

What Is ADHD?

ADHD is a condition of the brain that makes it difficult for children to control their behavior. It is one of the most common chronic conditions of childhood. It affects 4% to 12% of school-aged children. ADHD is diagnosed in about 3 times more boys than girls. The condition affects behavior in specific ways.

Are There Different Types Of ADHD?

Not all children with ADHD have all the symptoms. The symptoms usually are classified as the following types of ADHD:

- **Inattentive only** (*formerly known as attention-deficit disorder [ADD]*)—Children with this form of ADHD are not overly active. Because they do not disrupt the classroom or other activities, their symptoms may not be noticed. Among girls with ADHD, this form is more common.
- **Hyperactive/impulsive**—Children with this type of ADHD show both hyperactive and impulsive behavior, but they can pay attention. They are the least common group and are frequently younger.
- **Combined inattentive/hyperactive/impulsive**—Children with this type of ADHD show a number of symptoms in all 3 dimensions. It is the type that most people think of when they think of ADHD.

Common Coexisting Conditions in Children with ADHD

Your child may simply have a different condition or ADHD and another condition. Most children with a diagnosis of ADHD have at least one coexisting condition.

Common Coexisting Conditions Include:

- **Learning disabilities**—Learning disabilities are conditions that make it difficult for a child to master specific skills such as reading or math. ADHD is not a learning disability. However, ADHD can make it hard for a child to do well in school. Diagnosing learning disabilities requires evaluations, such as IQ and academic achievement tests, and it requires educational interventions.
- **Oppositional defiant disorder or conduct disorder**—Up to 35% of children with ADHD also have oppositional defiant disorder or conduct disorder. Children with oppositional defiant disorder tend to lose their temper easily and annoy people on purpose, and they are defiant and hostile toward authority figures. Children with conduct disorder break rules, destroy property, get suspended or expelled from school, and violate the rights of other people. Children with coexisting conduct disorder are at much higher risk for getting into trouble with the law or having substance abuse problems than children who have only ADHD. Studies show that this type of coexisting condition is more common among children with the primarily hyperactive/impulsive and combination types of ADHD. Your pediatrician may recommend behavioral therapy for your child if she has this condition.

- **Mood disorders/depression**—About 18% of children with ADHD also have mood disorders such as depression or bipolar disorder (formerly called manic depression). There is frequently a family history of these types of disorders. Coexisting mood disorders may put children at higher risk for suicide, especially during the teenage years. These disorders are more common among children with inattentive and combined types of ADHD. Children with mood disorders or depression often require additional interventions or a different type of medication than those normally used to treat ADHD.
- **Anxiety disorders**—These affect about 25% of children with ADHD. Children with anxiety disorders have extreme feelings of fear, worry, or panic that make it difficult to function. These disorders can produce physical symptoms such as racing pulse, sweating, diarrhea, and nausea. Counseling and/or different medication may be needed to treat these coexisting conditions.
- **Language disorders**—Children with ADHD may have difficulty with how they use language. It is referred to as a pragmatic language disorder. It may not show up with standard tests of language. A speech and language clinician can detect it by observing how a child uses language in her day-to-day activities.

Treatment & Target Outcomes

Once the diagnosis is confirmed, the outlook for most children who receive treatment for attention-deficit/hyperactivity disorder (ADHD) is encouraging. There is no specific cure for ADHD, but there are many treatment options available. Each child's treatment must be tailored to meet his individual needs.

In Most Cases, Treatment For ADHD Should Include:

- A long-term management plan with
 - Target outcomes for behavior
 - Follow-up activities
 - Monitoring
- Education about ADHD
- Teamwork among doctors, parents, teachers, caregivers, other health care professionals, and the child
- Medication
- Behavior therapy including parent training
- Individual and family counseling

Treatment for ADHD uses the same principles that are used to treat other chronic conditions like asthma or diabetes. Long-term planning is needed because these conditions are not cured. Families must manage them on an ongoing basis. In the case of ADHD, schools and other caregivers must also be involved in managing the condition.

Educating the people involved about ADHD is a key part of treating your child. As a parent, you will need to learn about ADHD. Read about the condition and talk with people who understand it. This will help you manage the ways ADHD affects your child and your family on a day-to-day basis. It will also help your child learn to help himself.

