

Introduction

Tourette's syndrome is a brain condition that starts in childhood. Children with Tourette's make sounds or movements, such as coughing or twitching, that they can't control. These are called tics. The cause of Tourette's syndrome is unknown. It is more common in boys than girls. Many people eventually outgrow the tics. But severe tics may interfere with communication, daily activities and quality of life.



This reference summary explains Tourette's syndrome. It discusses symptoms, causes, treatment and complications of the disorder.

Tourette's Syndrome

Tourette's syndrome is also known as Tourette syndrome. It is named for the doctor who first described the condition, Dr. Georges Gilles de la Tourette. Tourette's syndrome causes people to have "tics." Tics are sudden twitches, movements or sounds that people do repeatedly.

The tics cannot be controlled. People who have tics cannot stop their body from doing these things. Sometimes people can stop themselves from doing a certain tic for awhile, but it is hard. Eventually the person has to do the tic.

Tics usually start at about age 2. They may be at their worst by age 12. Tics tend to decrease during late teenage years. They can continue into adulthood but happen less often and are less severe. There is no cure. But you can live a normal life with Tourette's syndrome. Many people with Tourette's syndrome do not need treatment if their symptoms are mild.



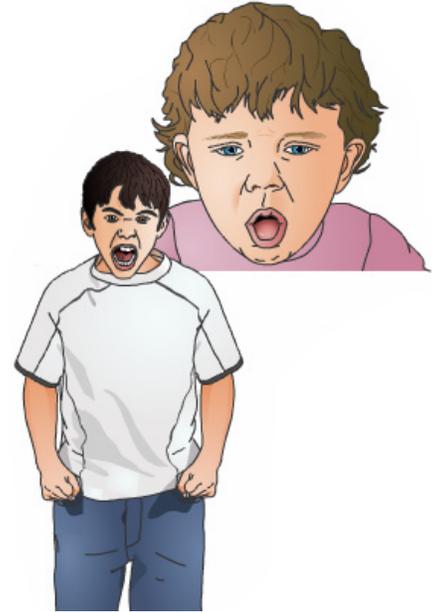
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Symptoms

Most children with Tourette's have different patterns of tics. The tics may not be obvious. They can be bursts of movement or sounds that last for seconds or minutes.

Tics can be movements, such as:

- Eye darting.
- Finger flexing.
- Flapping the arms.
- Hopping.
- Jerking of the neck.
- Shoulder shrugging.
- Twitching or blinking of the eyes.

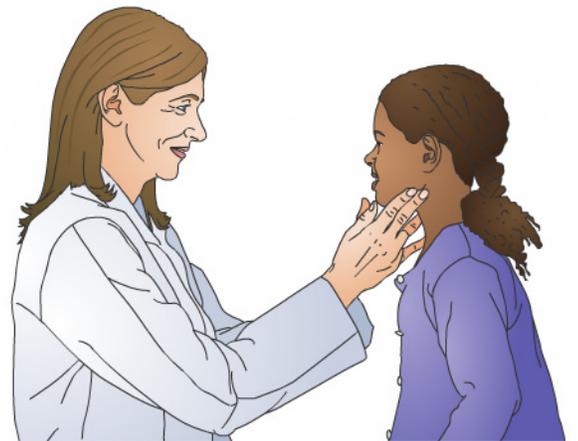


Tics can also include sounds, such as:

- Barking or yelling.
- Coughing or throat-clearing.
- Obscene gestures.
- Repeating words or phrases.
- Using vulgar, obscene or swear words.

Motor tics usually begin before vocal tics do. It is common for a person who has Tourette's to feel an urge in some part of the body that builds and builds. This urge is called a premonitory urge.

A premonitory urge can only be relieved by performing the tic. Some people with Tourette's feel that they need to complete a tic in a certain way or a certain number of times for the urge to go away.



Tics are classified as either:

- Simple tics.
- Complex tics.

Simple tics are sudden, brief and repetitive. They affect a small number of muscle groups. They are usually sudden, brief and meaningless movements. Examples of simple tics include eye blinking or head jerks.

