

Practice Guidelines

Attention-Deficit/Hyperactivity Disorder: AAP Updates Guideline for Diagnosis and Management

Key Points for Practice

- Most children diagnosed with ADHD also meet criteria for another behavioral health disorder.
- Parent training in behavior management is strongly recommended for children up to middle school age with ADHD or behavior concerning for ADHD.
- School evaluation of children with ADHD can lead to accommodations and additional learning services to optimize academic performance.

From the AFP Editors

Attention-deficit/hyperactivity disorder (ADHD) is diagnosed in 7% to 8% of children. It affects academic achievement and socioemotional well-being. The American Academy of Pediatrics (AAP) updated guidelines to emphasize evaluation for comorbid conditions and overcoming systemic barriers to increase treatment equity.

Diagnosis

The average age at ADHD diagnosis is seven years. ADHD is twice as common in boys than it is in girls, which is partially explained by increased hyperactivity and impulsiveness in boys. Children who are at the younger end of their academic grade are more likely to be diagnosed with ADHD.

ADHD should be considered in children four years or older with academic or behavioral concerns and symptoms of inattentiveness,

hyperactivity, or impulsivity. The AAP supports the *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed., criteria requiring six or more symptoms (*Table 1*) for at least six months. Symptoms must occur in more than one social setting, including home, school, or day care, and be unexplained by age or another condition. For adolescents, symptoms must have been present before 12 years of age. Neuropsychological testing does not increase diagnostic accuracy.

PRESCHOOL-AGED CHILDREN

Diagnosing children four to six years of age is challenging because ADHD criteria overlap with age-appropriate behavior. Combining direct clinical observation and parent interviews with parent and teacher rating scales increases diagnostic accuracy. Parent training in behavior management (PTBM) is the primary treatment in this age group and should be recommended before making the diagnosis of ADHD.

ADOLESCENTS

ADHD can be difficult to identify in adolescents who show less hyperactivity and often minimize symptoms. Obtaining detailed teacher reports can be cumbersome because most adolescents have multiple teachers and behavior can vary across settings.

COMORBID CONDITIONS

Most children with ADHD also meet criteria for another behavioral disorder. ADHD symptoms can mask language and learning disorders as well as overlap with mood disorders. The AAP strongly

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This series is coordinated by Michael Arnold, MD, contributing editor.

A collection of Practice Guidelines published in AFP is available at <https://www.aafp.org/aafp/practguide>.

CME This clinical content conforms to AAFP criteria for CME. See CME Quiz on page 11.

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TABLE 1

Diagnostic Criteria for Attention-Deficit/Hyperactivity Disorder**Inattention***

Appearing not to listen
 Avoiding tasks requiring sustained attention
 Careless mistakes
 Difficulty organizing
 Difficulty sustaining attention
 Easily distracted
 Failing to finish tasks
 Forgetfulness
 Losing things

Hyperactivity and impulsivity*

Always "on the go"
 Blurting out answers before questions are completed
 Difficulty waiting for turn
 Excessively talkative
 Fidgeting
 Inability to play quietly
 Inability to stay seated
 Interrupting or intruding on others
 Restlessness

Note: Patients can meet criteria for inattention, hyperactivity and impulsivity, or both.

*—Six or more symptoms must persist for at least six months, and have been present before 12 years of age.

Information from reference 1.

recommends children with ADHD be evaluated for mood disorders and past trauma. Screening for substance abuse is especially important in older children and adolescents because effects of marijuana use can mimic ADHD symptoms. Whether treated or not, patients with ADHD are at higher risk of early death, suicide, and comorbid behavioral health or substance use disorders.

Treatment**PSYCHOSOCIAL**

Parent Training. PTBM is strongly recommended for parents of preschool to middle school children with behavioral concerns, including ADHD. PTBM addresses age-appropriate expectations, strengthens parent-child relations, and supports behavior change via positive reinforcement and extinction techniques. Therapists teach PTBM

to parents in groups or individually. Conflict between parents or parental separation can limit the benefits. Although PTBM is generally low cost, insurance coverage is variable. A modified version for adolescents with a family therapy focus has less evidence of benefit.

