

Vagus Nerve Stimulation

The vagus nerve represents a crucial aspect of parasympathetic nervous system, which oversees a number of crucial bodily functions, involving mood, immune response, digestion, and heart rate. There is preliminary evidence that vagus nerve stimulation is a promising add-on treatment for treatment-refractory depression, posttraumatic stress disorder, and inflammatory bowel disease. Vagal tone is correlated with an increased capacity to regulate stress responses and may contribute to resilience and the improvement of mood and anxiety symptoms.

Humming, Singing and Chanting: The vagus nerve passes through by the vocal cords and the inner ear and the vibrations of humming, singing, and mantra chanting are a free and easy way to influence your nervous system states. Essentially, singing and humming are like initiating a vagal pump, sending out relaxing waves. Singing at the top of your lungs works the muscles in the back of the throat to activate the vagus. Singing in unison, which is often done in churches and synagogues, also increases vagus function. Try to notice and enjoy the sensations in your chest, throat, and head and you engage in humming, singing or chanting.

Conscious Breathing: The breath is one of the fastest ways to influence our nervous system state. The aim is to move the belly and diaphragm with the breath and to slow down your breathing. Vagus nerve stimulation occurs when the breath is slowed from our typical 10-14 breaths per minute to 5-7 breaths per minute. You can achieve this by counting the inhalation to 5, hold briefly, and exhale to a count of 10. You can further stimulate the vagus nerve by creating a slight constriction at the back of the throat and creating an “hhh”. Breathe like you are trying to fog a mirror to create the feeling in the throat but inhale and exhale out of the nose sound (in yoga this is called Ujjayi pranayam).

Valsalva Maneuver: This complicated name refers to a process of attempting to exhale against a closed airway. You can do this by keeping your mouth closed and pinching your nose while trying to breathe out. This increases the pressure inside of your chest cavity increasing vagal tone.

Diving Reflex: Splashing cold water on your face from your lips to your scalp line stimulates the diving reflex. The diving reflex slows your heart rate, increases blood flow to your brain, reduces anger and relaxes your body. You can also achieve the nervous system cooling effects by placing ice cubes in a plastic bag and holding the ice against your face for a brief hold of your breath. An additional technique that stimulates the diving reflex is to submerge your tongue in liquid. Drink and hold lukewarm water in your mouth sensing the water with your tongue. Finally, some have found that cold showers can stimulate the vagus nerve. Try finishing your next shower with at least 30

seconds of cold water and see how you feel. Then work your way up to longer periods of time.

Connection: Healthy connections to others, whether this occurs in person, over the phone, or even via texts or social media in our modern world, can initiate regulation of our body and mind. Relationships can evoke the spirit of playfulness and creativity or can relax us into a trusting bond into another. Perhaps you engage in a lighthearted texting exchange with a friend. A study had participants think compassionately about others while silently repeating positive phrases about these individuals. Compared to the controls, the 'relationship meditators' showed an overall increase in positive emotions like serenity, joy, and hope. These positive thoughts of others led to an improvement in vagal function as seen in heart-rate variability. If you are in proximity with another you can try the exercise called "hugging until relaxed." The instructions are to simply - stand on your own two feet, place your arms around your partner, focus on yourself, and quiet yourself down.

Gargling – Another home remedy for an under-stimulated vagus nerve is to gargle with water. Gargling actually stimulates the muscles of the pallet which are fired by the vagus nerve.

Massage – You can stimulate your vagus nerve by massaging your feet and your neck along the carotid sinus, located along the carotid arteries on either side of your neck. A foot massage help can lower your heart rate and blood pressure. A pressure massage can also activate the vagus nerve.

Yoga and Tai Chi – Both increase vagus nerve activity and your parasympathetic system in general. Studies have shown that yoga increases GABA, a calming neurotransmitter in your brain. Researchers believe it does this by stimulating vagal afferents (fibers), which increase activity in the parasympathetic nervous system.

Exercise – Exercise has many health benefits, but it's also been shown to stimulate the vagus nerve. Exercise also stimulates gut flow, which is mediated by the vagus nerve.

Relaxation – Learning how to "chill" may be the number one thing to help keep your vagus nerve toned. Try exercises like visualization and progressive muscle relaxation to include relaxation and stimulate the vagus nerve.

Probiotics and Omega-3s. It's becoming increasingly clear to researchers that gut bacteria improve brain function by affecting the vagus nerve. Omega-3 fatty acids are essential fats that your body cannot produce itself. They are found primarily in fish and are necessary for the normal electrical functioning of your brain and nervous system. Consider adding some of the following probiotics to your diet: yogurt, kefir, sauerkraut, tempeh, kimchi, miso, kombucha, pickles, traditional buttermilk, natto, and cheeses like Gouda, mozzarella, cheddar and cottage cheese.