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## **An Introduction to Neurofeedback**

Neurofeedback (also known as EEG Biofeedback) is one of several new technologies that represent a blending of the fields of mental health and neuroscience.

At UCLA in 1971, Barry Sterman, Ph.D., was able to demonstrate that epileptic patients using this form of biofeedback could be trained to either stop or reduce their seizures. After several epileptic studies were completed by Dr Sterman, it was discovered that Neurofeedback also appeared to help patients improve their concentration. Subsequently, Joel Lubar, PhD. from the University of Tennessee was able to demonstrate in his research that Neurofeedback was an effective treatment for ADHD.

Now, over 50 years later, EEG biofeedback meets the American Academy of Child and Adolescent Psychiatric Clinics criteria for clinical guidelines established for the treatment of ADHD, seizure disorders, anxiety (OCD, GAD, PTSD, phobias), depression, reading disabilities, and addiction disorders.

Neurofeedback essentially is a way of teaching residents how they can change brain waves to regulate their nervous system. By using Neurofeedback, residents will help themselves improve sleep, mood, anxiety, ability to sustain focus/concentration, social awareness and self-control. As sessions are repeated, the brain learns to condition itself to keep these changes.

In the 50 plus years this service has been provided, we know of no documented instances of long term negative side effects. A significant number of Neurofeedback clients lessen or even discontinue their prescription drug dosages while they are in treatment.

### **What is It?**

Neurofeedback is a form of biofeedback. Biofeedback uses sensitive instruments to detect subtle physiological measures of bodily function and then amplify them so that they are readily perceived by the patient in auditory and visual form. Heart rhythms, breathing patterns, blood flow, muscle activity and skin temperature are just some of the measures that can be detected and then regulated with the use of biofeedback instruments. These measures, brought under the control of a patient, can provide relief from stress, anxiety, pain, emotional, behavioral, neurological and learning disorders.

Biofeedback treatment has been available in hospitals, clinics and doctor's offices for nearly 70 years. It has been a reliable adjunct to medical and psychiatric services. Since the 1970's technological advances have led to much more powerful and longer lasting forms of biofeedback.

One such advancement, Neurofeedback, amplifies brain waves and then uses operant conditioning to create beneficial changes in the autonomic nervous system of the patient. After decades of research at such institutions as UCLA, The University of Tennessee, Harvard Medical School, The Meninger Clinic and NASA, these new methods of treating emotional, behavioral and medical

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disorders are finally becoming more readily available to the public. It is a potent and yet easy for the patient to learn method for obtaining relief from distressing symptoms and disabling disorders.

#### How Does It Work?

Sensors are attached with paste to the patient's scalp. These sensors allow for the direct observation of brain waves on a computer screen. Changes in these brain waves are then fed back to the patient in dynamic visual and auditory displays (via a simple video game!). The patient then learns to make changes in the game's display by concentrating their attention on the video game. As they make changes on the screen, they are simultaneously making changes in their brain waves!

Changes in brain waves can create changes in symptoms of a disorder within hours, sometimes within minutes. The patient goes home after each session and completes a log of their responses to the biofeedback. Once the clinician and patient decide they have found the optimal response, that training is simply repeated until the response is conditioned.

#### Who Provides This Service

Focus Centers of Asheville is a Psychological company registered in the State of North Carolina. Their staff currently provide mental health services including Neurofeedback, biofeedback, psychotherapy, neuro-cognitive testing, psychological testing and qEEG brain evaluations.

#### Clinical Staff

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