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Complex tics are distinct, coordinated patterns of movements that affect several muscle groups. They are slower, longer and more purposeful movements. Examples of complex tics include gestures with the hands or throwing or touching objects.

Tics may:

- Evolve into different tics over time.
- Happen during sleep.
- Vary in type, frequency and severity.
- Worsen during teenage years and improve during the transition into adulthood.
- Worsen if your child is ill, stressed, anxious, tired or excited.

If you notice your child displaying involuntary movements or sounds, talk to their pediatrician. Not all tics are Tourette's syndrome. Many children have tics that last a few weeks or months before going away on their own.



Causes and Risk Factors

The exact cause of Tourette's syndrome is not known. There is no known way to prevent it. The syndrome is likely caused by a combination of genetic and environmental factors.

Tourette's syndrome may be an inherited disorder. One genetic mutation, or change, has been identified as a rare cause of Tourette's syndrome.

Having a family history of Tourette's syndrome or other tic disorders may also increase the risk of developing Tourette's syndrome.



The risk of Tourette's increases for a child if the mother:

- Drank a lot of coffee, smoked cigarettes or drank alcohol during her pregnancy.
- Had severe nausea and vomiting during the first trimester of pregnancy.
- Was under severe stress during her pregnancy.

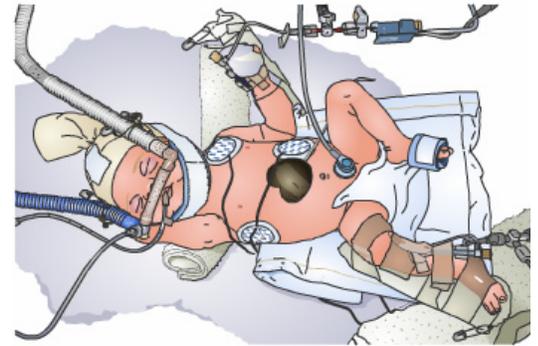
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Other risk factors for Tourette's include:

- A low birth weight and signs of brain injury.
- Not having enough oxygen or blood supply to the brain during birth.

Some researchers believe that Tourette's is caused by abnormalities in certain brain regions. Tourette's may be caused by abnormalities in:

- The circuits that connect regions in the brain.
- The neurotransmitters that allow nerves to communicate.



A neurotransmitter is a chemical that is made by nerve cells. It is used to communicate with other cells.

Diagnosis

A health care provider can diagnose Tourette's based on your child's medical history, symptoms and a physical exam. The health care provider may want to know if tics are causing school or social problems for your child.

Tourette's syndrome is diagnosed when a person meets certain criteria. A person must have:

- Both motor tics and vocal tics, although not necessarily at the same time.
- Tics that happen several times a day, nearly every day, for more than a year.
- Tics that aren't caused by medications, other substances or another medical condition.
- No break in tics for more than a three-month period.



Additionally, to be diagnosed with Tourette's, the onset of tics must begin before age 18. There are no tests to diagnose Tourette's syndrome. But in some cases tests may be done to check for other health problems that may cause similar symptoms. These tests may include:

- Blood tests.
- A CT scan or MRI.
- An electroencephalogram, or EEG.

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A CT scan makes a series of detailed pictures of areas inside the body taken from different angles. The pictures are created by a computer linked to an x-ray machine.

An MRI uses a large magnet and radio waves to look at organs and structures inside your body.

An EEG is a recording of electrical activity in the brain. It is made by placing electrodes on the scalp. Impulses are sent to a special machine. An EEG may be used to diagnose brain disorders.

Your health care provider may also check for:

- Attention deficit hyperactivity disorder, or ADHD.
- Learning or behavior problems.
- Obsessive-compulsive disorder, or OCD.

