EFFECTIVE INTERVENTION

Intervention Strategies for
Students with ADHD

Combining medication with behavioral and educational interventions tends to yield the best results for ADHD students.

George J. DuPaul and George P. White

To be an effective principal requires a broad base of knowledge in such critical areas as scheduling, curriculum, financial management, and special education. However, while principals have received professional training in school management and curricular issues, many report that they have had little training in special education. Yet they also report that they are spending much of their time dealing with students who have special needs, particularly those diagnosed with attention-deficit/hyperactivity disorder (ADHD).

Understanding ADHD

ADHD is a disruptive behavior disorder characterized by levels of inattention (e.g., difficulty concentrating on schoolwork), impulsivity (e.g., frequently interrupting conversations or activities), and/or overactivity (e.g., difficulty remaining seated when required to do so) that are well beyond what is expected and appropriate for a given child’s gender and age. Approximately 3 percent to 7 percent of elementary school-aged children in the United States have this disorder, which typically exhibits its first symptoms during the preschool or early elementary school years. Boys are three times more likely to be diagnosed with ADHD than are girls.

There are three subtypes of ADHD behavior:

- Individuals who exhibit problems only with inattention and concentration;
- Individuals who exhibit problems only with hyperactivity and impulsivity; and
- Individuals who exhibit problems in both areas.

Growing evidence indicates that these symptoms result at least partially...
from genetic factors. The brains of those with ADHD may differ with respect to the balance of certain chemicals, referred to as neurotransmitters, as well as the size and operation of specific brain components, such as the prefrontal cortex. But even though genetic and biological factors account for ADHD symptoms to a large degree, organizational factors, such as the nature of classroom tasks and behavior management style at home and school, affect the expression of this disorder. Therefore, it is best to view ADHD as having both biological and environmental influences, indicating that both medical and psychosocial treatments could be helpful.

Characteristics of Students with ADHD

The inattentive, impulsive, and hyperactive behaviors that characterize ADHD often lead to significant academic and social difficulties at home and school. Students with this disorder frequently have grades that are below their potential, may be at higher than average risk for retention and dropout, and are less likely to pursue post-secondary education. About 25 percent of children with ADHD also have learning disabilities. Children with ADHD typically have difficulty making and keeping friends, primarily because of their high levels of verbal and physical aggression. Family relationships also can become problematic because youngsters with this disorder are less likely to follow parental directives and are more likely to argue with adults. Approximately 50 percent to 60 percent of those with ADHD exhibit significant symptoms of other disruptive behavior disorders, including oppositional defiant disorder (i.e., excessive defiance of authority figures and problems following rules) and conduct disorder (e.g., stealing, fighting, and truancy). Thus, interventions must focus not only on ADHD-related behaviors, but on improving academic and behavioral functioning.

Effective Interventions for ADHD

The most effective treatments for reducing the symptomatic behaviors of ADHD are central nervous system (CNS) stimulant medications and behavior modification procedures. Although most children respond positively to medication, the combination of medication and behavioral interventions tends to yield the greatest improvement in their social skills and school performance.

Medication. CNS stimulants for ADHD include methylphenidate (Ritalin, Concerta, Metadate), dextroamphetamine (Dexedrine), and a mixed amphetamine compound (Adderall). Numerous studies have found that stimulants enhance attention, reduce impulsive behavior, and increase academic productivity among the majority of children treated. Side effects are relatively benign and include appetite reduction, insomnia, headaches, and stomachaches.

Several other psychotropic medications are available for those children who do not respond to stimulants or who experience more significant side effects. These include atomoxetine (Strattera), bupropion (Wellbutrin), and clonidine (Catapres).

The response to medication varies with individuals and requires ongoing monitoring to determine the optimal medication and dosage. Because medication should always be used in combination with academic and behavioral interventions, it is advisable to have the school nurse and school psychologist keep current on research related to medication and to provide information to the staff.
**Behavioral Interventions.** Classroom behavioral interventions involve systematic changes to antecedent events (i.e., activities occurring prior to a target behavior) and/or consequent events (i.e., activities that follow a target behavior). The most effective treatment plans are those that include a balance between antecedent-based and consequent-based procedures.

Examples of antecedent-based strategies include posting rules, modifying the length of assignments, providing students with choices for task completion, and peer tutoring. Possible consequent-based procedures include point or reward systems (e.g., earning privileges at school or at home, based on appropriate school behavior), daily report cards, and time out from positive reinforcement. Behavioral interventions are particularly effective when they are used consistently in both home and school settings.

**Academic Interventions.** Since many students with ADHD experience significant academic difficulties, and given that many young children with ADHD enter kindergarten with below-average skills, academic intervention strategies should be addressed as early as possible. Interventions such as peer tutoring and computer-assisted instruction have been found effective in improving the academic performance and classroom behavior of children with ADHD. In some cases, they may require individualized, direct instruction in specific academic skills in order to make significant progress.

**Special Education and Section 504.** The diagnosis of ADHD does not by itself qualify a student for special education services. However, many students with ADHD meet the criteria for an educational disability and may benefit from special education services.

Another support system that might benefit some students with ADHD is a Section 504 Plan. Federal law mandates these plans for individuals with physical or mental impairments that interfere with a major life activity, such as learning. A 504 Plan for a student with ADHD might include preferential seating in the classroom, reduction in length of assignments, extra time (or no time limits) during testing, or testing in a quiet space to compensate for distractibility.

**Helping Students with ADHD**

The more principals know and understand the needs and characteristics of students with ADHD, the better they will be prepared to serve them in a supportive environment. When helping teachers implement effective interventions, the following points should be kept in mind:

- Children with ADHD are “consistently inconsistent” (i.e., exhibit highly variable levels of self-control). Teachers must realize that there will be good days and bad days, even when effective treatments are being used.
- Medication is not a panacea; stimulants like methylphenidate can help children to be more focused and less impulsive, but strategies are still necessary to help them make academic progress and learn to control their own behavior.
- Children with ADHD are very different in their needs and their reactions to specific treatments; what works for one child will not necessarily work for another.
- Many of the strategies that work for children with ADHD (e.g., peer tutoring) also help other children; thus, classwide strategies may be an option for teachers reluctant to implement interventions directed to the needs of one student.
- Because effective academic instruction often leads to behavioral improvement, educational interventions should be among the first choices in a child’s treatment plan.

**WEB RESOURCES**

Children and Adults with Attention-Deficit Hyperactivity Disorder (CHADD) is the nation’s leading nonprofit organization serving individuals with ADHD. Its Web site is a comprehensive information source for parents of children with ADHD. [www.chadd.org](http://www.chadd.org)

The National Resource Center for Disabilities and Gifted Education distributes literature and information on the development and education of those who have disabilities and/or who are gifted. [www.eric.ed.gov](http://www.eric.ed.gov)

**References**


George J. DuPaul is a professor of school psychology at Lehigh University in Bethlehem, Pennsylvania. His e-mail address is gjd3@lehigh.edu.

George P. White is a professor of education and coordinator of the educational leadership program at Lehigh University. His e-mail address is gpw1@lehigh.edu.