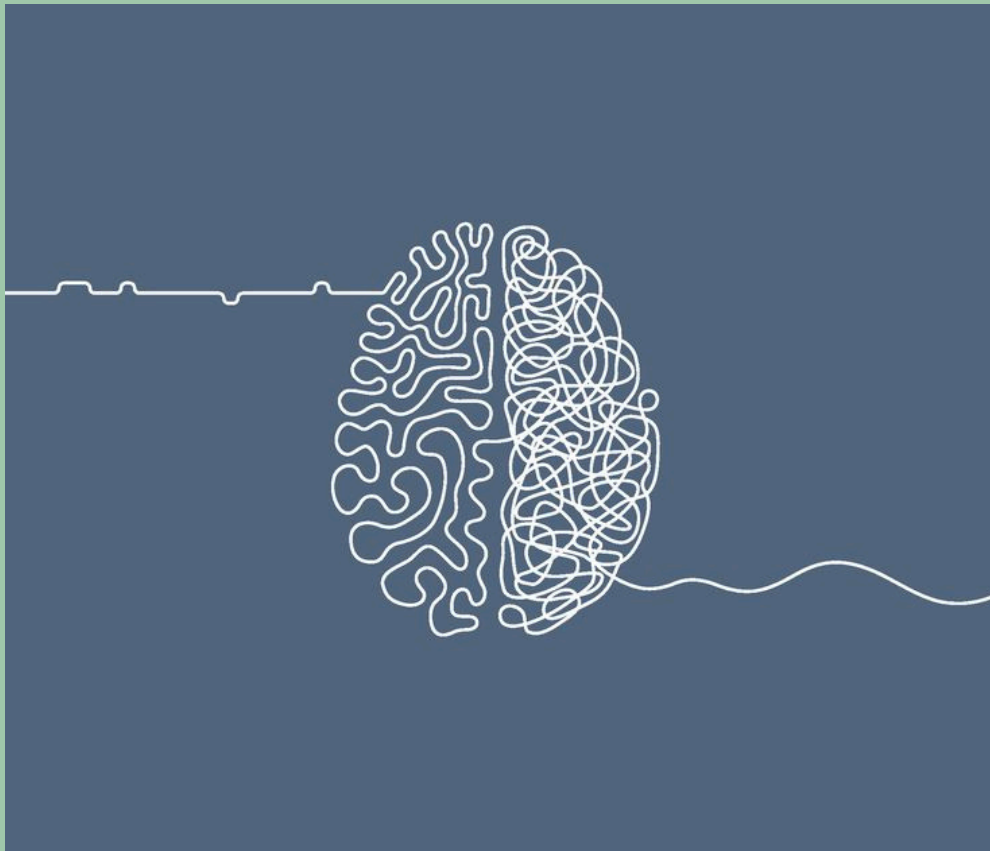




The Healing Collective

REGULATING THE DYSREGULATED AUTONOMIC NERVOUS SYSTEM



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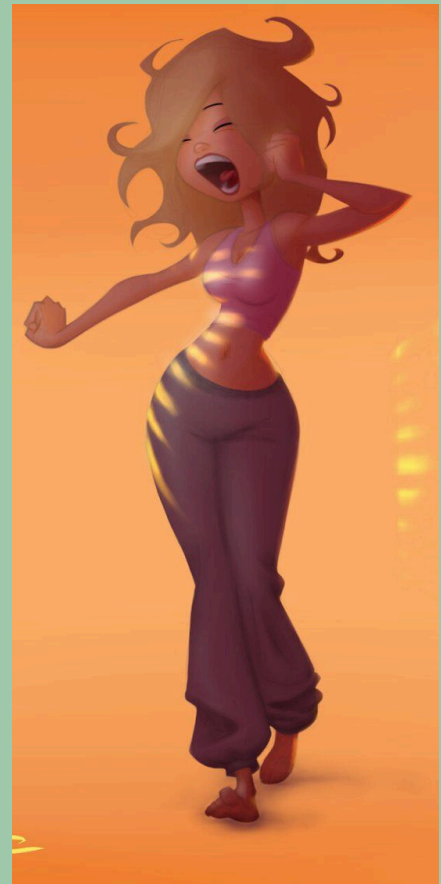
EXERCISES FOR ACTIVATING THE PERIPHERAL NERVOUS SYSTEM (PNS)

