



ADHD and Tics or Tourette Syndrome

Tourette Syndrome and ADHD frequently co-occur. More than [half of children with TS also have ADHD](#). About one in five children with ADHD also have TS or persistent tic disorders.

Symptoms of inattention, hyperactivity, impulsivity, and tics can affect children's lives at home, at school, or with friends. When a child has both ADHD symptoms and tics, it's important that their health care provider carefully assess all symptoms and provide a comprehensive diagnostic evaluation, so that both conditions can be included in multimodal treatment planning.

ADHD: Symptoms

ADHD is a brain-based disorder that can cause one to feel a constant need to move around and to experience difficulties with focus, concentration, and executive function—the ability to organize, plan, and manage thoughts and actions. Its symptoms are usually first noticed in early childhood and fall into three groups of behaviors: inattentive, hyperactive-impulsive, and combined inattention and hyperactivity.

Inattentive symptoms include failing to pay attention to details, making careless mistakes, difficulty sustaining attention, not appearing to listen, struggling to follow instructions, difficulty with organization, avoiding or disliking tasks that require sustained mental effort, losing things, and being easily distracted and forgetful.

Hyperactive-impulsive symptoms include fidgeting, difficulty remaining seated, running about excessively, difficulty engaging in activities quietly, acting as if driven by a motor, talking excessively, blurting out answers, difficulty waiting or taking turns, and interrupting others.

Symptoms can present in different ways: predominantly inattentive, predominantly hyperactive-impulsive, and combined presentation with both inattentive and hyperactive-impulsive symptoms.



ADHD: Diagnosis

To meet diagnostic criteria for ADHD, symptoms must be present before the age of 12. Children need to have [six or more ADHD symptoms](#) in two or more settings. For adolescents and adults aged 17 or older, five symptoms are sufficient for a diagnosis.

ADHD can be a lifelong health condition, but symptoms and presentations can change and fluctuate; hyperactive symptoms typically lessen over time, but a sense of restlessness may remain in adults. Other health conditions, such as anxiety, depression, behavior disorders, learning, and sleep disorders, often co-occur with ADHD. The specific causes of ADHD have not yet been identified, but genetic inheritance, low levels of neurotransmitters and dysfunction between the front portion of the brain (the motor and cognitive centers of the brain) have been shown to be involved. ADHD tends to run in families.



Tic Disorders and Tourette Syndrome: What is a Tic?

Tics are sudden, rapid, repetitive, non-rhythmic movements or sounds. These actions are involuntary, in that an individual may be able to suppress them for a short time, but ultimately has no control over them. Tics are common in childhood and stop before adulthood for most people. Boys are three times as likely to have tics as girls.

Tics are described as being either simple or complex. Simple tics can be brief, happen quickly, and involve a single muscle group. Complex tics last longer, involve more muscles, and often include a series of simple tics that occur together in a sequence.

Motor tics may include eye blinking, mouth opening, facial grimacing, head movements, shoulder shrugging, or combinations of any of these movements. Vocal tics may include throat clearing, coughing, sniffing, barking, snorting, repeating parts of words or phrases, or, more rarely, blurting obscene or inappropriate words.

Tic Disorders and Tourette Syndrome: Diagnosis

Tic disorders are neurodevelopmental disorders, and symptom onset must occur before age 18 to meet diagnostic criteria. There are three types of tic disorders:

- provisional tic disorder (lasting less than a year)
- persistent (chronic) motor or vocal tic disorder (lasting a year or longer)
- Tourette Syndrome, also known as Tourette's disorder (both motor and vocal tics, numerous and frequent, lasting more than a year)

TS can be a lifelong health condition, but tic symptoms fluctuate, and often improve in late adolescence and young adulthood. Other conditions besides ADHD can co-occur with TS, including anxiety, depression, obsessive-compulsive disorder (OCD), autism spectrum disorder (ASD), as well learning disorders and other developmental disabilities. As with ADHD, the cause of tics and TS has not yet been identified, but research has identified dysfunction/disinhibition of the brain circuits involved in the control of movement, cognition, and behavior (what researchers call the cortico-striatal-thalamo-cortical or CTSC pathway). Similarly, genetics are thought to play a role, and tics, TS, and OCD tend to run in families.

