



Autonomic Regulation Strategies for Anxiety and Stress

These strategies activate the **parasympathetic nervous system** via the **vagus nerve**, helping the body and mind return to a state of calm.

1. Breathwork

Why it works: Slow, controlled breathing increases vagal tone and reduces sympathetic arousal (Zaccaro et al., 2018).

Strategies:

- **Box Breathing** (used by Navy SEALs): Inhale 4s → Hold 4s → Exhale 4s → Hold 4s
- **Extended Exhale Breathing:** Inhale 4s → Exhale 6–8s (longer exhale = stronger vagal activation)
- **Diaphragmatic Breathing:** Place hand on belly; aim to expand the belly with each breath.

Evidence: Slow-paced breathing around 6 breaths per minute improves heart rate variability and reduces anxiety ([Zaccaro et al., 2018](#)).

2. Cold Exposure (Facial or Peripheral)

Why it works: Activates the **diving reflex**, stimulating the vagus nerve and reducing heart rate.

Strategies:

- Splash cold water on face (10–15°C)
- Hold an ice cube in your hand
- Place a cold compress on the face, especially the forehead and around the eyes

Evidence: Facial immersion in cold water has been shown to increase vagal activity and reduce acute stress responses ([Kox et al., 2014](#)).



3. Humming, Chanting, and Vocalisation

Why it works: Stimulates the vagus nerve via the vocal cords and resonance in the throat.

Strategies:

- Hum your favourite tune for 60 seconds
- Chant “Om” or repeat a calming sound
- Sing aloud (preferably lower tones)

Evidence: Vocalisation increases vagal tone and can improve HRV and emotional regulation ([Trivedi et al, 2023](#)).



4. Gargling and Gag Reflex Activation

Why it works: Stimulates the vagus nerve mechanically.

Strategies:

- Gargle water vigorously for 30 seconds
- Brush the back of the tongue (gently)
- Use a singing straw or resistive breathing device

Evidence: Although studies are limited, clinical vagus nerve stimulation often uses similar mechanical approaches



5. Somatic Anchoring

Why it works: Brings awareness back to the body, reducing rumination and sympathetic dominance.

Strategies:

- Press feet firmly into the floor and notice the sensation
- Clench fists for 5 seconds, release, and feel the rebound
- Use a weighted object or blanket for pressure input

Evidence: Somatic mindfulness improves ANS regulation and reduces stress ([Payne et al., 2015](#)).



6. Vibration or Tactile Stimulation

Why it works: Vibration at specific frequencies can stimulate vagal afferents (via the skin and neck).

Strategies:

- Use a handheld massager or neck vibration device
- Try tapping or brushing the sternum or collarbone area

Evidence: Studies ([Donovan et al, 2025](#)) show low-frequency vagal with vibration stimulation devices reduce symptoms of anxiety.

7. Movement-Based Regulation

Why it works: Rhythmic, bilateral movements can regulate arousal and promote parasympathetic activity.

Strategies:

- Rocking in a chair
- Gentle walking or swaying
- Rhythmic drumming or clapping

Evidence: The approaches above have some basis in evidence from direct or related approaches ([Fancourt et al, 2016](#), [Zhou et al, 2025](#)).



8. Social Connection & Eye Contact

Why it works: Co-regulation through safe connection can downregulate threat responses.

Strategies:

- Talk to a calm, trusted person
- Make soft eye contact with a friend or pet
- Use calming self-talk or record your own soothing voice

Evidence: Polyvagal Theory highlights social engagement as a key vagal regulator ([Porges, 2011](#)).



9. Grounding via the Five Senses

Why it works: Redirects attention away from anxious thoughts and regulates arousal through sensory input.

Strategies:

- Name 5 things you can see, 4 you can touch, 3 you can hear, 2 you can smell, 1 you can taste
- Carry a textured object or scent roller
- Sip a warm drink mindfully

Evidence: Grounding practices show reductions in physiological arousal and increased present-moment awareness ([Sheppes et al, 2011](#)).