What is Neurofeedback?

Neurofeedback is direct training of brain function, by which the brain learns to function more efficiently. We observe the brain in action from moment to moment. We show that information back to the person and we reward the brain for changing its own activity to more appropriate patterns. This is a gradual learning process. It applies to any aspect of brain function that we can measure. Neurofeedback is also called EEG biofeedback, because it is based on electrical brain activity, the electroencephalogram, or EEG. Neurofeedback is training in self-regulation. It is simply biofeed- back applied to the brain directly. Self-regulation is a necessary part of good brain function. Self-regulation training allows the system (the central nervous system) to function better.

What is Neurofeedback good for?

Neurofeedback addresses problems of brain disregulation. These happen to be numerous. They include the anxiety-depression spectrum, attention deficts, behavior disorders,various sleep disorders, headaches, migraines, PMS, and emotional disturbances. It is also useful for organic brain conditions such as seizures, the autism spectrum, and cerebral palsy.

The symptoms may go away, so it's all the same in the end?

Indeed, with neurofeedback the symptoms may be entirely suppressed. A person with diagnosed Attention Deficit Disorder may be able to train the brain to pay attention, so that condition will no longer be diagnosable. A person coming in with migraines may no longer have them. (However, that person may still have a greater "vulnerability" to migraines than the average person on the street.) A person with epilepsy may no longer have seizures. (Although that person still retains a vulnerability to seizures.) A child with severe rages and temper tantrums may not have them again.

How is this done?

We apply electrodes to the scalp to listen in on brainwave activity. We process the signal by computer, and we extract information about certain key brainwave frequencies. (All brainwave frequencies are equal, but some or more equal than others….) We show the ebb and flow of this activity back to the person, who attempts to change the activity level. Some frequencies we wish to promote. Others we wish to diminish. We present this information to the person in the form of a video game. The person is effectively playing the video game with his or her brain. Eventually the brainwave activity is "shaped" toward more desirable, more regulated performance. The frequencies we target, and the specific locations on the scalp where we listen in on the brain, are specific to the conditions we are trying to address, and specific to the individual.

What conditions can be helped?

In our work at the Brian Othmer Foundation, we are especially concerned with the more "intractable" brain-based problems of childhood whose needs are not currently being met. This includes first of all seizures and febrile convulsions. It includes the severely disruptive behavior disorders, such as conduct disorder and bipolar disorder. It includes the autistic spectrum and pervasive developmental delay. It includes cerebral palsy, acquired brain injury and birth trauma. Many children have sleep problems that can be helped: bedwetting, nightmares and night terrors, sleep walking, and teeth grinding. We can also be helpful with many of the problems of adolescence: drug-taking, suicidal behavior, anxiety and depression. And we can also help to maintain good brain function as people get older. The good news is that almost any brain, regardless of its level of function, can be trained to function better.

How do you know how to train a particular brain?

Over the years, certain training protocols have been developed that are helpful with certain classes of problems such as attention, anxiety and depression, seizures and migraines, as well as cognitive function. There are a number of assessment tools we use to help us decide which protocols to use. These are simple neurodiagnostic and neuro-psychological tests.

I want to know more, where can I read about this?

- The information above is from The Brian Othmer Foundation website. More information can be found there and also at: www.quietmindfdn.org.