

ATTENTION DEFICIT DISORDER:

WHAT IT IS AND HOW TO TREAT IT

In children and adults: A new non-drug treatment approach

Everyone occasionally has difficulty staying still, sustaining attention, or stifling impulses. But for some people, this problem is so persistent and continuous that it seriously interferes with education, work, friendship, marriages, and family life.

Many individuals with Attention Deficit Disorder (ADD) and/or learning disabilities are first brought to a psychotherapist with symptoms ranging from depression and anxiety to aggression and impulsive acting out. These are all too frequently the emotional results of undiagnosed or untreated ADD. They rarely perform up to the expectations of their ability they display and inevitably develop a poor opinion of themselves in reaction to constant criticisms and repeated failure.

Frequency of ADD

Fifteen million or more people in North America suffer from ADD. Of the estimated 63 million children under the age of 18 in the United States, at least 3 to 5% have ADD. There are indicators that this condition in fact is on the increase. Learning difficulties and ADD are different, but considerable overlap exists between the two. As many as one quarter of those with ADD have learning disabilities: that is, there is significant discrepancy between their overall intellectual abilities and their ability to learn and perform in academic and work skills.

Just as many ADD children suffer from learning disabilities, the opposite is also true. Of the 5-10% of children in the United States who are learning disabled, about one third also have ADD.

Some research suggests persons with ADD are more intelligent and more creative than the average person. Winston Churchill and Thomas Edison were able to overcome ADD and went on to achieve great personal and professional success. But others can remain blocked from their true potentials.

Formally known as hyperkinesis, hyperactivity, minimal brain damage, and minimal brain dysfunction, it was given the name Attention Deficit Disorder in 1970.

ADD can be present with and without hyperactivity. About 60% of those people with ADD have hyperactivity. This type is called Attention Deficit Hyperactive Disorder (ADHD). The majority of ADD cases are male by a 3 to 1 margin. Also, males most often have the hyperactive component.

In all applications, the goal of biofeedback training is self-regulation - learning how to regulate both mental and physical processes for health and improved psychological functioning.

How Biofeedback Works

All biofeedback works on the same principle described above. Depending on the different type of biofeedback instrument used, a small sensor will be placed somewhere on the head or body. This sensor will be used to detect certain changes in physical functions. The signal which is picked up by this sensor will then be amplified and the individual will be able to hear an audible sound or see a visual stimulus. This feedback sight and/or sound will begin to fluctuate. Soon the individual can learn which different feelings or sensations in his own body can cause the feedback to move in the desired direction. By following the audible/visual feedback signal, an individual is able to change his mind/body relationship and achieve a greater sense of health or well-being. It is as if they are following an electronic path toward improved functioning.

It may take a number of sessions for the individual to learn how to utilize the feedback to create the desired effect which he is seeking. Eventually, the individual will become so familiar with the feedback process that he will be able to produce the desired effects quite quickly and easily. Soon he will no longer need the biofeedback since he has learned a new response. In a sense, doing biofeedback therapy is like reading a book. Once you know what is contained in the book, you no longer need to continue to read it.

Different Types of Biofeedback Instruments

There are a number of different types of biofeedback equipment. Some of the more common ones are instruments which are used in the measure of anxiety changes, temperature changes, muscle tension changes, and neurological energies.

The biofeedback instrument which is used in the treatment of Attention Deficit Disorder, with or without hyperactivity, is called the electroencephalogram (EEG). The EEG is an instrument which can measure the minute levels of electrical energy or electrical waves which are generated by the brain.

Types of Brain Waves

The electrical energy in a brain wave is extremely small and needs to be magnified by the EEG instrument. This brain wave pattern is then made available to the individual in the form of a sound or sight. The brain wave energies can vary from one cycle per second all the way up to thirty cycles per second. The chart below indicates the various types of brain wave classifications and what an individual is likely to feel when he is in each one of them. If an individual asks if he can control his brain wave energies

and create different states within himself, he would probably admit that he is mainly aware of being awake and being asleep. There are a whole range of other brain wave states between awake and asleep. Many of these other wave forms have to do with the level of the tension, relaxation or mental focus which we are experiencing.

Characteristics of Brain Energy

Types of Brain Waves	Beta	Alpha	Theta	Delta
Cycles per Second	30 - 13	13 - 8	8 - 4	4 - .5
Typical Behaviors	Focused Alert Attentive Stressed	Relaxed Reflective Meditative	Pre-Sleep Drifting In and Out of Consciousness	Deep Sleep

It is possible through biofeedback training to learn to vary the attention from being highly attentive and focused to being very unfocused and relaxed.

For some reason, persons who have difficulty with Attention Deficit Disorder appear to have a low cycle per second energy in the low alpha and theta range in certain parts of their brain. Through the use of biofeedback they are able to assist themselves in learning to increase the energy in this area, to assist themselves in alleviating the symptoms of ADD and related hyperactive and impulsive conditions. Through the use of biofeedback, we are now able to prepare the mind to be alert or be relaxed.

In a sense, we are now able to pay attention to how to pay attention. We are able to take the responsibility for adjusting our neurological energy to match the task at hand. Perhaps it was very insightful on the part of the teacher who said to her students, "Put on your thinking caps". Through the use of biofeedback, it is now possible to literally adjust the neurological brain energy to enhance our living and learning.

The process of learning to overcome symptoms of Attention Deficit Disorder involved reducing the low range of alpha and theta and increasing beta brain wave energies. Although the individual can learn fairly quickly how to change his brain energy in the desired way, at least 25 sessions are needed to assure that the positive pattern change will be permanent. There have been some studies showing EEG neurotherapy that has been maintained over a period of a 10 year follow-up. In order for the brain wave training to be adequately learned, two or three 45-minute training sessions need to be undertaken each week. This provides the best time sequencing for more adequately learning the new more focused brain energy.