

Attention Deficit Hyperactivity Disorder

Attention deficit hyperactivity disorder (ADHD) is a disorder that manifests in childhood with symptoms of hyperactivity, impulsivity, and/or inattention. The symptoms affect cognitive, academic, behavioral, emotional, and social functioning

Prevalence — The reported prevalence of ADHD in children varies from 2 to 18 percent depending upon the diagnostic criteria and the population studied (e.g., primary care versus referral). The prevalence in school-age children is estimated to be between 9 and 15 percent, making it one of the most common disorders of childhood.

Co-morbid disorders — Children and adolescents with ADHD frequently have co-morbid psychiatric disorders including (but not limited to) oppositional defiant disorder (ODD), conduct disorder, depression, anxiety disorder and learning disabilities. The co-morbid conditions can be primary or secondary (e.g., exacerbated by the ADHD). In either case, they require treatment independent of the treatment for ADHD

Core Symptoms

Hyperactivity and impulsivity — Hyperactive and impulsive behaviors almost always occur together in young children. The predominantly hyperactive-impulsive subtype of ADHD is characterized by the inability to sit still or inhibit behavior.

Symptoms of hyperactivity and impulsivity may include:

- Excessive fidgetiness (eg, tapping the hands or feet, squirming in seat)
- Difficulty remaining seated when sitting is required (eg, at school, work, etc)
- Feelings of restlessness in adolescents or inappropriate running around or climbing in younger children
- Difficulty playing quietly
- Difficult to keep up with, seeming to always be "on the go"
- Excessive talking
- Difficulty awaiting turn
- Blurting out answers too quickly
- Interruption or intrusion of others

Inattention — The predominantly inattentive subtype of ADHD is characterized by reduced ability to focus attention and reduced speed of cognitive processing and responding. Children with the inattentive subtype often are described as having a sluggish cognitive tempo and frequently appear to be daydreaming or "off task".

Symptoms of inattention may include:

- Failure to provide close attention to detail, careless mistakes
- Difficulty maintaining attention in play, school, or home activities
- Seems not to listen, even when directly addressed
- Fails to follow through (eg, homework, chores, etc)
- Difficulty organizing tasks, activities, and belongings
- Avoids tasks that require consistent mental effort
- Loses objects required for tasks or activities (eg, school books, sports equipment, etc)
- Easily distracted by irrelevant stimuli
- Forgetfulness in routine activities (eg, homework, chores, etc)

Behavioral therapy:

A recent large study showed that behavioral therapy by itself or even in conjunction with medication offered no benefit over medication itself. But, this does not negate the importance of behavioral therapy as an adjunct to successful parenting of the challenging child. It also is of clear importance in children who exhibit comorbid symptoms of anxiety, depression, conduct, oppositional or self-esteem issues.

Behavioral therapies include:

Parent behavioral therapy: for young and school-age children with ADHD behavioral therapy for parents can improve not only core symptoms but also oppositional issues and functional impairment.

The positive parenting program ("triple P"): as a parent mediated intervention that aims to improve parent-child interactions and parenting behaviors in order to reduce behavioral issues.

Cognitive behavioral therapy (CBT): CBT utilizes a skills-based approach to achieve behavioral modification goals.

ADHD coaching: these coaches are specialized mental health counselors who help clients develop the skills and strategies they need to achieve their personal goals and reach their full potential.

School accommodations: children with ADHD are entitled to additional help under the primary education laws.(Individuals with Disabilities Education Act and Section 504 of the Rehabilitation Act)

Alternative Therapies ("Anything but Ritalin!")

Some alternative therapies are supported by research and others are not

Exercise: Exercise releases hormones that improve mood. For kids with ADHD, it can also boost attention. The researchers found that a 30 minute exercise session improved executive function tasks (organization) like planning and prioritizing.

Omega supplements: Some kids with ADHD may have lower amounts of Omega fatty acids in their blood. These fatty acids help neurons in the brain to activate more effectively. Foods like fish, nuts, flaxseed and certain vegetables are high in Omega fatty acids. They are also available as supplements. Research has shown that children who are taking such supplements have a small improvement in their ADHD symptoms. Unfortunately, doses shown to be effective are extremely high and hard for children to tolerate. There is some research that shows that a product (Vayarin or Zoom) are well tolerated ways of delivering Omega fatty acids to the target organ (brain). This is available at <https://www.vayazoom.com/>.

Changes in Diet: Kids with ADHD are more likely to have allergies and food sensitivities. Certainly, foods that make children feel poorly will affect their behavior and worsen their ADHD symptoms. A child can test negative for an allergy but still have a food sensitivity. Identifying food sensitivity usually involves restricting the diet significantly and gradually adding back foods looking for changes in symptoms as they are added back. Cutting refined sugar, high fructose corn syrup, food with dyes and other processed foods had not shown to be uniformly beneficial but are recommended for all children.

Biofeedback Therapy: This therapy provides a computer interactive feedback system where the child's attention is evaluated and prompts are used to sustain it. It requires 40 sessions for success and also requires ongoing therapy after success is achieved.