Training Interventions. Training interventions focus on improving organization, time management, and interpersonal skills and work best for middle school and high school children. These interventions have some supporting evidence, but less than PTBM. Examples include coaching, practicing, and in-depth longitudinal interventions.

Alternative Modalities. Alternative therapies, such as mindfulness, cognitive behavior therapy, diet modification, biofeedback, supportive counseling, and use of cannabidiol oil, have not shown benefit in patients with ADHD. Although external trigeminal nerve stimulation has been approved by the U.S. Food and Drug Administration (FDA), there is no evidence for long-term benefit or safety.

MEDICATION

Stimulant medications are the first-line option because more than 90% of patients show benefit. Most states require prescription drug monitoring and surveillance for misuse or diversion. Neither ADHD symptom categories nor pharmacogenetic tools are helpful in guiding medication choice.

Preschool. Medication should only be considered in preschool children with at least nine months of moderate to severe dysfunction and minimal PTBM benefit. Methylphenidate (Ritalin) is recommended for this age group because it has the strongest evidence for safety and effectiveness, although amphetamine is the only medication approved by the FDA. Methylphenidate is metabolized more slowly in young children and lower doses should be used to start.

Elementary and Middle School. There is strong evidence that stimulants are effective for preadolescents. Nonstimulant medications, including atomoxetine (Strattera) and alpha-2 agonists (extended-release guanfacine [Intuniv] and clonidine), also have moderate evidence of benefit.

Adolescents. Stimulants have the strongest evidence for the treatment of adolescents with ADHD, but risks of misuse and diversion are high. Documentation of surveillance is most important in this group.

Dosing. Neither weight- nor height-based dosing is effective, so medication should be titrated

to balance benefit and adverse effects. Stimulant dose can be adjusted weekly, whereas nonstimulants should be titrated more slowly. Although only alpha-2a agonists are FDA approved as adjuncts to stimulants, atomoxetine also has evidence of moderate benefit when added to a stimulant.

Adverse Effects. Stimulants can cause anorexia, abdominal pain, headache, and sleep difficulties. Although blood pressure and pulse rates are usually minimally affected, they are significantly increased in 5% and 15% of children who take stimulants. Stimulants have not been shown to increase sudden death risk, but patients with cardiac conditions may be at higher risk. Stimulants reduce adult height up to 2 cm, primarily from the first two years of treatment.

In addition to growth reductions similar to stimulants, atomoxetine can cause somnolence, anorexia, and gastrointestinal upset. Slow dosing adjustments can reduce adverse effects.

Alpha-2a agonists can cause somnolence, dry mouth, dizziness, irritability, headache, bradycardia, hypotension, and abdominal pain. Gradual dose lowering is important to avoid rebound hypertension.

School-Based Support

Because ADHD affects school performance, supportive services are essential to student achievement. Most students with ADHD are eligible for government-mandated accommodations, and some qualify for additional learning services. Schools can provide interventions to promote independent success such as daily report cards, point systems, and remediation.

ADHD qualifies as a disability for 504 plans in most schools. These plans outline accommodations designed to optimize learning for children with disabilities, including extended test time,

reduced homework, extra study materials, and supplemental class notes.

Additional school-based support services such as speech or occupational therapy are provided through individual education plans. Children qualify for these support services when ADHD severity impairs their ability to learn.

Systemic Barriers to Care

Almost one-fourth of children diagnosed with ADHD receive no treatment, most commonly Latino and black children. Because specialty care is more expensive, the AAP recommends increasing primary care management of ADHD. Confirming insurance support of primary care management may require coding variation. Advocacy to improve payment systems, reduce medication restrictions, and increase education will be necessary to overcome inequities.

Reference

1. *Diagnostic and Statistical Manual of Mental Disorders*, 5th ed. American Psychiatric Association; 2013:59-60.

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