

Treating ADD/ADHD Without Medications

Attention Deficit Disorder may be the most widely diagnosed behavioral disorder among children and adults.

What is ADD

Attention-deficit disorder (ADD) and Attention-deficit hyperactivity disorder (ADHD): A neurobiological disorder that affects 3 to 7 percent of school-age children, characterized by developmentally inappropriate levels of inattention, impulsivity, and/or hyperactivity. It is now known that AD/HD nearly always persists from childhood through adolescence and that many symptoms continue into adulthood.

Although individuals with this disorder can be very successful in life, without identification and proper treatment, AD/HD may have serious consequences, including school failure, family stress and disruption, depression, problems with relationships, substance abuse, delinquency, risk for accidental injuries and job failure. Early detection and treatment are extremely important. Instead of dependence on prescription drugs, neurofeedback offers state changes in self-regulation which continue after treatment ends.

Signs of ADD

- * Difficulty maintaining focus in daily tasks
- * Does not seem to listen well
- * Difficulty organizing tasks
- * Easily distracted
- * Forgetful in daily activities
- * Makes careless mistakes
- * Loses or misplaces items
- * Difficulty following through to the completion of normal tasks
- * Avoids tasks that require sustained concentration

Signs of ADHD

- * Difficulty sitting still for any extended length of time
- * Is overactive in inappropriate situations
- * Talks excessively
- * Fidgets with hands or feet
- * Seemingly unlimited energy
- * Difficulty waiting in "quiet" activities
- * Has difficulty waiting patiently
- * Blurts out answers or interrupts others frequently

The arousal system manages a person's appetites, perceptions, and abilities to control, soothe, gear up, and modulate oneself like a biological thermostat that regulates internal housekeeping. Collectively, this regulatory activity controls states of attention, mood, wakefulness, sleepiness, impulsivity, and awareness.

ADD people are often less differentiated, less activated, and less responsive to internal and external cues requiring shifts in activation states. Their performance on tasks they choose are markedly better than on those delegated to them. Selective attention reflects in their difficulty with schedules, deadlines, timeliness, and conformity.

Disregulation sponsors idiosyncrasies in perception that make less important details seem salient. It promotes a perceptual style that predisposes the ADD individual to attend to the urgent rather than the important. It can cloud judgment and boost impulsivity. Perceptual anomalies can color information processing and make it more arduous and inefficient.

Untreated, ADD often translates into increases in adult accidents, divorces, job losses, legal difficulties, addictions, frustration and low self esteem. Instead of dependence on prescription drugs, neurofeedback offers state changes in self-regulation which continue after treatment ends.

What is Neurofeedback Training?

This is a way for people, including children, to learn about what is happening inside their own brains as their state of mind or awareness changes. This process is also known as EEG (electroencephalographic) biofeedback, or brainwave training. It provides a tool for the person to learn how to re-regulate fuzzy distracted thinking and to be able to get on-task with sustained concentration and attention.

How will my child Benefit From "Concentration Training"?

This training procedure has been shown to increase a person's ability to pay attention, focus and concentrate. Studies have demonstrated that children with ADD who have completed this training have also shown significant improvements in classroom performance. In one study, 80% of 250 children trained demonstrated grade point average improvements of approximately 1.5 levels. In addition, IQ scores on the WISC-R also showed significant improvement.

What is the Method Used?

Everyone's brain produces electricity and brain-waves of different frequencies. Different types of brain waves are associated with different mental states. People with attention problems produce an abundance of slow waves and less fast wave activity. A sudden burst of slow wave activity -- Alpha or Theta, in the middle of a task may indicate the individual being tuned out for that moment in time. Concentration is improved by training the person to increase fast wave activity. "Tuning out" and/or day dreaming is reduced by training to decrease slow waves. Fidgeting and/or hyperactivity is decreased by training to increase SMR (sensory motor rhythm).

What Happens During the Training Session?

We work individually with each student. While sitting in front of a computer screen the student receives audio and visual feedback concerning their brainwave activity. This feedback gives positive reinforcement and trains the student to:

- *relax
- *increase alertness
- *focus
- *concentrate
- *stop fidgeting
- *decrease an impulsive approach to tasks

Monitoring involves placing two sensors on the head. The wires from these two electrodes transmit the electrical information from the scalp to an instrument which analyses the brainwaves. This information is fed into a computer and the person is able to see their brainwaves on a computer screen. The Trainer helps the person understand the wave patterns and how to achieve focused concentration. Children enjoy thinking about "training" as being like a gymnast or martial arts expert training for the Olympics. The skill must be practiced until it becomes automatic (unconscious). In addition to acquiring self regulation of brain-waves, the student receives instruction in metacognitive strategies thinking processes and skills involved in learning how to learn and remember. Older students are taught time-management and study skills. These skills are learned more rapidly and thoroughly when they are taught in combination with neurofeedback.

Do Neurofeedback and Medications do the same thing?

