

A comparison of eeg biofeedback and psychostimulants in treating attention deficit/hyperactivity disorders

Treatment of AD/HD has traditionally involved use of psychostimulants and / or behavioral interventions. Among the psychostimulants, Ritalin (methylphenidate), Adderall (dextroamphetamine), and Cylert (pemoline pemoline) are the most commonly prescribed medications, respectively. Approximately seventy to eighty percent of children with AD/HD appear to respond favorably to psychostimulants; primary areas of improvement consisting primarily of attention span, impulse control, and reduced motor activity. Psychostimulants however, as with any medication, has its drawbacks. The most serious shortcoming associated with the use of psychostimulants in the treatment of AD/HD is the impermanence of their effects unless the patient is willing to take the medication indefinitely. Side effects of psychostimulants also include loss of appetite, insomnia, increased anxiety, irritability, stomach irritation, and headaches. A potentially more serious, but infrequent, side effect of psychostimulants involves the possible development or increase in tics. Long-term compliance rates are also typically poor among individuals prescribed psychostimulants. For example, many adolescents actively resist taking psychostimulants whether or not the medication has been helpful, therefore continuing to experience significant AD/HD symptoms impairing their social, emotional, academic and / or vocational functioning.

In a study comparing the use of neurofeedback versus the use of psychostimulants to treat AD/HD, neurofeedback was found to produce a significant reduction in both cognitive and behavioral symptoms of AD/HD, after only twenty treatment sessions completed over a period of four to seven weeks. Individuals treated with neurofeedback manifested significant improvements in attention, speed of information processing, impulse control, and consistency of attention as measured by the Test of Variables of Attention

(TOVA). Mothers of individuals treated with neurofeedback confirmed the reduction in AD/HD symptoms. Parents and teachers of these individuals also reported significant improvements in social behavior and school performance. Moreover, the improvements were evident in far fewer than forty to eighty sessions, typically cited as the expected course of treatment with biofeedback for AD/HD, thus allowing for conservation of health care resources. Neurofeedback is a cost effective alternative to long-term use of medication, since it results in a lasting symptom reduction, versus the life-long maintenance of symptoms with medication.

Neurofeedback has been found to result in significant increases in IQ and reductions in parental reports of inattentiveness in children diagnosed with AD/HD, after as little as twenty half-hour sessions. In as few as thirty neurofeedback sessions, a significant reduction in theta wave amplitude was found, along with an increase in attention span as measured by the TOVA and improved scores on the Freedom from Distractibility (FD) factor from the Wechsler Intelligence Scale for Children-Revised (WISC-R).

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