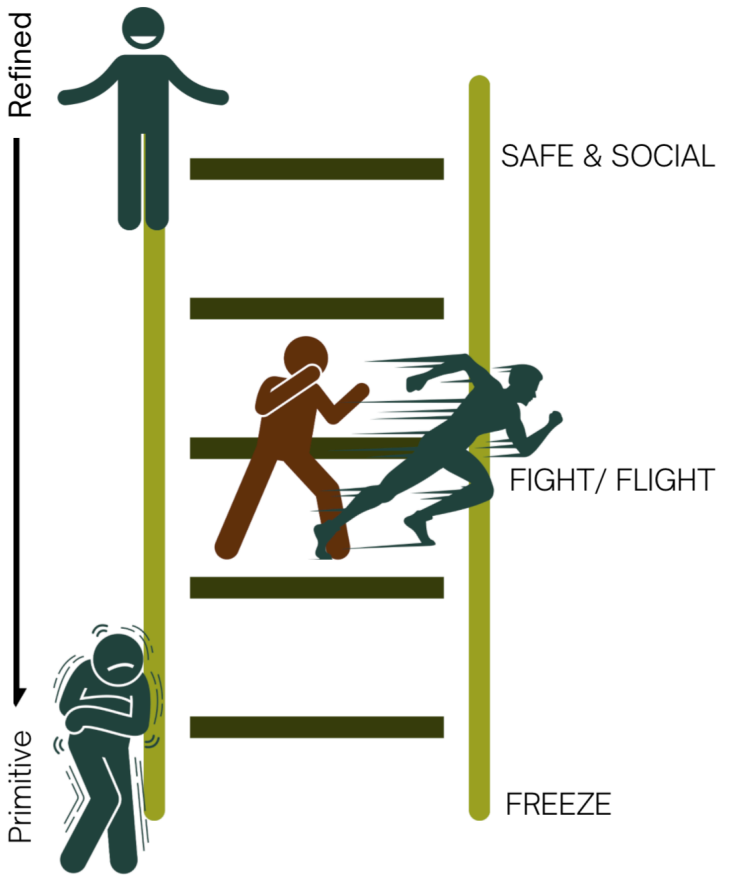


Fig. 2m

We use the nervous system ladder to help our clients move from being stuck into the next natural nervous system state.

"When threat is past, mammals naturally move back up the ladder by shaking off survival energy" - Trauma Geek

For example, when coming UP the nervous system ladder, a client may move from:

> Freeze - Numb cold, (no feeling, low energy) "I'm fine.. but vague and floaty" to

> Flight - agitation in the legs and a desire to get away from the sensations or feelings of energy/electricity, to
Shaking or trembling in the legs, to

> Safe & Social - a big sigh as the shoulders drop, the eyes becoming warm and connecting as the client looks around the room available for what's next.

THE DEVELOPMENT OF THE NERVOUS SYSTEM

(and why this is important when working in a trauma-informed way)

In childhood, we are like sponges to our environment.

We've established that the nervous system governs HOW we respond to the world,

The nervous system is also one of the first systems to develop in the womb,

- If the mum is stressed during pregnancy, the baby will develop strong sympathetic pathways in the brain.
- If mum is relaxed, the baby will develop strong parasympathetic pathways

Evolutionary biology prepares a baby for the world they will be born into by developing the pathways that mum has been using during pregnancy.
The nervous system continues to learn and lay down procedural, programmed responses to stress, trauma or pleasure based on how the child's caregivers model these things and how their fundamental developmental needs are met or missed.

Because the neocortex doesn't finish growing until 21-23 years old, these programmed responses are held in pre-cognitive, instinctive, and automatic responses in the nervous system. That is, they become automatic and unquestioned - until a person makes them conscious and chooses otherwise.

All of this is to say, the developing nervous system and much of our core patterns, programming and wounds are held in the hindbrain, which speaks in the language of image, sensation, behaviour and affect, rather than meaning or cognition.

Early developmental trauma (abuse or neglect) can have a fundamental effect on the operating system of a person.

- Making the window of tolerance smaller,
- Their capacity to self-soothe and self-regulate is more based on management behaviours (than genuine regulation on a nervous system level).

A trauma-informed practitioner needs to understand the different challenges of someone with developmental trauma. With skilful means and compassionate support, these challenges can be met and the window of tolerance expanded for a more embodied and safe experience.