No. Medications do act immediately. This can be useful and helpful for some children to control disruptive behaviors which might otherwise cause negative reactions and a lowering of self esteem. Medications act only while they are at sufficient dosage level in the blood stream. Their usefulness is summarized as a short term benefit for the management of behavioral symptoms of inattention, impulsivity, and hyperactivity; and a lack of demonstrated long-term effects on learning, achievement or social adjustment.

Neurofeedback takes much longer to produce change (2 to 6 months) but appears to give long term benefits in all key areas of attention span, impulse control, academic achievement and social adjustment.

Medications used for ADD go throughout the brain and the body and can have an effect in many different and unwanted areas. These unwanted effects, are called side effects and may include headaches, a decreased appetite, increased pulse rate, stomach aches, sleep disturbances, tics, decreased spontaneity and creativity, and when coming off a dose of medications, increased hyperactivity and depression (the so called "rebound effect").

Neurofeedback on the other hand, is a learning procedure which, like other types of learning, does not have these unwanted side effects. Often neurofeedback is used in combination with medications. In most cases, medications can be gradually reduced as the person learns self-regulation.

What are the advantages of EEG Training?

With EEG training the person is empowered to take control of both attention and concentration. There are no side effects associated as with medications. Training helps attention when the person needs it most, for example, during the evening study hours when medication may interfere with concentration or sleep. Training is the first step towards not requiring medication in order to concentrate on one's work in future years.

How long does Training take?

Training typically takes 40-60 sessions depending upon the severity of the disorder. Frequency of training is usually 2 times per week for a period of up to 5 months. Each training session lasts approximately 50 minutes. Condensed schedules are sometimes done during the summer.

How soon will Progress be Noticed?

Clinically, progress can generally be noticed after about twenty training sessions. Changes in behavior in the classroom can usually be seen after 2-4 months of training.

How long do the Results of Training Last?

Long term follow-up with adults who, as children, received EEG feedback training for ADD/ADHD, indicates that the improvement appears to be permanent in most cases.

Can Neurofeedback be combined with other approaches?

Multi-modal approaches are recommended. Neurofeedback may improve your child's response to educational interventions, behavior management strategies, and individual and family therapies. Good nutrition should always be practiced and some children have special dietary needs and sensitivities. Children on medication when they begin training continue with their drugs until their parents, in consultation with their physician, determine that the dosage can be reduced as the training takes effect.

What Disorders are helped by Neurofeedback and how well does it work?

Every year there are new clinical reports about the usefulness of neurofeedback to address more types of human conditions. Certainly the most widely reported kinds of neurofeedback training have been done with ADD/ADHD kids and adults and also with various forms of substance abuse and addiction.

There is also a growing amount of literature telling of using neurofeedback training to assist conditions such as epilepsy, various forms of pain management including migraine, various kinds of immune disorders (Lyme Disease, AIDS), stroke and brain injury (closed and traumatic), learning disabilities, post traumatic stress disorder, Tourette's, PMS, Bruxism, depression, violent offenders, high blood pressure, multiple sclerosis, asthma, and even profound comas.

Are There Research Findings?

Yes. numerous studies have shown that distinctly identifiable EEG differences are present in children with learning difficulties and attention deficits with or without hyperactivity. EEG feedback training can be used to improve these problems (Joel Lubar, 1991, 1995, Sigfried Othmer 1991, Andrew Abarbanel 1995, M.B.Serman 1996,

M.A. Tansey 1990). In addition, a recent study in the New England Journal of Medicine found decreased glucose metabolism in those areas of the brain involved in control of attention and motor activity in adults with ADHD with childhood onset.

Can Adults Benefit?

Yes. ADD symptoms do not necessarily go away as a person gets older. Adults can also benefit from neurofeedback training to the same extent as children. They can achieve long term improvement in attention span, impulse control, reading, listening skills, and time management. In addition, many adults also want assistance with stress and tension. For decreasing tension, neurofeedback of the brain waves can be combined with biofeedback. Adolescents and adults can learn to control their physiology through biofeedback (including heart rate, respiration, muscle tension and alertness). This control decreases tension and significantly improves their work efficiency and overall well-being.

Why does Neurofeedback Training work?

After the raw brainwave data has been very rapidly processed with today's powerful microcomputers the results are presented to the person in various ways including on a computer screen and/or sounds (feedback). This enables the person to perceive things about his/her own brain that cannot be known otherwise. The brain (person) thus has information available about its own internal functioning that could not be provided in any other way. It uses the added information to make adjustments to itself. This is essentially the same process by which we learn to sing, drive cars, etc. It is a form of operant conditioning.

Is Neurofeedback only for "problems"?

Quite the contrary. Another major focus of neurofeedback research is to develop enhanced performance. In fact, over 20 years ago there was a "fad" about Alpha training. Professional work along these lines has continued and there is now much better science and more understanding underlying this work. In actuality, there is not that much difference between improving the performance of a "normal" individual and working with someone who has ADD. Many of the techniques used with "problems" are really trying to find ways to teach people to self-regulate their functions and thus better realize their innate potential and improve their performance. These techniques can help us all.