

Attention-Deficit/ Hyperactivity Disorder: What You Need to Know



National Institute
of Mental Health

What is ADHD?

Attention-deficit/hyperactivity disorder (ADHD) is a developmental disorder marked by persistent symptoms of inattention, hyperactivity, and impulsivity. Some people mostly have symptoms of inattention. Others mostly have symptoms of hyperactivity and impulsivity. Some people have both types of symptoms.

Symptoms begin in childhood and can interfere with daily life, including social relationships and school or work performance. ADHD is well-known among children and teens, but many adults also have the disorder. Effective treatments are available to manage symptoms.

What are the symptoms of ADHD?

People with ADHD may experience an ongoing pattern of:

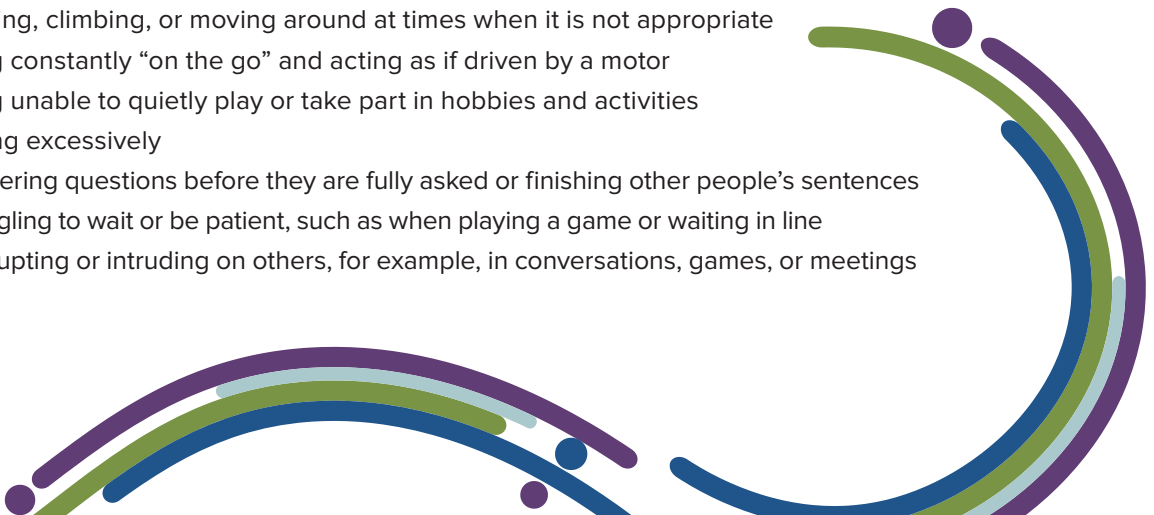
- ▶ **Inattention:** Difficulty paying attention
- ▶ **Hyperactivity:** Showing too much energy or moving and talking too much
- ▶ **Impulsivity:** Acting without thinking or having difficulty with self-control

Signs of inattention can include frequent difficulty with:

- ▶ Paying attention to details, leading to careless mistakes at school, work, or during other activities
- ▶ Concentrating on tasks or activities, for instance, while having conversations, taking tests, completing assignments, or reading papers
- ▶ Listening when spoken to directly
- ▶ Following instructions or finishing tasks at school, work, or home
- ▶ Organizing tasks and activities, managing time, and meeting deadlines
- ▶ Completing tasks that require sustained attention, such as homework, large projects, and complicated forms
- ▶ Losing things, such as backpacks, books, keys, wallets, and phones
- ▶ Getting easily distracted by unrelated thoughts or stimuli
- ▶ Forgetting about daily activities, such as chores, errands, and events, or other important things, like assignments, appointments, and phone calls

Signs of hyperactivity and impulsivity can include often:

- ▶ Fidgeting, tapping hands or feet, or squirming while seated
- ▶ Moving around when expected to remain seated, such as in the classroom or office, or feeling restless in these situations
- ▶ Running, climbing, or moving around at times when it is not appropriate
- ▶ Being constantly “on the go” and acting as if driven by a motor
- ▶ Being unable to quietly play or take part in hobbies and activities
- ▶ Talking excessively
- ▶ Answering questions before they are fully asked or finishing other people’s sentences
- ▶ Struggling to wait or be patient, such as when playing a game or waiting in line
- ▶ Interrupting or intruding on others, for example, in conversations, games, or meetings





What causes 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 differences in brain development and neurobiology among people with ADHD compared to those without the disorder. They are also studying environmental factors that might increase the risk of developing ADHD, including brain injuries, nutrition, and social environments.

