

Studies in Neurofeedback

Neurofeedback has existed for many years but has not been widely used in medicine until recently. It is only with recent studies and advances in technologies that neurofeedback as a neuroplasticity-based treatment option has begun to make headway.

In the 1960s, Joseph Kamiya was one of the first scientists who investigated the effects of providing a person with real-time biofeedback about his/her brainwave activity (Menzies, 2013). This process of biofeedback on the brain became known as neurofeedback (Menzies, 2013).

Since then, researchers have used and studied effects of neurofeedback on a wide range of human activities and conditions including sport performance, anxiety, ADHD, PTSD, etc (Niv, 2013). Today neurofeedback is successfully used in NASA, military facilities and medical clinics (Pope & Palsson, 2001).

Multiple studies focused on efficacy of neurofeedback for specific conditions. For example, neurofeedback training can help participants with PTSD by acquiring self-regulation skills (Kolk, Hodgdon, Gapen, Musicaro & Suvak, 2016). This article reflects on how neurofeedback training can help participants with PTSD by acquiring self-regulation skills. It discusses how the training can stabilize EEG activity and thus better focus and attention (Kolk et al., 2016). The studies deal with ways to investigate how neurofeedback can significantly improve control over one's brainwaves and patterns to combat PTSD symptoms.

Neurofeedback was also studied for other conditions. In the study by Menella (2017), it states neurofeedback was used for reduction of negative affect and anxiety. Neurofeedback provides real-time feedback on brain's activity to the person in session. This helps to consciously control and train their own brain to work optimally.

Many studies continue emerging to help understand brain plasticity. The analysis of these studies can show how with the advanced technology and research of neuroplasticity we can better understand the complex field of neurofeedback and neuroscience and use this knowledge to improve our mental resilience and capacities.

Kolk, A., Hodgdon, H., Gapen, M., Musicaro, R., & Suvak, M. K. (2016). A Randomized Controlled Study of Neurofeedback for Chronic PTSD. *PLoS One*, 11(12).

Mennella, R., Patron, E., & Palomba, D. (2017). Frontal alpha asymmetry neurofeedback for the reduction of negative affect and anxiety. *Behaviour Research and Therapy*, 92, 32-40.