ADHD Treatment

Treatment options for ADHD include medication, behavior therapy and training for parents, organizational skills training, school intervention, and accommodations. Medications fall into two larger categories: stimulant medication and nonstimulant medication. Behavior therapy teaches children and their families how to strengthen positive child behaviors and eliminate or reduce unwanted or problem behaviors. Parent behavior management training teaches parents to learn or improve skills to manage their child's behavior. Parents are encouraged to practice the skills with their child during therapy sessions and at home. Teachers can also be trained in behavior management to help children at childcare centers or schools.

For children age 6 and older, ADHD is often best treated with a combination of behavior therapy and medication. For [children with ADHD younger than age 6](#), behavior therapy, particularly parent training, is recommended as the first treatment before medication is tried.

You can learn more about treating childhood ADHD in [CHADD's Treatment Overview for Parents & Caregivers](#).

Tourette Syndrome and Other Tic Disorders: Treatment

Tics generally need treatment only if they are causing significant daily problems. Treatment options include behavioral interventions and medications. In mild cases, education and reassurance for the child and family may be all that is needed.

Comprehensive Behavioral Intervention for Tics, or CBIT, is the recommended first line of treatment for Tourette Syndrome. CBIT consists of three important components:

1. Training the patient to become more aware of his or her tics in general, and in particular, to become aware of urges to tic before the tic occurs.
2. Training the patient to perform a competing behavior when he or she feels the urge to tic.
3. Making changes to day-to-day activities in ways that can be helpful in reducing tics.

Medication may also be prescribed when symptoms interfere with social relationships, daily life, or academic or job performance. Treatment options for tics can also include stress and anxiety management strategies, such as

mindfulness, meditation, and deep breathing techniques. Occupational therapists can also provide assessments, therapies, and plans that can help manage the environment and reduce stress for children and teens if needed. School [supports and academic accommodations](#) can be put in place to help manage the impact of tic symptoms on learning and school success.

You can learn more about treatment for tic disorders, including CBIT, in [Tourette Association's Medical Treatments](#).

Combined Treatment for ADHD and Tics

When a child has both ADHD and tics, the healthcare provider evaluates which symptoms are causing the most difficulties for the child. The condition that is causing the most distress or impairment is generally treated first. Treatment for the second condition often begins after the first condition starts to improve. Sometimes it is necessary to start treatment for both conditions at the same time.

Medication may be needed for children with ADHD and Tourette Syndrome. The provider may decide to treat mild symptoms of both ADHD and tics with an alpha agonist, a nonstimulant medication such as clonidine or guanfacine, which can reduce both symptoms. Their most common side effects are tiredness and fatigue.

If ADHD symptoms are the most problematic, then treatment with a stimulant medication is generally recommended. Stimulants are highly effective for all ADHD symptoms, including in children with ADHD and tics. Although there is no scientific evidence that stimulants increase tics in children with ADHD and tic disorders, some children may experience a temporary increase when stimulants are started or doses are increased. Recent studies report that short-term stimulant medication, especially methylphenidate (Ritalin, Concerta, Metadate), seems to be safe and well tolerated in children who have chronic tics or TS and co-occurring ADHD. Children who were given methylphenidate did not develop more frequent tics when compared with those who were not given the medication. Tics may be more likely to increase with the dextroamphetamines (Dexedrine, Adderall, Vyvanse, ProCentra) compared to methylphenidate. In the long run, ADHD symptoms can potentially cause more difficulty than tics in children with both conditions, so it is important to make sure that the ADHD is adequately treated.

Behavior therapy, including parent training, can address both types of symptoms. CBIT training components that teach children about managing stress and anxiety, such as relaxation and mindfulness, can also help with ADHD symptoms. Parent training in behavior management focuses on positive communication, supportive routines and structures, and consistent positive discipline. The therapist can help parents understand how to best support the specific needs of their child, including the treatment of other behavioral, emotional, or learning disorders that may occur along with both ADHD and tic disorders.

References:

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The Tourette Association of America. [What is Tourette](#).

The Tourette Association of America. [How are TS and Other Tic Disorders Treated?](#)

The Tourette Association of America. [Comprehensive Behavioral Intervention for Tics \(CBIT\): Overview](#).



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