Breathing Exercises to Reduce Anxiety

Anxiety is a feeling of a general fear and causes an increased attention to potential threats. The DSM-5 explains what makes a typical fear response different from an anxiety disorder (American Psychiatric, 2022). Fear is an appropriate response to a current situation, making it possible for someone to fight or flee in a dangerous situation. Anxiety, however, causes symptoms, such as muscle tension and hypervigilance, in anticipation of a dangerous situation that may occur in the future (American Psychiatric, 2022). While the symptoms of anxiety are real, the perception and potential of the anticipated danger to occur is not always accurate. Overtime, anxiety can lead to a host of health issues such as heart palpitations, insomnia, and behavioral changes (namely avoidant behaviors) that negatively impact an individual's overall well-being (Banushi et al., 2023).

Abnormal patterns of breath, like shortness of breath, difficulty breathing, and hyperventilation, can be associated with anxiety. For the body to function optimally, Oxygen, O, and Carbon Dioxide, CO2, must be balanced. However, the breathing characteristic of anxiety, short and shallow, decreases the O and CO2 in an individual's bloodstream, which decreases their brain, heart, and muscle function (Banushi et al., 2023). Research shows that there are specific breath exercises (some of which I share below) to better regulate O and CO2 levels and improve anxiety symptoms (among many other mental health disorder symptoms).

Slowing the breath rate and increasing the breath depth engages the parasympathetic nervous system, the state your body goes into while resting and relaxing (Banushi et al., 2023). More specifically, longer exhalations activate the vagus nerve, a messenger that communicates "I am safe" from the central nervous system to the body. When the vagus nerve activates, the parasympathetic nervous system turns on: slowing the heart rate, relaxing the body, and encouraging non-essential bodily functions to process, such as digestion and reproduction (Banushi et al., 2023; Gerritsen & Band, 2018).

Anneliese Horan, MSW Intern.

Ujjayi or "Ocean" Breath

Ujjayi breath is generally safe and effective for most people. The breath exercise is a yoga-based practice that is proven to improve symptoms of anxiety. Ujjayi breath reduces obsessive thoughts, induces a calm physical and mental state, and restores a sense of control over oneself. The breath technique has even reduced hyperarousal symptoms in patients with PTSD (Brown & Gerbarg, 2005).

To practice:
Find a comfortable position seated, standing, or lying down. Inhale and exhale slowly through your nose while placing a slight constriction in the back of your throat to create a sound like the ocean, hence the nickname "ocean" breath. The constriction creates resistance in your airway so you can better control the rate of air flow to prolong the breath (Katzman et al., 2012; Brown & Gerbarg, 2005).

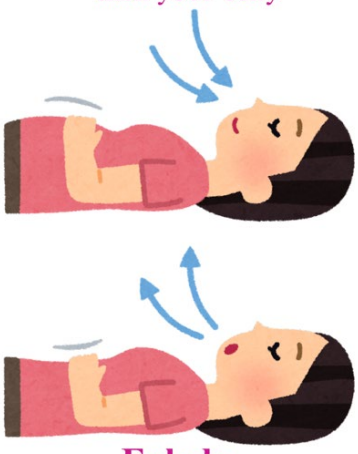
Diaphragmatic or 3-Part Breath

Diaphragmatic breath, or 3-part breathing, is a mindful tool to create a general sense of relaxation in the body and to redirect the mind away from excessive worry (Hazlett-Stevens & Craske, 2003).

As shared above, shallow breathing, characteristic of anxiety, causes oxygen deprivation and increases of CO2 in bodily tissue. This imbalance of O and CO2 contributes to inflammation and oxidative stress. Diaphragmatic breath consciously shifts someone into a slower, deeper breathing pattern that increases O intake and expels more CO2 from lungs to reduce anxiety symptoms (Hazlett-Stevens & Craske, 2003).

Inhale

Deeply through your nose feeling air fill your chest and then your belly



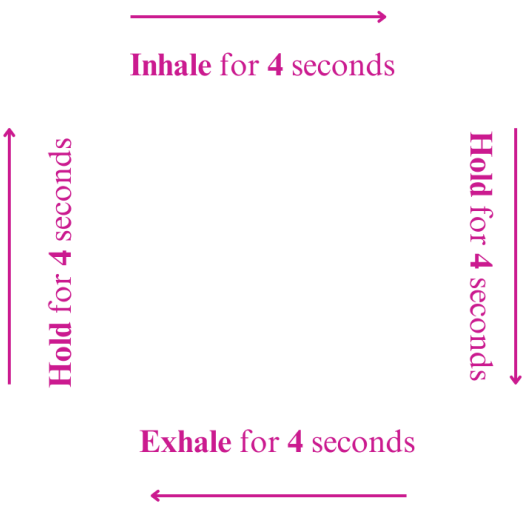
Exhale

Through your mouth feeling your belly deflate and then your chest deflate

To practice:

Find a comfortable position seated, standing, or lying down.
Inhale deeply though your nose to fill your chest, continue the inhale to fill your belly.
Exhale through the mouth releasing air from your belly, then from your chest.
If possible, you can place one hand on your heart and one hand on your belly to monitor the movement of your breath.
Continue this slow breath pattern, aiming for 8-10 breaths per minute (Hazlett-Stevens & Craske, 2003).

