



The Vagus Nerve & PolyVagal Theory

Part of the autonomic nervous system, the **Vagus Nerve** is the tenth cranial nerve, the longest nerve in the body, and originates in the brain ending at the rectum. It travels down the from the top of the head, through the neck and then passes around the heart and lungs, then to the stomach, liver, spleen, kidney, pancreas, and intestinal system. This nerve is the primary nerve in the parasympathetic division (“rest and digest”) in the autonomic nervous system. Stimulating this nerve **disrupts patterns** of sympathetic communication between the nervous system and the body, promoting rest and recovery.

VAGAL TONE

The tone of the vagus nerve is key to activating the parasympathetic nervous system. Vagal tone is measured by tracking your heart-rate alongside your breathing rate. Your heart-rate speeds up a little when you breathe in, and slows down a little when you breathe out. The bigger the difference between your inhalation heart-rate and your exhalation heart-rate, the higher your vagal tone. Higher vagal tone means that your body can relax faster after stress.

ASSOCIATED WITH:

- Better mood and more stress resilience
- Improved body systems function, including digestion
- Improved blood sugar regulation
- Reduced risk of stroke and cardiovascular disease and lowered blood pressure

INCREASING VAGAL TONE

1. **Slow, rhythmic, diaphragmatic breathing:** deep breathes to the bottom of the lungs activating the diaphragm and toning the vagus nerve.
2. **Valsalva Maneuver:** The attempt to exhale against a closed airway, it can be done by closing mouth, pinching nose, and trying to breathe out.
3. **Engage Sense of Smell:** Using Essential oils that bring a positive association, feeling or are known to uplift mood.
4. **Humming/Speaking/Singing:** The vagus nerve is connected to the vocal cords so humming, speaking or singing stimulates it.
5. **Diver’s Response:** Cold water on your face (from lips to scalp line) stimulates the diver’s reflex and therefore stimulates the vagus nerve.
6. **Meditation/Mindfulness:** Focusing on the present moment and increasing positive emotions through meditation
7. **“Tapping” or EFT:** This technique uses “tapping” on the acupressure point below the collarbone stimulates the vagus nerve.
8. **Balancing the gut microbiome:** Healthy bacteria in the gut creates a positive feedback loop through the vagus nerve, increasing its tone.
9. **Creative Play:** Engaging in creativity and play can invoke a playfulness that relaxes the body and mind.
10. **Connection:** Reaching out can initiate regulation of our body and mind.

POLYVAGAL THEORY

- Identifies the relationship between visceral experiences and the vagus nerve’s parasympathetic control of the heart, lungs, and digestive tract.
- Developed by Dr. Stephen Porges in 1994.
- Translated for use in mental health/treatment with Dr. B. Van Der Kolk.
- Offers a valuable framework for understanding and effectively responding to the intense emotional and physiological symptoms of PTSD.

USEFUL TERMS & DEFINITIONS USED IN POLYVAGAL

1. **Social Engagement System:** A two-way interaction system (receptive and expressive) based mainly in the eyes, ears, larynx, and mouth, but incorporating the entire face and the torso above the diaphragm. All twelve cranial nerves participate in the social and expressive functions.
2. **Biological Rudeness:** The evolved anticipation of reciprocity from others that allows the social engagement system to down-regulate. When this neural expectancy is violated, by either a neglect of the engagement cues or a hostile reaction, there is an immediate and massive shift in the autonomic nervous system to a state that supports defense. This violation frequently promotes an emotional response of being hurt and a personal narrative of being offended. It is a cascade, which starts with lack of reciprocity to a spontaneous social engagement that triggers an autonomic state of defense and ends with an emotional response of being offended that may lead to an aggressive reaction.
3. **Self-Regulation:** A product of the nervous system that can maintain feelings of safety in the absence of receiving cues of safety from another person.
4. **Neuroception:** The process which the nervous system evaluates risk without requiring awareness, evaluating safety, danger, and life threat.
5. **Introception:** The process describing both conscious feelings and unconscious monitoring of bodily processes by the nervous system.