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POST-TRAUMATIC STRESS DISORDER Factsheet

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What is biofeedback?

Biofeedback is a technique in which information about the person's body is fed back to the person so that they may be trained to alter the body's conditions. Physical therapists use biofeedback to help stroke victims regain movement in paralyzed muscles. Other specialists use biofeedback to help their patients cope with pain. It is also commonly used to reduce stress and anxiety, and to encourage relaxation.

Electromyographic biofeedback is used by psychologists to help anxious patients learn to relax. The electromyograph picks up electrical signals in the muscles and translates these signals into a flashing light or a beep every time muscles grow tense. If patients relax their tense muscles, they can slow down the flashing or beeping. Electroencephalographic biofeedback is used to teach self-regulation of brain function. It is usually provided using video or sound, with positive feedback for desirable brain activity and negative feedback for undesirable brain activity. Thermal biofeedback uses a temperature sensor to allow the patient to track his or her body temperature. During times of stress, the body will divert blood from the surface area of the body to the muscles and organs, allowing us to better respond to a nearby threat. When a patient is stressed, this will show as a drop-in temperature in the body's surface areas. When a patient's surface temperature is high, it typically means they are in a relaxed or sleepy state.

Dysregulation in autonomic nervous system activity is common in a variety of mental health disorders and presents targets for biofeedback. Hypoarousal patterns include slow, regular heart rate, increased heart rate variability, warm skin temperature, low sweat gland activity, and dominance of EEG frequencies in the theta to low alpha range (3.5–10 Hz). In contrast, hyperarousal is reflected by increased heart rate and decreased heart rate variability, high electrodermal activity, and higher frequency EEG bandwidth ranges in high-alpha or beta range (15–42 Hz).

What is the evidence for the effectiveness of biofeedback in people with PTSD?

The only review that met inclusion criteria assessed EEG neurofeedback. It contained moderate to low quality evidence and found a large improvement in PTSD symptoms with 4-12 weeks of neurofeedback compared to no treatment.

For more information see the technical table



NeuRA (Neuroscience Research Australia) is one of the largest independent medical and clinical research institutes in Australia and an international leader in neurological research.

Diseases of the brain and nervous system pose the greatest health, economic and social burden of any disease group because they are chronic, debilitating and have no known cures.

Medical research is the cornerstone of efforts to advance the health and wellbeing of families and the community. Our dedicated scientists are focussed on transforming their research into significant and practical benefits for all patients.

While we hope you find this information useful, it is always important to discuss any questions about PTSD and its treatment with your doctor or other health care provider.

HOW YOUR SUPPORT HELPS

We are able to make significant advances due to the generosity of countless people. Your donation allows us to continue to work towards transforming lives. For information on how you can support our research, phone **1300 888 019** or make a secure donation at neura.edu.au/donate