Attention deficit hyperactivity disorder (ADHD) is defined as a common neuropsychiatric disorder by the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition*. Diagnostic features include a persistent pattern of developmentally inappropriate levels of inattention and/or hyperactivity-impulsivity, resulting in significant impairment in 2 or more settings. The disorder is further defined as having an onset prior to age 7 years. Many children, however, particularly those with primarily inattentive-type ADHD, may be symptomatic prior to age 7 years but begin to show impairment only when academic demands and schedules increase in later childhood and adolescence.

Estimates of prevalence vary, but the American Academy of Pediatrics (AAP) reports that 8% to 10% of school-aged children have ADHD. Among adults, 4% to 5% are believed to have the disorder. Undiagnosed ADHD in adulthood can be associated with depression, marital and job dysfunction, and anger-management issues that might prompt adult patients to visit a psychiatrist.

**Manifestations During School**

Children with ADHD often have marked impairment in school. They have trouble sitting still, paying attention, and processing complex tasks. For example, children with ADHD are not able to follow through with the routine instruction from teachers to “sit down, take out your math book, turn to page 5, and answer the first 10 questions.” Children with ADHD frequently have problems with writing, as it is a multifaceted and complex cognitive task that also requires fine motor abilities. Poor academic achievement among youth with ADHD is well documented. Patients with ADHD have lower grade point averages and are 3 times less likely to complete high school; only 5% receive a college degree.

**Manifestations Outside of School**

Although the impact of ADHD on school performance is clear, the impact of ADHD on other domains of functioning is less well understood. In addition to problems with school performance, most patients with ADHD experience impairments throughout the day at home and in social settings. These include:

- A sense of inner restlessness
- Disorganized work (or homework)
- Inability to work independently
- Undertaking of risky behaviors
- Poor self-esteem
- Poor peer relationships
- Clashes with authority
- Frequent injuries

The functional result of these problems can profoundly affect family life as well as peer relationships. The families of children with ADHD experience increased parental stress and anxiety and an associated spectrum of parental responses: anger, frustration, depression, and social isolation. The overall impact of ADHD on parents’ time and emotions equals or exceeds that of a number of serious childhood illnesses, such as asthma, juvenile rheumatoid arthritis, and epilepsy. Parents of children with ADHD are also at risk for marital problems and substance abuse.

Families also suffer from the social and peer problems that children with ADHD encounter. Approximately 50% of children with ADHD experience social problems and are frequently severely affected. It is not uncommon for children with ADHD to be excluded from birthday parties, sleepovers, play dates, and other events that are critical to normal child development. A number of investigations report serious problems with a constellation of negative behaviors in older children with ADHD. Substance abuse, high-risk sexual activities, smoking, fistfights, vandalism, school absences, and stealing have been observed in teens with ADHD (Figure). Teens with ADHD are also more likely to be involved in serious motor vehicle accidents compared with control subjects.

**Figure. Outcomes of ADHD Patients Outside of the Academic Setting**

![Outcome of ADHD Patients Outside of the Academic Setting](image)

*Based on a presentation given by Dr. Gephart at a symposium held in conjunction with the American Academy of Pediatrics 2003 National Conference and Exhibition.*
ADHD can promote a host of medical problems, such as physical injuries, sexually transmitted diseases, unwanted pregnancy, and smoking-related diseases.

Despite the potential for difficulties outside of the classroom, clinicians sometimes fail to view ADHD as emphasized in the AAP ADHD guidelines—a chronic disorder with impairment throughout the day (Table 1). Clinicians consistently provide comprehensive care for chronic diseases, such as asthma, diabetes, and major depression, yet children with ADHD frequently do not receive comprehensive care that addresses their problems throughout the day. There are many reasons for this: (1) ADHD is still widely viewed as a school-time disorder; (2) Stimulant medications, the traditional mainstay of treatment, are short-acting and are not readily given throughout the day; (3) Historically, available long-acting medications with proven efficacy have been lacking; (4) Although the short-acting stimulant medications can be used multiple times per day, parents and physicians are reluctant to use them due to concern about insomnia, appetite suppression, and the potential impact on weight and growth. These concerns have lead to underdosing and use of “drug holidays”; and (5) Despite data that suggest the treatment of ADHD with medication may lead to a decreased risk of substance abuse, parents and clinicians have been exceedingly cautious in their use of stimulants for fear that stimulants will be abused or diverted to adults or other children.

**Assessment of ADHD**

The effects of ADHD on academic achievement, classroom behaviors, family and social relationships, self-esteem, and overall functioning can be far reaching. Unfortunately, no instruments that are currently used fully assess the nature or degree of impairment in children with ADHD. Information from the parent and the school can help the clinician to assess the effects of ADHD on the child’s life, so the approach to treatment is not simply to medicate but also to involve others who are close to the child. The patient, the family, school counselors, and psychologists may all serve as resources in establishing target outcomes, which must be periodically assessed (Table 2).

Although the assessment of the partially responsive patient with ADHD is beyond the scope of this article, the lack of an expected response raises important questions. Is the patient adhering to the medication regimen? Is the diagnosis correct? Should coexisting problems, such as anxiety, depression, or learning disabilities, be addressed more aggressively?

**Summary**

Clinical evidence demonstrates that ADHD affects our patients throughout the waking day. Clinicians need to determine what the waking day is for our patients: school, homework, sports, and extracurricular activities frequently make for very long and busy days. Medication management strategies for ADHD need to address the needs of patients for the entire day, in keeping with the AAP guidelines for ADHD.

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**Table 1. American Academy of Pediatrics Guidelines for Treatment of ADHD in Children Aged 6 to 12 Years**

1. Clinicians should establish a treatment program that recognizes ADHD as a chronic condition.
2. The treating clinician, parents, and child, in collaboration with school personnel, should specify appropriate target outcomes to guide management.
3. The clinician should recommend stimulant medication* and/or behavioral therapy as appropriate to improve target outcomes in children with ADHD.
4. When the selected management for a child with ADHD has not met target outcomes, clinicians should evaluate the original diagnosis, use of all appropriate treatments, adherence to the treatment plan, and presence of coexisting conditions.
5. The clinician should periodically provide a systematic follow-up for the child with ADHD. Monitoring should be directed to target outcomes and adverse effects by obtaining specific information from parents, teachers, and the child.

* These guidelines predate the FDA approval of atomoxetine, a nonstimulant therapy indicated for use in ADHD.

Data from American Academy of Pediatrics Committee on Quality Improvement and Subcommittee on Attention Deficit/Hyperactivity Disorder.

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**Table 2. Questions that Assess ADHD Symptoms Outside of School**

- Does your child have trouble waking and getting organized in the morning?
- Does your child forget or have difficulty completing homework?
- Can your child sit still during dinner?
- How much difficulty does your child have getting ready for and going to bed?
REFERENCES


MANAGING ADHD