

# **Learning to Use Your Own Body to Enhance Health**

## ***Treatment Options Using Applied Psychophysiology and Biofeedback***

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Imagine that you are about to play basketball. You focus your attention, aim and shoot the basket. Whether you miss or get the basket you have gained information that will affect your next shot. Now imagine what it would be like to shoot a basket blindfolded. Without feedback your performance greatly deteriorates.

This analogy is often used when discussing the benefits of biofeedback. Biofeedback involves use of some type of sensor that provides *immediate* specific feedback about a body system. With this increased awareness the learner can make desired adjustments in behavior to eventually change an undesirable symptom. Just like the basketball player, the learner uses feedback to gradually make minor modifications in behavior that eventually leads to a more beneficial outcome or goal.

For example, a person complaining of tension headaches may not be aware of how tense their neck or shoulder muscles are at any given period of time. A therapist can cue the person to relax but cannot truly determine if or how much the person has reduced tone in the muscles. Both the person and the therapist essentially are wearing blindfolds. If we use sensors on a muscle information or “feedback” can be provided to a person about tension in the muscles either by lights, sound or a number reflecting the force of the muscle contraction. As the person learns to relax (using techniques and cues provided by the therapist who acts as a guide and coach) the response is instantly displayed for the individual to see or hear. This feedback can be used help the person become aware of when he or she is increasing muscle tension as well as to let the person see how effective they are at using new skills to relax the muscle. Feedback provides an objective answer to the question “*How am I doing?*” The person uses biofeedback to increase awareness regarding a problem area, uses new skills to modify the behavior and practices these skills until he or she learns how to improve results without the equipment. In a nutshell, biofeedback is a teaching tool that demonstrates that there is no separation between mind and body. It offers a person the opportunity to see that many functions that were considered to be involuntary (muscle tension, heart rate, blood pressure, temperature, perception of pain, ability to focus on tasks, alertness, etc.) can be influenced by conscious choice. For the motivated individual, biofeedback offers an exciting way to improve a variety of health conditions and promote well being.

Biofeedback is used today for a number of conditions. These conditions may include: Headache (tension, migraine), Musculoskeletal Pain, Fibromyalgia, Temporomandibular Joint disease “TMJ”) Stress Related Conditions (muscle spasms, disorders of the digestive system, blood pressure, Raynaud’s disease, PMS, etc), Neuromuscular Conditions (stroke, nerve damage, head injury, tics), disorders involving attention (Attention Deficit Disorder, Peak Performance) and many others. Depending on the symptoms presented clinicians may use one or more types of biofeedback. The sensors used to pick up information determine types of biofeedback. They generally include temperature, muscle, skin or brain wave sensors to reflect information back to the participant. While often referred to as an alternative medicine which may provoke a connotation of being a fad, biofeedback is a well researched application of physiology and psychology that has been demonstrated to be efficacious in the treatment of the above conditions.\*

Neurofeedback, also referred to as EEG (brain wave) biofeedback is an exciting type of biofeedback utilizing brain wave activity to help people learn how to focus attention. Participants wear sensors on the scalp which allows them to play a video game using brain wave patterns. Feedback from the game rewards learning how to pay attention in a more productive way (for example, the person demonstrates less daydreaming, greater ability to concentrate, less distractibility from over-arousal). With practice individuals can condition themselves to attend to situations in a way that enhances overall performance. This has applications for numerous conditions such as Attention Deficit Disorder, stress related conditions, Anxiety and Peak Performance Training.

Biofeedback offers people a non-invasive way to improve many chronic conditions that have often failed to respond to other treatments. It does not produce side effects and may help improve health without medication. For the person who is willing to participate in managing his or her own health, biofeedback offers an opportunity to learn how to develop self-regulatory skills that can limit the impact of stress and enhance performance.

*(For additional information please see the following websites: EEG or eeginfo.com, eegspectrum.org, aapb.org)*

*\* See the Association of Applied Psychophysiology and Biofeedback website for more information supporting data in this area.*

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