A review of a number of other alternative therapies presented in a humorous and easily read fashion was written by the mother of a 12-year-old. Buzz: A Year of Paying Attention (Katherine Ellison)

Medication:

Medications have proven to be a safe and effective method of reducing the core symptoms of ADHD. There are very few situations where they may be considered medically inadvisable. A small number of children find the side effects too intrusive, at the doses found to be effective.

Stimulants (methylphenidate, amphetamines):

These medications are available in both short acting (duration 3 to 5 hours) and longer acting (8 to 12 hours duration) formulations. We use both these preparations to fit the particular challenges. Most children going to a full day of school need longer acting medication to get them through the school day and coverage for afterschool (homework). Shorter acting medications are used, sometimes, to boost at the end of the day or for challenging activities on weekends when longer acting medication is not being used. Both methylphenidate and amphetamines are available as short acting and are available, generically. There are a wide variety of long acting medications that all vary, only, in their release characteristics. Many of these are also, available, generically.

Both groups of stimulants share similar side effect profiles. But if your child experiences a significant side effect with one there is a good likelihood he/she may not with the other. Rarely, a child experiences a significant severe immediate reaction to the medication (fussiness, irritability, aggressiveness, moodiness) with the first dose. A switch to the other stimulant is almost always successful. Sometimes headaches and abdominal discomfort can occur and may lead to discontinuation, but are also uncommon.

The following 5 side effects occur with some frequency but are tolerable and we will provide workarounds that will allow the medication to continue because of the significant benefits.

1. *Appetite suppression.* Reduced appetite is common to both medications and occur in almost all children. It is a greater issue with long acting medication since it lasts through the lunchtime meal. It requires some creative parenting to get the necessary calories in at the nadir of medication effectiveness to maintain good growth. Good breakfasts including high-protein and complex carbohydrate foods are useful along with appropriate after school snacks and bedtime treats.

2. *Difficulty falling asleep.* Known as prolonged sleep latency, trouble settling down to sleep occurs in about half the children taking the medication. Techniques like soothing bedtime stories, sipping more milk (not chocolate) or using the over-the-counter medication melatonin may be useful. A good night's sleep is critical to subsequent days performance. So, please be sure to monitor. Sleep problems from medication frequently wear off with time but may reappear after medication holidays.

3. *Tics:* Sudden muscular jerks such as snorts, eye blinking, throat clearing or head bobbing can occur in small numbers of children on medication. We almost never see this in the older child who has had no other previous history of tics off medication. It is believed that the medications, only, uncover a propensity to tics occurring in many children with ADHD. They are, fortunately, infrequent.

4. *Rebound:* As medication starts to wear off (6 to 9 hours with long acting meds, 2 to 3 hours with short acting meds) some children experience irritability, headaches and anger. This, again, occurs in only small numbers of children. We have a variety of techniques to get around this phenomenon.

5. *Dysphoria:* While small numbers of children can become depressed or quite anxious on the medication, this is, fortunately, quite rare unless there is a preexisting mood disorder. It does respond, quickly, to medication discontinuation. But more subtly, and frequently over time only, patients can develop a flattening mood. They may complain of or not appear to be as cheerful and full of life, as usual. It may not be apparent to people (teachers) who do not know him/her well. Parents will miss this side effect because their next contact with their child after medication administration is, frequently, not until medication is wearing off. And, this side effect, sometimes, occurs in the presence of the dramatic improvement in school performance further masking the effects from the unobservant parent. We recommend parents administering medication on the weekends at least from time to time (unless they are already doing so) so they may observe the child and the effects of medication from the time it takes effect until it wears off. There are options to treat the dysphoria but we will always try to change the medication to an alternate medication, first.

There are no longer short-term effects on organ systems that require any regular blood work with the stimulant medication. Growth and blood pressure should be checked regularly.

Stimulants are the most effective medication for ADHD. Ninety five percent of children will respond to one of the above medications. Alternate medications like atomoxetine (Strattera), guanfacine (Intuniv), clonidine (Kapvay) and bupropion (Wellbutrin) are medicines with a much lower side effect profile but have a very marked reduced effectiveness for ADHD. Each of these medications might be reasonable substitutes if side effect profiles of stimulants are too severe. SSRIs have an adjunctive role in the treatment of children with ADHD.

Agenda for follow up visits and communications

1. Discuss and review your own observations, most recent teacher reports and the results of any rating scales since his/her last visit.
2. Share information about target behaviors and how they might have changed since the last visit.
3. Screen for new and coexistent conditions.
4. Review side effects and factors important in alleviating them.
5. Review your child's function at home including behavior and family relationships.
6. Review your child's function in school, especially related to academics, behavior and social interactions. Make sure you have information available directly from the child's teacher.
7. Discuss the effect on your child's self-esteem and review his academic, behavioral and emotional self-management scheme.
8. Assess and supplement your child's understanding of ADHD.
9. Discuss any current problems with organization and study skills, homework, anger and self-management.
10. Review and revise your child's treatment plan.
11. Make sure there is a system in place for communication among you, your child, his educator and physician.

More Information

www.chadd.org, www.add.org, www.aap.org, www.understood.org