How is ADHD diagnosed?

Based on their specific symptoms, a person can be diagnosed with one of three types of ADHD:

- ▶ **Inattentive:** Mostly symptoms of inattention but not hyperactivity or impulsivity
- ▶ **Hyperactive-impulsive:** Mostly symptoms of hyperactivity and impulsivity but not inattention
- ▶ **Combined:** Symptoms of both inattention and hyperactivity and impulsivity

ADHD symptoms must begin in childhood (before age 12). Symptoms often continue into the teen years and adulthood. The criterion for a diagnosis differs slightly based on age.


- ▶ Children up to 16 years must show at least six symptoms of inattention, hyperactivity and impulsivity, or both.
- ▶ Adults and youth over 16 years must show at least five symptoms of inattention, hyperactivity and impulsivity, or both.

To be diagnosed with ADHD, a person's symptoms must also:

- ▶ Occur for at least 6 months
- ▶ Be present in two or more settings (for example, at home, at work, in school, or with friends)
- ▶ Interfere with or impair social, school, or work functioning

Stress, sleep disorders, anxiety, depression, and other physical conditions or illnesses can cause similar symptoms to those of ADHD. A health care provider needs to do a thorough evaluation to determine the cause of symptoms, make a diagnosis, and identify effective treatments.

Primary care providers sometimes diagnose and treat ADHD, or they may refer the person to a mental health professional. During an evaluation, a provider usually:

- ▶ Examines the person's mental health and medical history, including their mood and past or current health conditions.
 - ▶ Looks at the person's current or, if an adult, childhood behavior and school experiences. To obtain this information, the provider may ask for permission to talk with family, friends, partners, teachers, and others who know the person well and have seen them in different settings to learn about behaviors and experiences at home, school, or elsewhere.
 - ▶ Uses standardized behavior rating scales or ADHD symptom checklists to determine whether the person meets the criteria for a diagnosis of ADHD.
 - ▶ Administers psychological tests that look at cognitive skills, such as working memory, executive functioning (abilities such as planning and decision-making), visual and spatial abilities, or reasoning. Such tests can help identify psychological or cognitive (thinking-related) strengths and challenges and identify or rule out possible learning disabilities.
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Does ADHD look the same in everyone?

Anyone can have ADHD. However, boys and men tend to display more hyperactive and impulsive symptoms, while girls and women are more likely to be diagnosed with inattentive ADHD.

ADHD can also be diagnosed at any age, although symptoms must have begun in childhood (before age 12). Adults with ADHD often have a history of problems with school, work, and relationships.

ADHD symptoms may change as a person gets older.

- ▶ **Children** show hyperactivity and impulsivity as the most common symptoms. As academic and social demands increase, symptoms of inattention often become more prominent and begin to interfere with academic performance and peer relationships.
- ▶ **Adolescents** usually show less hyperactivity and may appear as restless or fidgeting. Symptoms of inattention and impulsivity typically continue and may cause academic, organizational, or relationship challenges. Teens with ADHD are more likely to engage in impulsive, risky behaviors, such as substance use and unsafe sexual activity.
- ▶ **Adults, including older adults**, can show inattention, restlessness, and impulsivity, although, in some people, those symptoms become less severe and less impairing. They may also be irritable, have a low tolerance for frustration and stress, or experience frequent or intense mood changes.

Some adults may not have been diagnosed with ADHD when younger because their teachers or family did not recognize the disorder, they had a mild form of the disorder, or they managed well until experiencing the demands of adulthood. But it is never too late to seek a diagnosis and treatment for ADHD and other mental health conditions that may co-occur with it. Effective treatment can make day-to-day life easier for people with ADHD and their families.

How is ADHD treated?

Although there is no cure for ADHD, current treatments may help reduce symptoms and improve functioning. Common treatments for ADHD are medication, psychotherapy, and other behavioral interventions. For children, treatment often includes parent education and school-based programs.