Setting Target Outcomes:

At the beginning of treatment, your pediatrician should help you set around 3 target outcomes (goals) for your child's behavior. These target outcomes will guide the treatment plan. Your child's target outcomes should focus on helping her function as well as possible at home, at school, and in your community. You need to identify what

behaviors are most preventing your child from success. The following are examples of target outcomes:

- Improved relationships with parents, siblings, teachers, and friends (eg, fewer arguments with brothers or sisters or being invited more frequently to friends' houses or parties)
- Better schoolwork (eg, completing class work or homework assignments)
- More independence in self-care or homework (eg, getting ready for school in the morning without supervision)
- Improved self-esteem (eg, increase in feeling that she can get her work done)
- Fewer disruptive behaviors (eg, decrease in the number of times she refuses to obey rules)
- Safer behavior in the community (eg, when crossing streets)

The target outcomes should be:

- Realistic
- Something your child will be able to do
- Behaviors that you can observe and count (eg, with rating scales)

Your child's treatment plan will be set up to help her achieve these goals.

Keeping The Treatment Plan On Track:

Ongoing monitoring of your child's behavior and medications is required to find out if the treatment plan is working. Office visits, phone conversations, behavior checklists, written reports from teachers, and behavior report cards are common tools for following the child's progress.

Treatment plans for ADHD usually require long-term efforts on the part of families and schools. Medication schedules may be complex. Behavior therapies require education and patience. Sometimes it can be hard for everyone to stick with it. Your efforts play an important part in building a healthy future for your child.

Ask your pediatrician to help you find ways to keep your child's treatment plan on track.

What If My Child Does Not Reach His Target Outcomes?

Most school-aged children with ADHD respond well when their treatment plan includes both medication and behavior therapy. If your child is not achieving his goals, your pediatrician will assess the following factors:

- Were the target outcomes realistic?
- Is more information needed about the child's behavior?
- Is the diagnosis correct?
- Is another condition hindering treatment?
- Is the treatment plan being followed?
- Has the treatment failed?

While treatment for ADHD should improve your child's behavior, **it may not completely eliminate the symptoms** of inattention, hyperactivity, and impulsivity. Children who are being treated successfully may still have trouble with their friends or schoolwork.

However, if your child clearly is not meeting his specific target outcomes, your pediatrician will need to reassess the treatment plan.

Common ADHD Medications & Treatments

For most children, stimulant medications are a safe and effective way to relieve attention-deficit/hyperactivity disorder (ADHD) symptoms. As glasses help people focus their eyes to see, these medications help children with ADHD focus their thoughts better and ignore distractions. This makes them more able to pay attention and control their behavior.

Stimulants may be used alone or combined with behavior therapy. Studies show that about 80% of children with ADHD who are treated with stimulants improve a great deal once the right medication and dose are determined.

Two forms of stimulants are available:

- Immediate-release (short-acting)
- Extended-release (intermediate-acting and long-acting)

Common Medications

Type of medication	Brand name	Generic Name	Duration
Short-acting amphetamine stimulants	Adderall	Mixed amphetamine salts	4 to 6 hours
	Dexedrine	Dextroamphetamine	4 to 6 hours
	Dextrostat	Dextroamphetamine	4 to 6 hours
Short-acting methylphenidate stimulants	Focalin	Dexmethylphenidate	4 to 6 hours
	Methylin	Methylphenidate (tablet, liquid, and chewable tablets)	3 to 5 hours
	Ritalin	Methylphenidate	3 to 5 hours
Intermediate-acting methylphenidate stimulants	Metadate CD	Extended-release methylphenidate	6 to 8 hours
	Ritalin LA	Extended-release Methylphenidate	6 to 8 hours
Long-acting amphetamine stimulants	Adderall-XR	Extended-release amphetamine	10 to 12 hours
	Dexedrine Spansule	Extended-release amphetamine	6+ hours
	Vyvanse	Lisdexamfetamine	10 to 12 hours
Long-acting methylphenidate stimulants	Concerta	Extended-release methylphenidate	10 to 12 hours
	Daytrana	Extended-release methylphenidate (skin patch)	11 to 12 hours
	Focalin XR	Extended-release dexmethylphenidate	8 to 12 hours
	Quillivant XR	Extended-release methylphenidate (liquid)	10 to 12 hours
Long-acting non-stimulants	Intuniv	Guanfacine	24 hours
	Kapvay	Clonidine	12 hours
	Strattera	Atomoxetine	24 hours

Products are mentioned for informational purposes only and do not imply an endorsement by the American Academy of Pediatrics. Your doctor or pharmacist can provide you with important safety information for the products listed.

Immediate-release medications usually are taken every 4 hours, when needed. They are the cheapest of the medications. Extended-release medications usually are taken once in the morning.

Children who use extended-release forms of stimulants can avoid taking medication at school or after school. It is important not to chew or crush extended-release capsules or tablets. However, extended-release capsules that are made up of beads can be opened and sprinkled onto food for children who have difficulties swallowing tablets or capsules.

