# POLYVAGAL THEORY **KEY TERMS**

**Autonomic Nervous System:**
- Controls involuntary actions, like the beating of your heart, the widening or narrowing of blood vessels, body temperature, & digestion.
- Is one of the major neural pathways activated by stress.
- It influences the activity of most tissues and organ systems in the body & plays a crucial role in the maintenance of homeostasis.
- It has three branches: sympathetic, parasympathetic, and enteric.

**The Vagus Nerve:**
- Is the 10th cranial nerve and longest, most complex nerve in the body.
- Connects the lower part of the brain to the neck, chest, and abdomen and is the longest and most complex of all the 12 pairs of cranial nerves.
- Makes up the main nerves of the parasympathetic nervous system.
- Acts as a major bidirectional communication pathway between the central nervous system & the body.
- Plays a central role in governing mind-body interactions that have immune, endocrine, neuro-cognitive, & affective effects.
- Stimulating the vagus nerve stimulates the parasympathetic nervous system, which reduces our neurophysiological experience of stress. It reduces our heart rate and blood pressure.
- It influences the limbic system in our brain, where emotions are processed.

**Sympathetic Nervous System:**
- The sympathetic nervous system responds to dangerous or stressful situations. In these situations, it speeds up your heart rate, delivers more blood to areas of your body that need more oxygen to help you get out of danger.
- It controls "fight or flight" response, meaning this system prepares the body for strenuous physical activity.
- It is commonly referred to as having "thoracolumbar outflow".

**Parasympathetic Nervous System:**
- The parasympathetic system relaxes your body after periods of stress or danger and runs life-sustaining processes when you feel safe and relaxed.
- It regulates "rest and digest" functions, meaning this system controls basic bodily functions like digestion, urination, sexual arousal, while one is relaxing.
- When it is activated, it slows our heart and breathing rates, lowers blood pressure and promotes digestion.
- It is commonly referred to as having "craniosacral outflow".

**Co-Regulation:**
- Co-regulation lies at the heart of all human relationships.
- It is the reciprocal sending and receiving of signals of safety.
- It is not merely the absence of danger but connection between two nervous systems: each nourishing and regulating the other in the process.
- Feeling secure begins deep within our autonomic nervous system.
- When safety is detected, our nervous system works to calm us.
- Interacting with a person whom you trust deeply, creates a safe environment.

**Interoception:**
- Referred to as our 6th sense.
- Allows us to become aware of our instinctual responses to our environment.
- Involves sensory perceptions from inside your body, such as changes in temperature, tension, or pain.
- These sensations give you feedback about whether you are hungry, thirsty, unwell, or sleepy. Interoception also helps you recognize when you are feeling emotions.
- Interoceptors are the sensory receptors located in the heart, stomach, liver, intestines, and other organs in the body.
- Interoceptive feedback is communicated to the brain via the vagus nerve.
- Paying attention to state of the nervous system assists in discerning whether the response we are having is an accurate reflection of our circumstances.

**Neuroception:**

- The innate ability of the nervous system to detect whether situations or people are safe, dangerous, or life threatening.
- We are wired to respond to cues of threat in our environment, and that this occurs without conscious awareness.
- Neuroception takes place in the primitive parts of our brain without our conscious awareness of it happening.
- Reacting to threats can lead to a buildup of irritability, restlessness, or anxiety; yet we might not be aware of the cause of these feelings.
- This undercurrent of activation can impact our ability to rest, digest, or sleep.
- We might find these cues in the voice tone, body language, or facial expressions of other people. At times, we might also be responding to internal bodily sensations which can sometimes lead to a vicious cycle of increasing anxiety.

**Ventral Vagal:**

- The "Rest and digest" response of the parasympathetic system, is also known as a ventral vagal state.
- In a ventral vagal state, we are grounded, mindful, joyful, curious, empathetic, and compassionate.
- This is the state of social engagement, where we are connected to ourselves and the world.
- It is a state of safety and homeostasis.
- Physiologically, digestion, resistance to infection, circulation, immune responses, and our ability to connect is improved.

**Sympathetic:**

- In a sympathetic state we are in a state of "fight and flight" which is a survival strategy.
- Fight response may look like anger, rage, irritation, and frustration.
- Flight response may look like anxiety, worry, fear, and panic.
- Physiologically, our blood pressure, heart rate, and adrenaline increase, and it decreases digestion, pain threshold, and immune responses.

**Dorsal Vagal:**

- In a dorsal vagal state, we are completely shut down and may feel hopeless or like there's no way out.
- Our dorsal vagal state is referred to as our "freeze" state, which is our most primitive pattern, and this is also referred to as our emergency state.
- We are completely shut down and may feel hopeless or like there's no way out.
- Tendencies towards depression, dissociation, and overwhelm are common.
- Physiologically, our fuel storage and insulin activity increases and our pain thresholds increase.

**Fight-or-Flight: A State of Hyperarousal:**

- State of dysregulation of the autonomic nervous system.
- The immediate physiological reaction that occurs when danger or a threat to survival is perceived.
- Involves a series of neural and physiological mechanisms that rapidly activate the body to confront the threat (fight) or to escape it (flight).
- It is an adaptive instinct that developed when predators or environmental stimuli threatened one's survival.
- Many of the anxiety-provoking situations of today do not threaten people's physical survival and in these situations, the fight-or-flight response can be maladaptive.
- Frequent and chronic activation of the fight-or-flight response can cause feelings of irritability, tension, anxiety, defensive, or anger and recurrent physiological issues, like disrupted sleep and eating patterns.

**Freeze: A State of Hypoarousal:**

- State of dysregulation of the autonomic nervous system.
- This response involves being rendered immobile when confronted with a potential threat.
- Hypoarousal may cause feelings of emotional numbness, emptiness, depression, or paralysis.
- Hypoarousal can occur when: we have too much hyperarousal, surpassing the level of overwhelm our brain/body is able to tolerate.
- In this state we may feel stuck in a state of shut down or dissociation.
- In this state we may have increased sleep, decreased, appetite, and feel deadened inside.