Researchers are studying new treatments for people with ADHD, such as cognitive training and neurofeedback. These options are usually explored only after medication and psychotherapy have already been tried. For many people, treatment involves a combination of elements.

Medication

Stimulants are the most common type of medication used to treat ADHD, and research shows them to be highly effective. They work by increasing levels of brain chemicals involved in thinking and attention.

Like all medications, stimulants can have side effects and must be prescribed and monitored by a health care provider. Tell the provider about other medications you or your child are taking.

Medications for common health problems, such as diabetes, anxiety, and depression, can interact with stimulants, in which case, a provider can suggest other medication options.

Health care providers sometimes prescribe nonstimulant medications like antidepressants to treat ADHD. However, the U.S. Food and Drug Administration (FDA) has not approved these medications specifically for ADHD. Sometimes, a person must try several different medications or dosages before finding the one that works for them.

NIMH has information on stimulants and other mental health medications at www.nimh.nih.gov/medications. You can learn more about specific medications, including the latest approvals, side effects, warnings, and patient information, on the FDA website at www.fda.gov/drugsatfda.

Psychotherapy and behavioral interventions

Psychological interventions for ADHD can take many forms and be combined with medication and other elements for parents, families, and teachers. Adding therapy to an ADHD treatment plan can help some people better cope with daily challenges, gain confidence, or manage impulsive and risky behaviors.

Therapy is especially helpful if ADHD co-occurs with other mental disorders, such as anxiety, depression, conduct problems, or substance use disorders. You can learn about other mental disorders at www.nimh.nih.gov/health.

Several psychosocial interventions have been shown to help manage symptoms and improve functioning.

- ▶ **Behavioral therapy** helps a person change their behavior. It might involve practical assistance, such as organizing tasks or completing schoolwork, learning social skills, or monitoring one's behavior.
- ▶ **Cognitive behavioral therapy** helps a person become aware of attention and concentration challenges and work on skills to improve focus and organization and complete daily tasks (for instance, by breaking large tasks into smaller, more manageable steps).
- ▶ **Family and marital therapy** helps family members learn to handle disruptive behaviors, encourage behavior changes, and improve interactions with children and partners.

Some people find it helpful to get support from a professional life coach or ADHD coach who can teach them skills to improve daily functioning.

For more information on psychotherapy, including what to look for in a therapist and how to find one, visit www.nimh.nih.gov/psychotherapies.

Parent education and support

Therapy for children and teens requires parents to play an active role. Treatment sessions with the child alone are more likely to be effective for treating symptoms of anxiety or depression that may co-occur with ADHD than for managing core symptoms of the disorder.

Mental health professionals can educate parents about the disorder and how it affects a family. They also can help parents develop new skills, attitudes, and ways of relating to their child. Examples include parenting skills training, stress management techniques for parents, and support groups that help parents and families connect with others who have similar concerns.

School-based programs

Many children and teens with ADHD benefit from school-based behavioral interventions and academic accommodations. Interventions include behavior management plans or classroom-taught organizational and study skills. Accommodations include preferential seating in the classroom, reduced classwork, and extended time on tests and exams. Schools may provide accommodations through what is called a 504 Plan or, for children who qualify for special education services, an Individualized Education Plan (IEP).

To learn more about special education services and the Individuals with Disabilities Education Act, visit <https://idea.ed.gov>.



Cognitive training

Cognitive training approaches involve repeatedly using a program or activity over several weeks to improve specific functions, such as memory or attention. Exercises are tailored to the person's ongoing performance.

Cognitive training is shown to modestly improve the tasks being practiced. For instance, research shows the training can help memory, attention, inhibition, planning, and cognitive flexibility in people with ADHD. However, these improvements don't usually translate to changes in core ADHD symptoms of impulsivity and hyperactivity.

Neurofeedback

Neurofeedback is a noninvasive technique in which an electronic device monitors and records a person's brain activity, providing them with immediate feedback to support self-regulation. The device measures brain activity through such means as EEG or fMRI scans and feeds the information back to the person, usually in the form of a computer screen or visual cue. Through this feedback, people learn to self-regulate their brain activity to directly alter the associated behavior. The assumption is that, with repeated, real-time information, people can change their internal brain activity, with observable effects on behavior and cognition.