Non-stimulants can be tried when stimulant medications don't work or cause bothersome side effects.

Which Medication Is Best For My Child?

It may take some time to find the best medication, dosage, and schedule for your child.

Your child may need to try different types of stimulants or other medication. Some children respond to one type of stimulant but not another.

The amount of medication (dosage) that your child needs also may need to be adjusted. The dosage is not based solely on his weight. Your pediatrician will vary the dosage over time to get the best results and control possible side effects.

The medication schedule also may be adjusted depending on the target outcome. For example, if the goal is to get relief from symptoms mostly at school, your child may take the medication only on school days.

It is important for your child to have regular medical checkups to monitor how well the medication is working and check for possible side effects.

What Side Effects Can Stimulants Cause?

Side effects occur sometimes. These tend to happen early in treatment and are usually mild and short-lived, but in rare cases they can be prolonged or more severe.

The most common side effects include:

- Decreased appetite/weight loss
- Sleep problems
- Social withdrawal

Some less common side effects include:

- Rebound effect (increased activity or a bad mood as the medication wears off)
- Transient muscle movements or sounds called tics
- Minor growth delay

Very rare side effects include:

- Significant increase in blood pressure or heart rate
- Bizarre behaviors

The same sleep problems do not exist for atomoxetine, but initially it may make your child sleepy or upset her stomach. There have been very rare cases of atomoxetine needing to be stopped because it was causing liver damage. Rarely atomoxetine increased thoughts of suicide. Guanfacine can cause drowsiness, fatigue, or a decrease in blood pressure.

More than half of children who have tic disorders, such as Tourette syndrome, also have ADHD. Tourette syndrome is an inherited condition associated with frequent tics and unusual vocal sounds. The effect of stimulants on tics is not predictable, although most studies indicate that stimulants are safe for children with ADHD and tic disorders in most cases. It is also possible to use atomoxetine or guanfacine for children with ADHD and Tourette syndrome.

Most side effects can be relieved by:

- Changing the medication dosage
- Adjusting the schedule of medication
- Using a different stimulant or trying a non-stimulant

Close contact with your pediatrician is required until you find the best medication and dose for your child. After that, periodic monitoring by your doctor is important to maintain the best effects. To monitor the effects of the medication, your pediatrician will probably have you and your child's teacher(s) fill out behavior rating scales; observe

changes in your child's target goals; notice any side effects; and monitor your child's height, weight, pulse, and blood pressure.

Stimulants, atomoxetine, and guanfacine may not be an option for children who are taking certain other medications or who have some medical conditions, such as congenital heart disease.

Are Children Getting High On Stimulant Medications?

When taken as directed by a doctor, there is no evidence that children are getting high on stimulant drugs such as methylphenidate and amphetamine. At therapeutic doses, these drugs also do not sedate or tranquilize children and do not increase the risk of addiction.

Stimulants are classified as Schedule II drugs by the US Drug Enforcement Administration because there is abuse potential of this class of medication. If your child is on medication, it is always best to supervise the use of the medication closely. Atomoxetine and guanfacine are not Schedule II drugs because they don't have abuse potential, even in adults.

Are Stimulant Medications Gateway Drugs Leading To Illegal Drug Or Alcohol Abuse?

People with ADHD are naturally impulsive and tend to take risks. But patients with ADHD who are taking stimulants are not at a greater risk and actually may be at a lower risk of using other drugs. Children and teenagers who have ADHD and also have coexisting conditions may be at higher risk for drug and alcohol abuse, regardless of the medication used.

Behavior Therapy Has 3 Basic Principles:

1. **Set specific doable goals.** Set clear and reasonable goals for your child, such as staying focused on homework for a certain amount of time or sharing toys with friends.
2. **Provide rewards and consequences.** Give your child a specified reward (positive reinforcement) every time she shows the desired behavior. Give your child a consequence (unwanted result or punishment) consistently when she has inappropriate behaviors.
3. **Keep using the rewards and consequences.** Using the rewards and consequences consistently for a long time will shape your child's behavior in a positive way.

Most experts recommend using both medication and behavior therapy to treat attention-deficit/hyperactivity disorder (ADHD). This is known as a multimodal treatment approach.

There are many forms of behavior therapy, but all have a common goal—to change the child's physical and social environments to help the child improve his behavior.

Under this approach, parents, teachers, and other caregivers learn better ways to work with and relate to the child with ADHD. You will learn how to set and enforce rules, help

your child understand what he needs to do, use discipline effectively, and encourage good behavior. Your child will learn better ways to control his behavior as a result. You will learn how to be more consistent.

