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## Croup

### About Croup

Croup is a condition that causes an inflammation of the upper airways — the voice box (larynx) and windpipe (trachea). It often leads to a barking cough or hoarseness, especially when a child cries.

Most cases of croup are caused by viruses. Those involved are usually parainfluenza virus (which accounts for most cases), adenovirus, and respiratory syncytial virus (RSV). Croup is most common — and symptoms are most severe — in children 6 months to 3 years old, but can affect older kids, too.

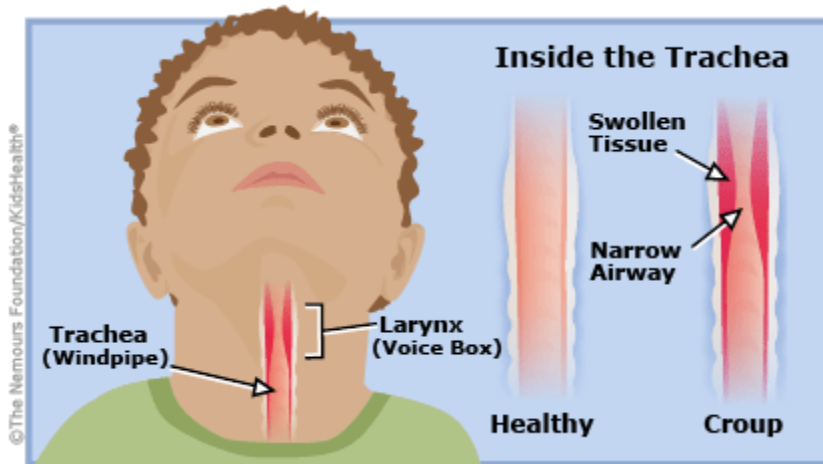
Most cases of viral croup are mild and can be treated at home, though rarely it can be severe and even life-threatening. Some children are more prone to developing croup when they get a viral upper respiratory infection.

The term **spasmodic croup** refers to a type of croup that develops quickly and may happen in a child with a mild cold. The barking cough usually begins at night and is not accompanied by fever. Spasmodic croup has a tendency to come back again (recur).

Symptoms are treated the same for either form of croup.

### Signs and Symptoms

At first, a child may have cold symptoms, like a stuffy or runny nose and a fever. As the upper airway (the lining of the windpipe and the voice box) becomes progressively inflamed and swollen, the child may become hoarse, with a harsh, barking cough. This loud cough, which is characteristic of croup, often sounds like the barking of a seal.



If the upper airway becomes increasingly swollen, it becomes even more difficult for a child to breathe, and you may hear a high-pitched or squeaking noise when a child inhales (this is called stridor). A child also may tend to breathe very fast and might have retractions (when the skin between the ribs pulls in during breathing). In the most serious cases, a child may appear pale or have a bluish tinge around the mouth due to a lack of oxygen.

Symptoms of croup are often worse at night and when children are upset or crying. Besides the effects on the upper airway, the viruses that cause croup can cause inflammation farther down the airway and affect the bronchi (large breathing tubes that connect to the windpipe).

### Contagiousness

Outbreaks of croup tend to occur in the fall and early winter when the viruses that cause it peak. Many children who come in contact with the viruses that cause croup will not get croup, but will instead have symptoms of a common cold.

### Diagnosis

Doctors can usually diagnose croup by listening for the telltale barking cough and stridor. They will also ask if your child has had any recent illnesses with a fever, runny nose, and congestion, and if your child has a history of croup or upper airway problems.

If a child's croup is severe and slow to respond to treatment, a neck X-ray may be taken to rule out any other reasons for the breathing difficulty, such as a foreign object lodged in the throat, an abscess behind the throat, or epiglottitis (a inflammation of the epiglottis, the flap of tissue that covers the windpipe). Typical findings on an X-ray if a child has croup includes the top of the airway narrowing to a point, which doctors call a 'steeple sign'

### Treatment

Most, though not all, cases of viral croup are mild. Breathing in moist air seems to make kids feel better. And ibuprofen or acetaminophen can make a child feel more comfortable. Doctors will also sometimes treat with steroids, which help with the airway swelling.

The best way to expose your child to moist air is to use a cool mist humidifier, or run a hot shower to create a steam-filled bathroom where you can sit with your child for 10 minutes. Breathing in the mist will sometimes stop a child from severe coughing. In the cooler months, try taking your child outside for a few minutes to breathe in the cool air — this may also alleviate symptoms. You can also try driving your child around in the car with the windows down.

When your child is sick, you might also want to consider sleeping overnight in the same room to provide close observation. If you are not able to break your child's fast breathing and croupy cough, call your child's doctor or seek medical attention as soon as possible.

Medical professionals will need to evaluate your child if the croup appears serious or if there's any suspicion of airway blockage. If the croup becomes severe, doctors will give a breathing treatment that contains epinephrine (adrenalin). This reduces swelling in the airway quickly. Oxygen may also be given, and sometimes a child with croup will remain in the hospital overnight for observation. As with most illnesses, rest and plenty of fluids are recommended.

### **Duration**

The symptoms of croup generally peak 2 to 3 days after the symptoms of infection with a virus start. Viral croup usually lasts 3 to 7 days.

### **Complications**

The vast majority of children recover from croup with no complications. Rarely, children will develop a bacterial infection of the upper airway, or pneumonia. Dehydration may occur due to inadequate fluid intake.

Children who were born prematurely or who have a history of lung disease (such as asthma), or neuromuscular disease like cerebral palsy are more likely to develop severe symptoms of croup and often require hospitalization. Croup rarely causes any long-term complications.

### **Prevention**

Frequent hand washing and avoiding contact with people who have respiratory infections are the best ways to reduce the chance of spreading the viruses that cause croup.

### **When to Call the Doctor**

Immediately call your doctor or seek medical attention if your child has:

- difficulty breathing, including rapid or labored breathing
- retractions: when the skin between the ribs pulls in with each breath
- stridor: high-pitched or squeaking noise when inhaling
- a pale or bluish color around the mouth
- drooling or difficulty swallowing
- a fatigued appearance
- signs of dehydration
- a very sick appearance

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