For people with ADHD, neurofeedback is used to train and improve specific cognitive functions. Although it is shown to help reduce some ADHD symptoms, the effects of neurofeedback remain lower than those seen from medication and psychotherapy. Additional research is needed to refine the treatment and determine for whom it works and under what conditions.

Complementary health approaches

Some people may explore complementary health approaches to manage symptoms of ADHD. These can include natural products, vitamins and supplements, diet changes, and acupuncture. Others find it helpful to make lifestyle changes, like adding more physical exercise to their daily schedule.

Unlike psychotherapy and medication that are scientifically shown to improve ADHD symptoms, complementary health approaches generally have not been found to treat ADHD effectively and do not qualify as evidence-supported interventions.


For more information, visit the National Center for Complementary and Integrative Health at www.nccih.nih.gov/health/attention-deficit-hyperactivity-disorder-at-a-glance.

How can I find help?

If you're unsure of where to get help, a health care provider is a good place to start. They can refer you to a qualified mental health professional, such as a psychologist, psychiatrist, or clinical social worker, who can help figure out the next steps. Find tips for talking with a health care provider about your or your child's mental health at www.nimh.nih.gov/talkingtips.

The Centers for Disease Control and Prevention (CDC) has information about ADHD symptoms, diagnosis, and treatment, as well as additional resources for families and providers, at www.cdc.gov/adhd.

The Substance Abuse and Mental Health Services Administration (SAMHSA) also has resources for finding support at <https://findsupport.gov> and locating mental health services in your area at <https://findtreatment.gov>. For additional resources, visit www.nimh.nih.gov/findhelp.



How can I help myself?

Medication and therapy are the most effective treatments for ADHD. Other strategies may also help manage symptoms.

- ▶ Get regular exercise, especially when feeling hyperactive or restless.
- ▶ Eat regular, healthy meals.
- ▶ Get plenty of sleep. Try to turn off screens at least 1 hour before bedtime and get between 7–9 hours of sleep every night.
- ▶ Stick to a consistent routine.
- ▶ Work on time management and organization. Prioritize time-sensitive tasks and write down assignments, messages, appointments, reminders, and important thoughts.
- ▶ Take short breaks during tasks that require sustained attention to help maintain focus and prevent burnout. Break large tasks into smaller, more manageable steps.
- ▶ Connect with people and maintain relationships. Schedule activities with friends, particularly supportive people who understand your challenges with ADHD.
- ▶ Take medications as directed. Avoid alcohol, tobacco, and drugs not prescribed for you.

How can I help my child?

- ▶ Be patient, flexible, and understanding. ADHD can be frustrating both for people who have it and the people in their lives. ADHD may make it hard for your child to perform certain tasks or behaviors. Some children may need to use different strategies to help them succeed.
- ▶ Use clear, simple, direct language to explain rules and expectations. Reward behaviors that meet these expectations with positive reinforcement. Provide consistent praise or rewards for acting in a desired way.
- ▶ Offer practical help, such as on tasks like cleaning and organizing, or simply be present and engaged while your child works, which can give them a sense of accountability and motivation and help them stay focused and on track.
- ▶ Provide opportunities to explore different activities and interests. Help your child discover their unique talents and build confidence in their abilities.

If you or someone you know is struggling or having thoughts of suicide, call or text the 988 Suicide and Crisis Lifeline at **988** or chat at 988lifeline.org. In life-threatening situations, call **911**.



Clinical trials

Clinical trials are research studies that look at ways to prevent, detect, or treat diseases and conditions. These studies help show whether a treatment is safe and effective in people. Some people join clinical trials to help doctors and researchers learn more about a disease and improve health care. Other people, such as those with health conditions, join to try treatments that aren't widely available.

NIMH supports clinical trials across the United States. Talk to a health care provider about clinical trials and whether one is right for you. For more information, visit www.nimh.nih.gov/clinicaltrials.

For more information

Learn more at www.nimh.nih.gov/health. For information about various health topics, visit the National Library of Medicine's MedlinePlus resource at <https://medlineplus.gov>.

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