The table above shows specific behavior therapy techniques that can be effective with children with ADHD.

Behavior therapy recognizes the limits that having ADHD puts on a child. It focuses on how the important people and places in the child's life can adapt to encourage good behavior and discourage unwanted behavior. It is different from play therapy or other therapies that focus mainly on the child and his emotions.

How Can I Help My Child Control Her Behavior?

As the child's primary caregivers, parents play a major role in behavior therapy. Parent training is available to help you learn more about ADHD and specific, positive ways to respond to ADHD-type behaviors. This will help your child improve. In many cases parenting classes with other parents will be sufficient, but with more challenging children, individual work with a counselor/coach may be needed.

Taking care of yourself also will help your child. Being the parent of a child with ADHD can be tiring and trying. It can test the limits of even the best parents. Parent training and support groups made up of other families who are dealing with ADHD can be a great source of help. Learn stress-management techniques to help you respond calmly to your child. Seek counseling if you feel overwhelmed or hopeless.

Ask your pediatrician to help you find parent training, counseling, and support groups in your community.

Tips For Helping Your Child Control His or Her Behavior:

- **Keep your child on a daily schedule.** Try to keep the time that your child wakes up, eats, bathes, leaves for school, and goes to sleep the same each day.
- **Cut down on distractions.** Loud music, computer games, and TV can be over stimulating to your child. Make it a rule to keep the TV or music off during mealtime and while your child is doing homework. Don't place a TV in your child's bedroom. Whenever possible, avoid taking your child to places that may be too stimulating, such as busy shopping malls.
- **Organize your house.** If your child has specific and logical places to keep his schoolwork, toys, and clothes, he is less likely to lose them. Save a spot near the front door for his school backpack so he can grab it on the way out the door.
- **Reward positive behavior.** Offer kind words, hugs, or small prizes for reaching goals in a timely manner or good behavior. Praise and reward your child's efforts to pay attention.
- **Set small, reachable goals.** Aim for slow progress rather than instant results. Be sure that your child understands that he can take small steps toward learning to control himself.
- **Help your child stay "on task."** Use charts and checklists to track progress with homework or chores. Keep instructions brief. Offer frequent, friendly reminders.

- **Limit choices.** Help your child learn to make good decisions by giving him only 2 or 3 options at a time.
- **Find activities at which your child can succeed.** All children need to experience success to feel good about themselves.
- **Use calm discipline.** Use consequences such as time-out, removing the child from the situation, or distraction. Sometimes it is best to simply ignore the behavior. Physical punishment, such as spanking or slapping, is not helpful. Discuss your child's behavior with him when both of you are calm.
- **Develop a good communication system with your child's teacher** so that you can coordinate your efforts and monitor your child's progress.

Frequently Asked Questions:

Will there be a cure for ADHD soon?

While there are no signs of a cure at this time, research is ongoing to learn more about the role of the brain in ADHD and the best ways to treat the disorder. Additional research is looking at the long-term outcomes for people with ADHD.

Will my child outgrow ADHD?

ADHD continues into adulthood in most cases. However, by developing their strengths, structuring their environments, and using medication when needed, adults with ADHD can lead very productive lives. In some careers, having a high-energy behavior pattern can be an asset.

How Schools Can Help Children with ADHD

Your child's school is a key partner in providing effective behavior therapy for your child. In fact, these principles work well in the classroom for most students.

Classroom Management Techniques May Include:

- Keeping a set routine and schedule for activities
- Using a system of clear rewards and consequences, such as a point system or token economy
- Sending daily or weekly report cards or behavior charts to parents to inform them about the child's progress
- Seating the child near the teacher
- Using small groups for activities
- Encouraging students to pause a moment before answering questions
- Keeping assignments short or breaking them into sections
- Close supervision with frequent, positive cues to stay on task
- Changes to where and how tests are given so students can succeed (eg, allowing students to take tests in a less distracting environment or allowing more time to complete tests)

Federal Laws to Help Children with ADHD:

Your child's school should work with you and your pediatrician to develop strategies to assist your child in the classroom. When a child has attention-deficit/hyperactivity disorder (ADHD) that is severe enough to interfere with her ability to learn, 2 federal laws offer help. These laws require public schools to cover costs of evaluating the educational needs of the affected child and providing the needed services.

- **The Individuals with Disabilities Education Act, Part B (IDEA)** requires public schools to cover costs of evaluating the educational needs of the affected child and providing the needed special education services if your child qualifies because her learning is impaired by her ADHD.
- **Section 504 of the Rehabilitation Act of 1973** does not have strict qualification criteria but is limited to changes in the classroom, modifications in homework assignments, and taking tests in a less distracting environment or allowing more time to complete tests.

