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## Neurofeedback proves effective in treating numerous disorders

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Imagine operating at optimum performance. Going to work every day with your mind focused and body productive; coming home and allowing yourself to relax and enjoy your family; sleeping soundly through the night without distractions.

Imagine if it wasn't just a dream.

Research shows that neurofeedback, a computer-based, brain-training technique, helps the body and the brain improve the way they function. Results have included success in regulating hard-to-treat disorders such as migraines, sleep disorders, panic attacks and attention deficit disorder (ADD) and improving performance in athletes, musicians and test-takers.

Neurofeedback has been proven so effective in treating traumatic brain injury (TBI) that the Texas Legislature recently passed a law preventing insurance companies from denying coverage for it if the patient is being treated for TBI. Another effort is currently under way to lobby the State to mandate the same coverage for those being treated autism spectrum disorders.

Neurofeedback all begins with a process of reteaching the brain. The central nervous system has a set point of normal activity that accounts for our level of arousal, alertness, stability and flexibility.

There are many reasons why this can become altered, the most common being periods of prolonged stress, physical and psychological trauma or substance abuse. The changes which result may show up in the EEG (Electroencephalogram) or measured electrical activity of the brain.

Through neurofeedback, therapists monitor which brain waves are most active and which are least active. Then, through a series of sessions, they equalize those waves into a healthy pattern, allowing for the regulation of symptoms or the clearing of the mind for peak performance.

### How it works

Neurofeedback training is painless and non-invasive. Here's how it works: One or more sensors are placed on the scalp, and one on each ear. The brain waves are monitored by a computer-based instrument that processes the signal and provides the proper feedback. This is displayed to the patient in the form of a video game.

The patient plays the hands-free game using nothing but his or her brain. If a desirable band of brain activity increases, so does the speed of the video game and the patient "wins." If an undesirable band of activity increases, the video game moves slower and the patient "loses." Because we are naturally competitive, our brain strives to win the game. As it begins to respond to the visual and audible cues that are being given, a "learning" of new brain wave patterns takes place.

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The results don't appear overnight. Sessions may take months before significant changes are seen, but when the brain is consistently led toward a particular status, over time it is more capable of staying there. In other words, if a nervous person is repeatedly led toward a calmer state, eventually the brain finds that place on its own.

While it is possible to observe the same phenomenon through medication, the learning curve is much more obvious in neurofeedback. In neurofeedback nothing happens unless the brain chooses to do so. The therapist only provides the information. The brain must take the initiative to do something. Thus, neurofeedback may become a more permanent, drug-free solution.

### **Benefits**

The benefits of neurofeedback research are overwhelming. According to EEG Spectrum International, follow up studies on children with ADD who received neurofeedback training showed significant increases in academic and behavior scores. Some children even jumped as much as two years in grade level achievement and boosted their IQ by about 15 points.

Studies are also being done on neurofeedback and addiction. After a month-long neurofeedback treatment, alcohol addicted patients achieved an 80 percent abstinence rate. A follow-up review showed that 70 percent remained abstinent.

It makes sense that a better-functioning brain can improve so many aspects of a person's life. In fact, many patients see a change in multiple symptoms over time as neurofeedback begins to train the brain to regulate itself better. Nonverbal autistic children begin to speak and teenagers with ADD begin to find focus and school success. As more research is conducted and positive results documented, neurofeedback will only grow in acceptance and use, helping thousands with its unique way of encouraging the brain to function in a more stable and holistic way.

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