1. YAWNING

Here's an extremely contagious method for activating the PNS: yawning. If you haven't voluntarily or involuntarily initiated a yawn yet, it's a safe bet that you will while reading the next few sentences. Yawning is a natural respiratory reflex that improves circulation to the face, relaxes the eyes, and counteracts the shallow, rapid breathing that is generally associated with stress. Yawning requires a deep, slow inhalation, followed by a full exhalation. Because yawning triggers the relaxation response, you should repeat it as often as you like; it's cheap, portable, and effective.

Instructions for Yawning (Just incase you've forgotten)

1. Sit or stand comfortably.
2. Shrug, rotate, then shake out your shoulders for a few seconds.
3. Locate your jaw joints by putting your fingers on both jaws.
Add a slight bit of pressure as you begin to open and close your mouth, as you feel the joints with your fingertips.
4. Once you've located the joints, begin to lightly massage those muscles. (The jaw muscles can exert the strongest force; consequently, they tend to be the most tense muscles in the body.)
5. As you continue to massage any tight spots, begin to open your mouth, and slowly begin to inhale.
6. Open your mouth a bit wider . . . wider . . . wider.
7. Open the back of your throat. Allow the air to rush through your breathing passages.
8. At the end of the inhalation, complete the yawn by exhaling loudly with a "huff" or a sigh.
9. Allow your breath to return to normal.
10. Take a few deeper breaths.
11. Remain sitting or standing comfortably.
12. This time, in addition to stretching your face muscles as you begin the open-mouthed inhale, without straining, stretch your arms out wide to the sides, then stretch them up as far up as comfortably possible.
13. Pay attention to the muscles as they stretch.
14. After you have deeply inhaled and fully stretched, complete the yawn by exhaling loudly with a "huff" or a sigh, while dropping your arms to your sides.



2. THE MAMMALIAN DIVING REFLEX

As far as we know, every mammal has an automated response system for diving in cold water (less than about 21°C). This mammalian diving reflex allows dive times to be extended by maximizing oxygen expenditure efficiency while submerged.

Briefly, this reflex allows the body to enter a state of hibernation in which oxygen depletion is less detrimental to the brain, which increases the odds of survival in cold water drownings.

The following parasympathetic nervous system responses are typical (and in this order):

1. The heart rate slows.
2. The blood flow to the extremities becomes constricted.
3. The blood and water are allowed to pass through the organs and circulatory walls into the chest cavity.

The first two items begin to happen immediately (i.e., as soon as the face hits cold water). The slowing heart rate is almost instantaneous, while the constricted blood flow happens more gradually.

1. The slowed heart rate serves to conserve oxygen (preventing depletion), thereby increasing the amount of available time underwater without dramatically impairing performance.
2. The decreased blood flow provides more of a long-term (minutes to hours) survival benefit, but seriously impairs performance.
3. The third response is a bit more scary, because the body *intentionally allows fluid fill the lungs and chest cavity* (to prevent organs from being crushed from extreme pressure). For surface-dwelling mammals, it serves a survival function and therefore only kicks in as depths become extreme.

Interesting. But what does it have to do with trauma-informed interventions?

Well, when one is in a state of extreme emotional arousal, information processing suffers dramatically. In order to recover this crucial function, the nervous system essentially needs to be reset or rebooted. Marsha Linehan, Ph.D. (of DBT fame) and others have posited that the activation of the mammalian diving reflex is an effective method of doing just that. The reflex can be voluntarily activated by submerging one's head in a bowl of ice water (not freezing) or splashing one's face (just below the eyes and above the cheekbones) with icy cold water.