If your child has ADHD and a coexisting condition, she may need additional special services such as a classroom aide, private tutoring, special classroom settings or, in rare cases, a special school.

It is important to remember that once ADHD is diagnosed and treated, children with it are more likely to achieve their goals in school.

Special Education Services and Federal Laws

For most children with ADHD, staying in a regular classroom with an excellent teacher, trained in and adept at behavior management, is the preferred situation. This is especially true if any necessary accommodations for your child can be put into place in that setting. Children with ADHD whose academic or behavior struggles cannot be managed effectively in a regular classroom using typical strategies may require special education services. These services may be delivered in a variety of settings, including the regular classroom and separate classrooms for part or all of a school day. The setting is determined by the needs of the eligible child. The federal law Individuals with Disabilities Education Act (IDEA) guarantees your child's right to be evaluated for and receive such services if eligible, free of charge.

IDEA

The IDEA was designed to guarantee the provision of special services for children whose disabilities severely affect their educational performance. A child can receive services under IDEA if she is learning disabled, emotionally disturbed, or "other health impaired." Your child may qualify for IDEA coverage if she has been diagnosed with ADHD and her condition has been shown to severely and adversely affect school performance. Note that both conditions must be met: an ADHD diagnosis alone does not guarantee coverage for your child unless it or another disorder is adversely affecting her educational performance. In most cases, it is a child's coexisting learning, disruptive behavior, anxiety, or other functional problem—not the ADHD itself—that qualifies her for IDEA coverage.

The IDEA is based on providing services for categories of disability. It includes 13 categories that require coverage "without undue delay." Under this law, schools are responsible for identifying and evaluating children who are suspected of having disabilities and who may need special education services. Depending on her diagnoses and assessment, your child's disability may be categorized as "specific learning disability," "serious emotional disturbance," or "other health impairment." After these needs are evaluated, documented, and eligibility determined, an IEP can be created to detail the special education services that are necessary.

Specific Learning Disabilities

- The IDEA criteria for specific learning disabilities can vary from state to state. Children qualify for learning disabilities under this law if they have significant needs in the areas of
 - Oral expression
 - Listening comprehension
 - Written expression
 - Basic reading skills
 - Reading comprehension
 - Mathematics calculation
 - Mathematics reasoning

Testing for learning disabilities generally includes assessment by the school psychologist.

In addition to learning disabilities, children with ADHD and significant emotional problems can also receive services through IDEA. To receive these services, a child's *educational performance* needs to be adversely affected by emotional and behavioral concerns:

- An inability to learn that can be best explained on a behavioral basis
- An inability to build or maintain relationships with peers and teachers
- Inappropriate types of behavior or feelings
- A persistent mood of unhappiness or depression
- A tendency to develop physical symptoms or fears associated with personal or school problems

A comprehensive evaluation that meets federal and state guidelines needs to be completed before children can qualify for services as emotionally disturbed. A note from your child's pediatrician that your child has ADHD or is depressed or anxious will not be enough to qualify her for services.

All children, including those with ADHD, are also eligible for services if they have the disabilities below and can be shown to need special education in order to benefit from their educational program.

- Intellectual or cognitive disabilities
- Hearing impairment, including deafness
- Speech or language impairment
- Visual impairment, including blindness
- Serious emotional disturbance
- Orthopedic impairment
- Autism spectrum disorders
- Traumatic brain injury
- Other health impairment, including ADHD and Tourette disorder
- Specific learning disabilities
- Developmental delay (used in some states for children aged 3–9 who have problems with development of their physical, cognitive, communication, social/emotional, or adaptive skills [everyday life skills]).

Additional considerations for eligibility include (1) schools cannot be overidentifying children in terms of race or ethnicity; (2) a child is not eligible for special education solely because of lack of instruction in academic areas; and (3) in newer IDEA legislation, children no longer need to demonstrate a severe discrepancy between their ability (IQ) and their achievement.

An alternative way to assess a child's need for special services, as mentioned previously, is RTI, an approach where a student with academic delays is given one or more research-validated interventions. The student's academic progress is monitored frequently to see if those interventions are sufficient to help the student catch up with his or her peers. If the student fails to show significantly improved academic skills despite several well-designed and implemented interventions, this failure to "respond to intervention" can be viewed as evidence of an underlying learning disability. One

advantage of RTI in the diagnosis of educational disabilities is that it allows schools to intervene early to meet the needs of struggling learners and not require them to fail before anything is done.