

## **Attention-Deficit/Hyperactivity Disorder: Controversies and Key Findings**

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Unless one has been avoiding newspapers, magazines, and television commentary in the last few years, he or she knows that attention-deficit/hyperactivity disorder (ADHD) is the subject of enormous controversy and disagreement. Is a tidal wave of ADHD emerging? Does it appear only in the U.S., or other cultures, too? Is it a real disorder or a label used to brand exuberant children? Why is medication on the increase for this condition, and do the stimulant medications used for treatment actually promote dependence on pills?

ADHD is the newest in a long list of names for problems in attention, impulse control and excessive motor behavior. Such behaviors became salient when nations began compulsory education in the 19th Century. Difficulties in these areas are extremely common in young children, so that it is essential to distinguish normal variation from truly disordered functioning. The actual prevalence of ADHD is between 3%-7% of the school-aged population, with boys twice to three times as likely to have the disorder. As recent research has shown, ADHD is not restricted to the U.S.; it is a worldwide problem.

An absolutely crucial point is that ADHD requires thorough evaluation, far more than a brief office visit. What is needed are observations from parents and teachers, using normed scales, to ascertain the severity of the problems; a thorough history of the child in order to eliminate the many alternative conditions that mimic ADHD and a medical evaluation to rule out neurological conditions, such as seizure disorders. No lab measure or blood test can diagnose ADHD. Rather, it is a diagnosis requiring considerable time and effort on the part of those people who know the child well.

Why is ADHD being diagnosed so much these days? Part of the reason is that children formerly thought of as lazy or unintelligent are now getting accurate diagnoses. Yet there is also the possibility of overdiagnosis, especially if assessments are cursory and quick. Whether features of modern society are yielding decreases in attention span for all children is unknown at present.

If ADHD is diagnosed well, the individual is likely to display impairments in areas of functioning that are crucial for optimal development: academics, family interactions, peer relations, and independence. ADHD also yields high risk for accidental injury, meaning that it is a condition that has serious consequences. Genes play a large role in ADHD symptoms. In fact, this disorder runs heavily in biological families and is more heritable than is schizophrenia or depression. In other cases, low birthweight, maternal substance abuse and environmental toxins (e.g., lead) may play contributing roles. Brain imaging studies are now beginning to pinpoint the critical brain regions and pathways involved in the display of ADHD. The frontal lobes, which facilitate the "executive functions" of planning, regulating and monitoring behavior, are implicated, along with frontal connections to other brain regions. Despite the highly biological nature of the disorder, parenting and

teaching strategies are still important in terms of helping the child to regulate his or her attention, organization, and self-regulatory skills.

Although it was commonly thought that as children matured and reached puberty they outgrew ADHD, it is now known that ADHD often lasts well beyond childhood. In fact, children with ADHD are at clear risk for delinquency, substance abuse and low educational attainment as well as attentional and social problems that persist into adulthood. The need for effective treatments is therefore urgent.

A great many studies have shown that stimulant medications (e.g., Ritalin, Dexedrine and new, longer-acting formulations) show positive results in the vast majority of children with ADHD who use them. In fact, children with ADHD who take medications therapeutically may actually have a reduced risk for substance abuse problems in adolescence and beyond. Medications are not a cure, however, as their effects appear to dissipate quickly when the treatment is stopped.

The only other established treatment modalities for ADHD include behavioral consultation with parents and teachers and social skills training programs. Combinations of medication and psychosocial treatment are the most likely to promote normal-range functioning. Crucially, when such multimodal treatments are effective, a key explanatory factor is that parents become less negative and more consistent in their parenting styles. Thus, even for a condition as genetically based as ADHD, home and school environments are crucial for success.

With increased knowledge regarding the brain-related basis of ADHD, and increased understanding of how environments can be programmed for success, the future should witness the development of more specific and more long-lasting multimodal treatments for this important, impairing, and very real condition.

*This article is reprinted from the Spring 2003 issue of The Help Group's HelpLetter.*