Instructions to activate mammalian diving reflex

1. Fill a bowl with icy cold water.
2. Bend/lean over.
3. Hold your breath.
4. Put your face in icy cold water for 30 seconds.
5. Make sure that the most sensitive part of the face (area underneath eyes/above cheekbones) feels the icy water.

Linehan claims (and this author concurs) that the mammalian diving reflex technique is “incredibly effective in calming down immediately.”

Additional methods for activating the diving reflex include placing an ice-cold gel pack or mask over/around the eye area or holding one's breath for 30 seconds while bending forward.

WHO SHOULDN'T DO THIS:

- Anyone with bradycardia (heart rate < 60 beats per minute)
- Anyone with known cardiac problems
- Anyone with an eating disorder (particularly anorexia nervosa)

3. HAND WARMING

When we are stressed, blood is shunted away from our hands and feet and directed to vital organs and the large muscles of our shoulders, hips, and thighs, enabling us to react physically to danger (i.e., fight or flee). But as you well know, most times the stress response is inappropriate for the present situation (i.e., we are not in grave danger—being neither chased nor attacked).

The more stressed a person is, the lower the temperature in the hands; the lower the stress level, the higher the temperature should be in the hands. (Research has shown that stress causes at least one or two degrees Fahrenheit decrease over five minutes.)





A biofeedback technique, aptly named hand warming, is designed to counteract the stress response via increasing parasympathetic activation. By simultaneously focusing your attention on your hands, while mentally conjuring images of warmth (e.g., holding a cup of hot chocolate, sitting by a fireplace, caressing someone's warm skin, or sitting in a sauna or hot tub), you can actually increase the temperature of your hands, consequently inducing a general sense of calm in your body and mind.

Learning to warm your hands via your thoughts requires no biofeedback instruments, just a little bit of relaxation training. However, to measure and track temperature changes, you may wish to get a monitor.

Instructions: Guided imagery script for hand warming

1. Allow yourself to be comfortable.... either lying down or sitting up with your back, neck and spine fully supported. Knowing that you will not be interrupted for the next little while, begin by gently closing your eyes.
2. Now begin to bring your attention to your breath—the direct experience of your breath— however it is, and however it changes. Allow yourself to softly focus your awareness onto the breath that is arising right now. . . the in-breath and the out-breath- the rising and the falling. If you can, try to follow one full cycle of the breath from the beginning of the in-breath and through its entirety to the beginning of the out-breath and through its entirety. Allow yourself the time and the space to be in direct contact with the breath throughout one entire cycle.
3. As you continue to pay attention to the breath, gently guide your awareness to your hands, noticing any sensations, energy, and the temperature in your hands. Bring to mind an image of warmth. Perhaps you are sitting by a fire, or warm and cozy under some blankets, possibly cuddled up with a loved one or pet, or lying on the beach under the blazing sun. Whatever brings with it the sense of warmth . . . heat.
4. Once you have the image, allow it to become as vivid as possible. Now, feeling the warmth, begin to notice your breath again . . . coming slowly and easily. Deepening with each inhalation . . . exhale fully and completely. Feel the warmth on your skin... completely comfortable . . . completely relaxed.
5. As the next breath arises, pay attention to this deep and comforting relaxation. Breathe here for a moment. ...
6. And when you are ready, gently bring yourself back to this room by counting up from one to five. When you reach the number five, your eyes will gently open. You will be awake and alert, feeling only peace. One . . . two . . . three. Take a deep breath . . . four. . . and five.

Bonus:

We already know that breathing rate affects heart rate patterns, which, in turn, affects how the brain deals with stress. We also know that it is difficult to directly control one's own heart rate or brain function. However, one can fairly easily control his/her breathing rate. It turns out that by regularly (voluntarily) slowing one's breathing down, one can improve heart rate variability, thereby allowing the brain to effectively deal with the stressful situations you encounter. Slow breathing allows you to increase the variability of your heart rate to decrease stress, improve focus, and build resilience.