MODALITY SPOTLIGHT

Use Sound for Self-Care to "Reset" Your Stress Response

Elizabeth W. Krasnoff, PhD

What Chronic Fear and Stress Does to our Minds and Bodies - and What to do About It

Chronic fear and stress can lead to feelings of anger, sadness, numbness, and frustration, as well as lost sleep and increased use of alcohol and other substances. You might even experience shortness of breath due to feelings of overwhelm, lack of focus, irritability, and "hamster wheel" rumination about a worst-case scenario. Here's how to use sound for self-care to "reset" your stress response.

First let's talk about the mechanics of fear and stress – how they affect your body, and what you can do about it. When you are in a fear state you have poor access to your frontal cortex, the part of your brain that helps you to think clearly. Instead, another part of your brain, the amygdala, fires off and signals the adrenal glands to release a "chemical bath" of glucose, cortisol and adrenaline into your bloodstream. The extra glucose can wreak havoc with blood sugar levels, and cortisol and adrenaline can also harm your health.

The feeling of fear is related to brainwave activity. New research shows that our emotions are linked to certain brainwave patterns, and these patterns can affect the whole body. The research even shows that in mice, brainwaves that vibrate at a frequency of 4 hertz (Hz) appear when the mouse is feeling fear. These brainwaves were shown to communicate between the amygdala and frontal cortex, sharing the "vibe" of fear. In humans, we have seen studies in which a 6 Hz frequency induced fear, and other studies in which the same frequency (and other theta frequencies) reduced anxiety. Specifically, a 6 Hz brainwave (in 1 second

there are 6 cycles of the brainwave) was shown to interrupt an anxious brainwave pattern.

Your "Reset Button" for Fear and Stress

While no one is immune to feelings of overwhelm, there are golden threads of relief, and you can follow the threads. One way is by using sound. Listening to specific sounds can safely change your brainwaves. You can use sound to give yourself instructions to relax and feel happier. It is a drug-free, noninvasive way to help yourself when you feel overwhelmed or afraid, and it can be done at home or on the move--wherever you are. All you need is your phone and a pair of headphones.

The music that you listen to in your everyday life can be used as medicine, all by itself. And just becoming conscious of that can make it more powerful medicine. Support your mental health by using music playlists for mood support. Make your own playlists of sounds and songs that make you feel good. You can also go a little more high tech and use binaural beats sound technology to change your brainwave frequency. Changing your brainwave frequency can change the way you feel, and you can do it with binaural beats. Binaural beats are a specific type of sound that enter into your brain using a pathway that mother nature provided called binaural hearing. These beats naturally exist only in your head—that's why you have to listen to them through stereo headphones.

There are 5 basic brainwave states, and by using binaural beats you can choose which brainwave state you want to address. So if you are feeling fear or anxiety, try theta or alpha theta binaural beats frequencies to reset your brainwaves to feel a greater sense of deep relaxation and well-being. Binaural beats have been tested under clinical conditions for effects on brain states and the evidence is mounting at a rapid pace. These beats have been shown to have positive effects on sleep (delta), anxiety (theta), the perception of pain (theta), memory (beta) and focus (beta).

You might be feeling skeptical about the possible effects of sound on the brain and your feelings. How can something like sound cause real changes in our brainwaves? Processing sound vibration is one of our most fundamental and foundational survival skills. When sound vibrations talk, your nervous system listens. Sound is processed by the brain, where all information is processed, with real changes in brain waves that go on to travel through the communication matrix of your nervous system. Specific sounds such as music and binaural beats can affect this communication matrix, and your state of mind, for the better.

Learn more about author Elizabeth Krasnoff by visiting www.Sound-Medicine.com

References

- Centers for Disease Control and Prevention. (2020). Coping with stress. https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/managing-stress-anxiety.html
- Filimon, R. C. (2010, June). Beneficial subliminal music: binaural beats, hemi-sync and metamusic. In Proceedings of the 11th WSEAS international conference on Acoustics & Music: Theory & applications (pp. 103-108).
- Garcia-Argibay, M., Santed, M. A., & Reales, J. M. (2019). Efficacy of binaural auditory beats in cognition, anxiety, and pain perception: A meta-analysis. Psychological Research, 83(2), 357-372.
- Jirakittayakorn, N., & Wongsawat, Y. (2018). A novel insight of effects of a 3-Hz binaural beat on sleep stages during sleep. Frontiers in Human Neuroscience, 12, 387.
- Karalis, N., Dejean, C., Chaudun, F. et al. (2016). 4-Hz oscillations synchronize prefrontal–amygdala circuits during fear behavior. Nature Neuroscience 19, 605–612. https://doi.org/10.1038/nn.4251
- McConnell, P. A., Froeliger, B., Garland, E. L., Ives, J. C., & Sforzo, G. A. (2014). Auditory driving of the autonomic nervous system: Listening to theta-frequency binaural beats post-exercise increases parasympathetic activation and sympathetic withdrawal. Frontiers in Psychology, 5(1248).
- McKusick, E. D. (2014). Tuning the human biofield: Healing with vibrational sound therapy. Healing Arts.
- Pluck, G., & López-Águila, M. A. (2019). Induction of fear but no effects on cognitive fluency by theta frequency auditory binaural beat stimulation. Psychology and Neuroscience, 12(1), 53–64.