

HOW IS EEG BIOFEEDBACK PERFORMED?

Each session begins with the placement of a few electrodes on the scalp – with gel and a comfortable headband. These electrodes are, in turn, attached to an EEG computer system which has a video monitor and sound capability.

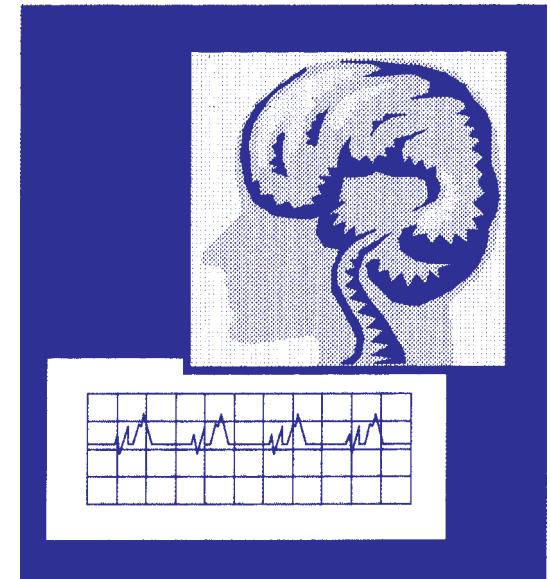
Through a special computer software program, the brainwave patterns are quickly represented on the computer system. The patterns seen and heard are brainwaves—moving graphs (or for children and adolescents, game figures) of various colors, and with peaks and valleys. Sometimes the peaks and valleys vary in height, in width, and in their tones.

These pattern variations become the critical feedback that allows us to *learn* how to control the production of our brainwaves (e.g., learning to catch a ball). The mind can be trained to recognize brain states (or conditions) and regulate itself, if given this *immediate* feedback about what is happening. Once a person becomes familiar with the process, EEG Biofeedback is very much like playing a computer game.

Some people need more “practice” to *learn* to control their brain patterns. Therefore, the number of sessions, required to achieve the desired results, will vary. As a reference point, the ability to control and sustain new EEG patterns is *rarely achieved* in less than twenty to thirty, 50-minute sessions. Although, most of us will begin to see evidence of progress *much sooner*.

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NEUROFEEDBACK (EEG BIOFEEDBACK)



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WHAT IS EEG BIOFEEDBACK?

Consider a child learning to catch a ball. The key to the child learning this skill is that he or she receives immediate visual, auditory and tactile-feedback. This feedback, along with practice, results in the child becoming better and better at catching a ball.

We often wish that training our brain to do things like concentrating while reading and remaining more focused on a task, could be as easy as learning to catch a ball. With EEG Biofeedback, “training your brain” can be almost that easy.

EEF Biofeedback (also known as Neurotherapy) makes us a physiological signal “big enough” for us to be aware of it. By making us aware of the changes in various physiological responses, EEG Biofeedback enables us to gain control over the physiological responses which may have a negative impact on our day-to-day lives.

With “practice,” (repeated EEG Biofeedback sessions) we can often reduce medication, perform tasks that were once frustrating and discouraging, reduce anxiety and depression, and achieve peak performance levels on the athletic field, in the classroom, and at work.

4 COMMON EEG PATTERNS

Below are the patterns that a person in EEG Biofeedback will learn to recognize and control. Each pattern has a characteristic shape, frequency, and corresponding physical states. These patterns occur in all people, in varying degrees, all of the time. Problems may arise when one pattern is (1) unusually predominant, (2) interrupts the typical functioning of other EEG patterns, (3) precludes “normal” physiological functioning (e.g., insomnia) or (4) interferes with an individual’s desires, goals, achievements and/or one’s ability to learn (e.g., Attention Deficit Disorder or poor performance). Research indicates that persons experiencing depression, anxiety, post traumatic stress disorder, alcohol addiction and drug addiction, have experienced unhealthy changes in EEG patterns. These persons usually can *learn* to return these EEG patterns to *healthy* state.

BETA

The Brain at Work 13-30 Hertz (cycles per second) This brainwave pattern is indicative of a person who is active, alert, concentrating, anxious, tense, and/or lively.

The Brain in Relaxed Wakefulness 8-12 Hertz

This brainwave pattern is indicative of a person whose eyes are closed, and yet the person is still awake. The person could also be described as calm, peaceful, tranquil, unfocused, and/or mentally in “neutral.” Visual and/or auditory imagery is often experienced in conjunction with this brain pattern.

ALPHA

THETA

The Brain in the Early Stages of Sleep 4-7 Hertz

The person representing this brainwave pattern is between a state of very relaxed wakefulness and deep sleep. This person may be described as dreamy, drowsy, dull and/or hazy. Vivid imagery and memories may be experienced with this brain pattern.

The Brain in Deep Sleep 1-3 Hertz

When a significant amount of this pattern is present, this typically indicates deep states of sleep. This brainwave pattern may also be indicative of someone who has sustained brain damage, or someone who is sleep-deprived.

DELTA