

Attention-Deficit/Hyperactivity Disorder

What is ADHD?

Attention-deficit/hyperactivity disorder (ADHD) is marked by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development. People with ADHD experience an ongoing pattern of the following types of symptoms:

- **Inattention** means a person may have difficulty staying on task, sustaining focus, and staying organized, and these problems are not due to defiance or lack of comprehension.
- **Hyperactivity** means a person may seem to move about constantly, including in situations when it is not appropriate, or excessively fidgets, taps, or talks. In adults, hyperactivity may mean extreme restlessness or talking too much.
- **Impulsivity** means a person may act without thinking or have difficulty with self-control. Impulsivity could also include a desire for immediate rewards or the inability to delay gratification. An impulsive person may interrupt others or make important decisions without considering long-term consequences.

What are the signs and symptoms of ADHD?

Some people with ADHD mainly have symptoms of inattention. Others mostly have symptoms of hyperactivity-impulsivity. Some people have both types of symptoms.

Many people experience some inattention, unfocused motor activity, and impulsivity, but for people with ADHD, these behaviors:

- Are more severe
- Occur more often
- Interfere with or reduce the quality of how they function socially, at school, or in a job

Inattention

People with symptoms of inattention may often:

- Overlook or miss details and make seemingly careless mistakes in schoolwork, at work, or during other activities

- Have difficulty sustaining attention during play or tasks, such as conversations, lectures, or lengthy reading
- Not seem to listen when spoken to directly
- Find it hard to follow through on instructions or finish schoolwork, chores, or duties in the workplace, or may start tasks but lose focus and get easily sidetracked
- Have difficulty organizing tasks and activities, doing tasks in sequence, keeping materials and belongings in order, managing time, and meeting deadlines
- Avoid tasks that require sustained mental effort, such as homework, or for teens and older adults, preparing reports, completing forms, or reviewing lengthy papers
- Lose things necessary for tasks or activities, such as school supplies, pencils, books, tools, wallets, keys, paperwork, eyeglasses, and cell phones
- Be easily distracted by unrelated thoughts or stimuli
- Be forgetful in daily activities, such as chores, errands, returning calls, and keeping appointments

Hyperactivity-impulsivity

People with symptoms of hyperactivity-impulsivity may often:

- Fidget and squirm while seated
- Leave their seats in situations when staying seated is expected, such as in the classroom or the office
- Run, dash around, or climb at inappropriate times or, in teens and adults, often feel restless
- Be unable to play or engage in hobbies quietly
- Be constantly in motion or on the go, or act as if driven by a motor
- Talk excessively
- Answer questions before they are fully asked, finish other people's sentences, or speak without waiting for a turn in a conversation
- Have difficulty waiting one's turn
- Interrupt or intrude on others, for example in conversations, games, or activities

Primary care providers sometimes diagnose and treat ADHD. They may also refer individuals to a mental health professional, such as a psychiatrist or clinical psychologist, who can do a thorough evaluation and make an ADHD diagnosis.

For a person to receive a diagnosis of ADHD, the symptoms of inattention and/or hyperactivity-impulsivity must be chronic or long-lasting, impair the person's functioning, and cause the person to fall behind typical development for their age. Stress, sleep disorders, anxiety, depression, and other physical conditions or

illnesses can cause similar symptoms to those of ADHD. Therefore, a thorough evaluation is necessary to determine the cause of the symptoms.

Most children with ADHD receive a diagnosis during the elementary school years. For an adolescent or adult to receive a diagnosis of ADHD, the symptoms need to have been present before age 12.

ADHD symptoms can appear as early as between the ages of 3 and 6 and can continue through adolescence and adulthood. Symptoms of ADHD can be mistaken for emotional or disciplinary problems or missed entirely in children who primarily have symptoms of inattention, leading to a delay in diagnosis. Adults with undiagnosed ADHD may have a history of poor academic performance, problems at work, or difficult or failed relationships.

ADHD symptoms can change over time as a person ages. In young children with ADHD, hyperactivity-impulsivity is the most predominant symptom. As a child reaches elementary school, the symptom of inattention may become more prominent and cause the child to struggle academically. In adolescence, hyperactivity seems to lessen and symptoms may more likely include feelings of restlessness or fidgeting, but inattention and impulsivity may remain. Many adolescents with ADHD also struggle with relationships and antisocial behaviors. Inattention, restlessness, and impulsivity tend to persist into adulthood.

