

Biofeedback and the Brain

What is Neurofeedback?

Neurofeedback is an innovative technology which harnesses the brain's neuroplasticity – its ability to change itself – in order to bring about improvement in a variety of symptoms which can interfere with life satisfaction. This non-medicine approach trains the brain to function optimally, thus improving attention, mood, learning ability and more.

Analyzing Brain Activity and Setting a Goal

Neurofeedback, a form of biofeedback, begins with measuring electrical activity in the brain via a non-invasive EEG. The neurofeedback practitioner analyzes that information and programs a training goal into a computer, which then runs a video game for the participant to play. The goal of the game might be for the brain to speed up, in the case of someone who is depressed, or to operate more slowly, if the person suffers from anxiety.

Whenever the “player's” brain reaches that goal frequency, if only for a moment, he is rewarded with a beep or a flashing light. With the help of these rewards and with repetition, the brain learns how to more easily and more frequently operate at the more desirable level. When that occurs, many bothersome symptoms caused by the formerly dysregulated brain dissipate. This result is similar to the result one gets from frequently practicing a golf swing until “muscle memory” becomes strong and a good swing occurs more often than a poor one.

If you are familiar with biofeedback, you know that if a monitor displays your heart rate, you can rapidly learn to change it. When you give the brain information about itself, it has the ability to change, too.

Changes in the EEG due to feedback tend to correlate with improved behavior, mood and attention. Change in EEG behavior is a direct reflection of changes in the way the neurons fire.

Once these changes are practiced and learned, the effects tend to hold. Additionally, these changes often result in reduced reliance on medications or allow medications that weren't working well to work better.

It's Simple to Do

Even though what's going on inside the head is complex, neurofeedback itself is simple to do – so simple even a three-year-old can do it or a person with severe attention or developmental delay issues.

Applications of Neurofeedback

Knowing what parts of the brain to train is important, which is why neurofeedback is best conducted by a trained provider in a controlled environment.

For example:

- Depression often shows up in brain imaging studies as too little activation in the left frontal lobe. By encouraging more activity over that area, depressive symptoms often decline.
- Problems falling asleep can often be improved by training for calmness over the right hemisphere's central motor strip.

Trilogy of Treatments

Neurofeedback, psychotherapy, and medications work hand-in-hand. Training is used with patients both on and off medications. As the brain stabilizes and becomes better regulated, medications, psychotherapy and other modalities often become more effective. It's not uncommon to see a reduced need for medication as brain regulation increases.

For more information visit our website: loralonsberry.com or call our office for an appointment: 752 6634.