

Breathe Away Anxiety

Five minutes of controlled breathing lowers anxiety

Can breathwork and breathing patterns relieve anxiety? Do we have to do it every day? How long do we need daily to do this? How long does it take to see results? What breathing techniques are most effective? Most importantly, how do I do this?

Abstract

Controlled breathwork practices have emerged as potential tools for stress management and well-being. Here, we report a remote, randomized, controlled study (NCT05304000) of three different daily 5-min breathwork exercises compared with an equivalent period of mindfulness meditation over 1 month. The breathing conditions are (1) cyclic sighing, which emphasizes prolonged exhalations; (2) box breathing, which is equal duration of inhalations, breath retentions, and exhalations; and (3) cyclic hyperventilation with retention, with longer inhalations and shorter exhalations. The primary endpoints are improvement in mood and anxiety as well as reduced physiological arousal (respiratory rate, heart rate, and heart rate variability). Using a mixed-effects model, we show that breathwork, especially the exhale-focused cyclic sighing, produces greater improvement in mood ($p < 0.05$) and reduction in respiratory rate ($p < 0.05$) compared with mindfulness meditation. Daily 5-min cyclic sighing has promise as an effective stress management exercise.



We live in a stressful world where we are constantly bombarded with information, much of it negative. Sometimes, this gets overwhelming. We experience something stressful, we start to worry, our heart rate increases, we feel restless, and we breathe faster. This is a normal physiologic reaction, but in people with anxiety, this can trigger a cascade of thoughts and fears. There are medications for anxiety such as Lexapro, Prozac, Xanax, and Valium. Even people who don't take prescription medication often use something to calm anxiety which leads to higher rates of alcohol and marijuana use. But what if there was a way to lower feelings of anxiety without alcohol, drugs, or medication? Better yet, what if it only took 5 minutes a day? When I saw this study, it really piqued my interest.

This randomized controlled study out of Stanford compared the psychophysiological effects of a 5-min daily practice of three different breathing exercises and mindfulness meditation over 1 month. One group was told to practice cyclic sighing. Participants were instructed to slowly inhale through the nose to expand the lungs, then inhale again to maximally fill the lungs. Then slowly and fully exhale the breath through the mouth. A second group focused on box breathing, which is spending the same amount of time slowly inhaling, holding the breath, exhaling, and holding, before repeating the sequence. A third group practiced cyclic hyperventilation, which emphasizes inhalation rather than exhalation. They took one deep inhalation through the nose, exhaled passively, and then let the air fall out from the mouth. Every 30 cycles, they would hold their breath after passive exhalation for 15 seconds. The fourth group performed mindfulness meditation, which emphasized being aware of breathing and their body as opposed to actively controlling their breathing. All four groups showed significant daily improvement in positive affect (mood) and reduction in anxiety and negative affect, but there were significant differences between mindfulness meditation and breathwork. The positive affect benefits of the breathwork exercises increased with more practice over time. The cyclic sighing group showed a greater increase in positive affect (good feelings such as energy, joy, and peacefulness) toward the end of the study which was significantly different than for those randomized to mindfulness meditation. Mindfulness meditation did show improvement in measured parameters but had the least increase in positive affect. Overall, breathwork practices, particularly cyclic sighing, were more effective than mindful meditation in increasing positive mood. This indicates that intentional control over breath with specific breathing patterns produces more benefit to mood than passive attention to one's breath, as in mindfulness meditation practice. Taking charge of your breathing can break the cascade of psychological and physiological feelings causing anxiety.

The most effective breathing technique in this study was cyclic sighing. After one or two of these deep sighs, you may already feel calmer, but to get the full effect, repeat these deep sighs for about five minutes. Exhalation activates the parasympathetic nervous system, which slows down the heart rate and has an overall soothing effect on the body.

The great thing is that these interventions are free, have no side effects, and can be done anytime or anywhere. Start with just a minute and build up your routine. You can do this anytime during the day whenever you may need it. Try the different techniques and see which is best for you.

Here is more information from Stanford Medicine and a video from one of the lead authors. Here is a brief clip of an interview with Andrew Huberman, a popular podcaster who was also a lead author of this study.

Balban, et al. Brief structured respiration practices enhance mood and reduce physiological arousal. *Cell Reports Medicine* Vol 4:1, January 17, 2023; DOI: <https://doi.org/10.1016/j.xcrm.2022.100895>.