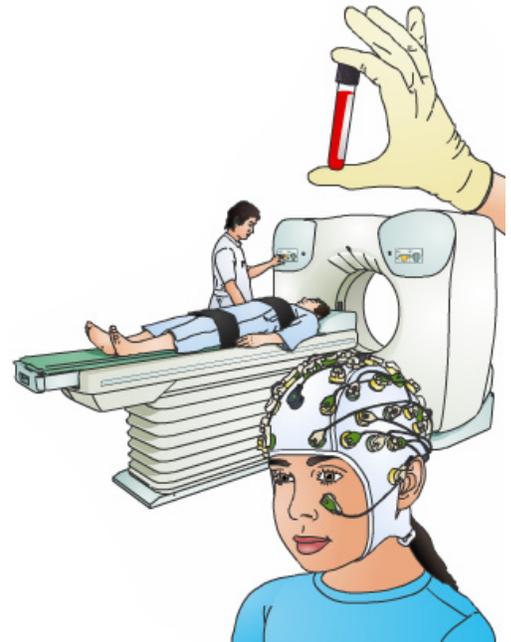
These problems sometimes happen along with Tourette's syndrome.

ADHD is a chronic condition. It can cause hyperactivity, a short attention span and impulsive behavior. Children with ADHD also may struggle with low self-esteem, troubled relationships and poor performance in school. OCD is an anxiety disorder. It is characterized by unreasonable thoughts and fears that lead you to do repetitive behaviors.

Treatment

Treatment for Tourette's syndrome focuses on helping your child cope with the tics. Understanding how tics affect your child can help you and your child know what to expect. It may help to identify when tics happen and what is going on in your child's life during those times.

There are many ways you can help your child with Tourette's disorder at home. Remember that your child cannot control his or her tics. Do not punish your child for having tics. Try not to show any frustration you may feel. Doing so may increase your child's anxiety and cause more tics. You can help reassure your child by staying calm and helping him or her to relax.



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Notice when your child's tics get worse. Sometimes you may be able to find triggers. You can help your child avoid them. But tics associated with Tourette's syndrome come and go. It may be difficult to know why they sometimes get worse.

Teachers can help your child with Tourette's disorder at school. They can:

- Give your child more time to take written tests.
- Let your child use a computer or recite assignments rather than writing them by hand if tics affect writing.
- Provide a seat for your child where there is little distraction and some privacy.
- Allow for frequent rest periods when needed.
- Allow your child to leave the room if he or she needs to move around or let the tics happen in private.
- Set an example of acceptance. It is important for teachers to prevent other children from teasing your child.
- Provide tutoring or special classes if needed.



No medication completely stops symptoms of Tourette's syndrome. But some medications may help control or minimize tics. They can also reduce symptoms of related conditions, such as ADHD or OCD. Drugs that block the neurotransmitter dopamine in the brain may be used to control tics.

For simple or vocal tics, an injection of Botulinum toxin type A, Botox[®], may help relieve the tic. It is injected into the affected muscle. Stimulant medications are used to help increase attention and concentration for people with ADHD. These include Ritalin[®] and Adderall[®]. Central adrenergic inhibitors may help control behavioral symptoms, such as impulse control problems and rage attacks.

Antidepressants may help control symptoms of sadness, anxiety and OCD. Psychotherapy can help a person cope with Tourette's syndrome, ADHD, obsessions, depression or anxiety.



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Psychotherapy is also known as talk therapy. It teaches people strategies to help them manage their symptoms better and function at their best in everyday life. A form of behavior therapy called habit reversal training may help to reduce tics. A person with Tourette's can identify premonitory urges. He or she learns to respond to those urges by moving in a way that prevents the tic from happening.

For severe tics that don't respond to other treatment, deep brain stimulation, or DBS, may help. A medical device is implanted in the brain. The device sends electrical stimulation to targeted areas in the brain that control movement.

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The cause of Tourette's syndrome is unknown. It is more common in boys than in girls. Many people eventually outgrow the tics. But severe tics may interfere with communication, daily activities and quality of life.

There is no cure. But you can live a normal life with Tourette's syndrome. Treatment for Tourette's syndrome focuses on helping your child cope with the tics. Understanding how tics affect your child can help you and your child know what to expect.



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