Biofeedback Enhances ADHD Treatments

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Biofeedback, a therapy in which patients are taught to control physiologic functions such as heart rate, muscle tension, and even their brain waves, is emerging as an effective treatment for attention deficit hyperactivity disorder (ADHD). And new research suggests that it may be especially beneficial to patients who can't tolerate or don't benefit from often-used stimulant medications.

Although prescribing drugs such as Ritalin and Adderall are the most common way of managing ADHD -- and bring improvement in about 80% of patients, says the American Psychiatric Association - they are not without problems. Many children taking them suffer side effects such as sleep problems, weight loss, jitters, and stomach upset, and nearly half of those with some types of ADHD don't respond to the drugs at all. Some experts are also concerned with their long-term use.

But a new study, published in the December issue of Applied Psychophysiology and Biofeedback, indicates that ADHD kids who had weekly sessions of biofeedback therapy for a year were able to reduce or eliminate their medication - and maintained the same level of improvement in focus and concentration as when they had been on drug therapy.

Vincent J. Monastra, PhD, of the FPI Attention Disorders Clinic in Endicott, N.Y., studied 100 children between 6-19 with ADHD for a year, all of whom were taking Ritalin and had school and family counseling. But half of the children also had weekly EEG biofeedback therapy, in which they were hooked to a device that measures the activity of their brain waves. "At the conclusion of treatment, all of those who underwent biofeedback were able to cut their medications by at least half - and still enjoy the improvements they got from the drugs. And about 40% were able to discontinue their medication," he tells WebMD. "The kids who didn't get biofeedback needed to continue medication to sustain improvements."

Why biofeedback, which has shown success in treating a host of conditions including migraine and other headaches, chronic pain, digestive problems, hypertension and substance abuse? "Studies show that about 90% of ADHD kids have an under-arousal in activity in the front lobe -- the region of the brain that is involved in sustained attention, focus, concentration, and problem-solving," Monastra says. With biofeedback, the theory goes, ADHD patients can be "taught" to bolster activity in these brain areas.

In these sessions, Monastra's study participants were placed in front of a video screen whose characters moved only when the children produced a short but sustained burst of activity in those areas of the brain thought to be under-aroused. In essence, the 51 patients who got biofeedback played a video game that continued only when they exercised the portion of their brain that is deficient in the ability to focus and stay attentive.

"It's like physical therapy for the brain," explains Monastra, who has studied biofeedback's effect on ADHD for several years. "Every time they produced a half-second burst of activity over the frontal lobe, they were reinforced by the screen to continue."

After a year of study, the children in both groups showed improvement in attentiveness from medication and other treatments. But what happened when the researcher abruptly stopped their medication for a full week?

"If you didn't have the biofeedback and I took way your medicine," says Monastra, "you were back to square one -- your scores from a very thorough evaluation and medical exam indicated that you had significant problems. But if you had received biofeedback, scores on behavioral ratings of teachers and parents, scores on attention and EEG tests measuring brain activity remained in the normal range of what had been achieved with the drugs. In other words, the kids who got biofeedback maintained the gain they achieved with medication, even without the medication."

Monastra tells WebMD that he isn't suggesting that biofeedback be used instead of medication, but it might offer new hope to many patients. "There are those ADHD children who don't respond to the medications, or they develop side effects that really get in the way of their treatment, or they come from families with a history of substance abuse. For them, this appears to be a great alternative."

According to a recent study in Psychiatric Times, biofeedback is used at some 1,500 clinics and treatment centers for various psychiatric applications -- including ADHD. The Association for Applied Psychophysiology and Biofeedback reports that when used to treat ADHD, up to 80% of patients show "significant improvement in the condition and a marked reduction in medication requirements." A biofeedback session typically costs $60 to $150 and lasts about an hour, says Monastra.

"I have treated thousands of ADHD patients with biofeedback since the 1960s and most of them have wound up not needing their medication," says George Von Hilsheimer, PhD, who runs a biofeedback treatment center in Florida that specializes in treating ADHD patients. "You are training the brain to respond, a little at a time. It's like teaching a child how to walk. They get a little more success with each step." SOURCES: Applied Psychophysiology and Biofeedback, December 2002 o Vincent J. Monastra, PhD, director, the FPI Attention Disorders Clinic, Endicott, N.Y. o George Von Hilsheimer, PhD, director, The Biofeedback Center, Maitland, Florida o Psychiatric Times, February 2002 o The Association for Applied Psychophysiology and Biofeedback.