Box Breath



Box breath is a breathing practice that follows the cycle of: inhale, hold, exhale, hold. To practice box breath correctly, all four of these stages in the cycle are equal. Box breath has shown to regulate stress in the military (Balban et al., 2023).

To practice:

Find a comfortable position seated, standing, or lying down. Notice your breath and empty out any air in the lungs.
Now, you can begin the count. Inhale deeply through your nose as you count to 4, hold at the top of your inhale as you count to 4, exhale through your nose as you count to 4, hold at the bottom of your exhale as you count to 4.
Repeat the breathing cycle (Balban et al., 2023).

4-7-8 Breath

4-7-8 breath is common, but a more advanced breath practice to activate the parasympathetic nervous system. Inhaling to a count of 4 lets you take in more oxygen than a typical breath. Holding the breath for a count of 7 lets the oxygen saturate as much as possible into the bloodstream. Exhaling to an 8-count lets more CO2 leave the lungs than usual. Inhaling and holding opens the collateral channels to expand and activate the parasympathetic nervous system, slowing the heart rate, reducing the breath rate, and relaxing the body (Pandekar & Thangavelu, 2019).

By mindfully counting the inhale, exhale, and the space between, the 4-7-8 breath technique increases the neurotransmitter GABA, which reduces cortisol and adrenaline. GABA also slows the heart & breath rate and relaxes any muscle tension caused from anxiety (including the respiratory muscles) (Pandekar & Thangavelu, 2019).

To practice:
Find a comfortable position seated, standing, or lying down. Notice your breath and empty out any air in the lungs.
Now, you can begin the count. Inhale deeply through your nose as you count to 4, count to 7 as you hold in between the inhale and exhale, and count to 8 as you exhale out of the mouth.
Repeat the breathing cycle (Pandekar & Thangavelu, 2019).

Note: If this count feels too difficult, you can start at a 4-5-6 count and work your way up to 4-7-8. Practice and be patient, as this is a more advanced breathing cycle.

References

American Psychiatric Association. (2022*). Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). https://doi.org/10.1176/appi.books.9780890425787

Balban, M. Y., Neri, E., Kogon, M. M., Weed, L., Nouriani, B., Jo, B., Holl, G., Zeitzer, J. M., Spiegel, D., & Huberman, A. D. (2023). Brief structured respiration practices enhance mood and reduce physiological arousal. *Cell reports. Medicine*, *4*(1), 100895. https://doi.org/10.1016/j.xcrm.2022.100895

Banushi, B., Brendle, M., Ragnhildstveit, A., Murphy, T., Moore, C., Egberts, J., & Robison, R. (2023). Breathwork interventions for adults with clinically diagnosed anxiety disorders: A scoping review. *Brain Sciences*, *13*(2), 256.

Brown RP, Gerbarg PL. Sudarshan Kriya Yogic breathing in the treatment of stress, anxiety, and depression. Part II—clinical applications and guidelines. J Altern Complement Med. 2005 Aug;11(4):711-7. doi: 10.1089/acm.2005.11.711. PMID: 16131297.

Gerritsen, R. J. S., & Band, G. P. H. (2018). Breath of Life: The Respiratory Vagal Stimulation Model of Contemplative Activity. *Frontiers in human neuroscience*, *12*, 397. https://doi.org/10.3389/fnhum.2018.00397

Hazlett-Stevens, H., & Craske, M. G. (2003). Breathing retraining and diaphragmatic breathing techniques. *Cognitive*

behavior therapy: Applying in empirically supported techniques in your practice, 59-64.
Katzman MA, Vermani M, Gerbarg PL, Brown RP, Iorio C, Davis M, Cameron C, Tsirgielis D. A multicomponent yoga-based, breath intervention program as an adjunctive treatment in patients suffering from generalized anxiety disorder with or without comorbidities. Int J Yoga 2012;5:57-65.
Pandekar, P. P., & Thangavelu, P. D. (2019). Effect of 4-7-8 breathing technique on anxiety and depression in moderate chronic obstructive pulmonary disease patients. *International Journal of Health Sciences*, *5*, 209-17.

This Resource Guide was
Created by MSW Intern
Anneliese Horan