What are the risk factors of ADHD?

Researchers are not sure what causes ADHD, although many studies suggest that genes play a large role. Like many other disorders, ADHD probably results from a combination of factors. In addition to genetics, researchers are looking at possible environmental factors that might raise the risk of developing ADHD and are studying how brain injuries, nutrition, and social environments might play a role in ADHD.

ADHD is more common in males than females, and females with ADHD are more likely to primarily have inattention symptoms. People with ADHD often have other conditions, such as learning disabilities, anxiety disorder, conduct disorder, depression, and substance use disorder.

How is ADHD treated?

While there is no cure for ADHD, currently available treatments may reduce symptoms and improve functioning. Treatments include medication, psychotherapy, education or training, or a combination of treatments.

Medication

For many people, ADHD medications reduce hyperactivity and impulsivity and improve their ability to focus, work, and learn. Sometimes several different medications or dosages must be tried before finding the right one that works for a particular person. Anyone taking medications must be monitored closely by their prescribing doctor.

Stimulants. The most common type of medication used for treating ADHD is called a “stimulant.” Although it may seem unusual to treat ADHD with a medication that is considered a stimulant, it works by increasing the brain chemicals dopamine and norepinephrine, which play essential roles in thinking and attention.

Under medical supervision, stimulant medications are considered safe. However, like all medications, they can have side effects, especially when misused or taken in excess of the prescribed dose, and require an individual’s health care provider to monitor how they may be reacting to the medication.

Non-stimulants. A few other ADHD medications are non-stimulants. These medications take longer to start working than stimulants, but can also improve focus, attention, and impulsivity in a person with ADHD. Doctors may prescribe a non-stimulant: when a person has bothersome side effects from stimulants, when a stimulant was not effective, or in combination with a stimulant to increase effectiveness.

Although not approved by the U.S. Food and Drug Administration (FDA) specifically for the treatment of ADHD, some antidepressants are used alone or in combination with a stimulant to treat ADHD. Antidepressants may help all of the symptoms of ADHD and can be prescribed if a patient has bothersome side effects from stimulants. Antidepressants can be helpful in combination with stimulants if a patient also has another condition, such as an anxiety disorder, depression, or another mood disorder. Non-stimulant ADHD medications and antidepressants may also have side effects.

Doctors and patients can work together to find the best medication, dose, or medication combination. To find the latest information about medications, talk to a health care provider and visit the [FDA website](#) .

Psychotherapy and psychosocial interventions

Several specific psychosocial interventions have been shown to help individuals with ADHD and their families manage symptoms and improve everyday functioning.

For school-age children, frustration, blame, and anger may have built up within a family before a child is diagnosed. Parents and children may need specialized help to overcome negative feelings. Mental health professionals can educate parents

about ADHD and how it affects a family. They also will help the child and his or her parents develop new skills, attitudes, and ways of relating to each other.

All types of therapy for children and teens with ADHD require parents to play an active role. Psychotherapy that includes only individual treatment sessions with the child (without parent involvement) is not effective for managing ADHD symptoms and behavior. This type of treatment is more likely to be effective for treating symptoms of anxiety or depression that may occur along with ADHD.

Behavioral therapy is a type of psychotherapy that aims to help a person change their behavior. It might involve practical assistance, such as help organizing tasks or completing schoolwork, or working through emotionally difficult events. Behavioral therapy also teaches a person how to:

- Monitor their own behavior
- Give oneself praise or rewards for acting in a desired way, such as controlling anger or thinking before acting

Parents, teachers, and family members also can give feedback on certain behaviors and help establish clear rules, chore lists, and structured routines to help a person control their behavior. Therapists may also teach children social skills, such as how to wait their turn, share toys, ask for help, or respond to teasing. Learning to read facial expressions and the tone of voice in others, and how to respond appropriately can also be part of social skills training.

Cognitive behavioral therapy helps a person learn how to be aware and accepting of one's own thoughts and feelings to improve focus and concentration. The therapist also encourages the person with ADHD to adjust to the life changes that come with treatment, such as thinking before acting, or resisting the urge to take unnecessary risks.

Family and marital therapy can help family members and spouses find productive ways to handle disruptive behaviors, encourage behavior changes, and improve interactions with the person with ADHD.