

CROUP

Croup is a common childhood viral illness that is easily recognized because of the distinctive characteristics that children have when they become infected. Like most viral illnesses, there is no cure for croup, but there are many symptomatic treatments that can help the pediatric patient feel better faster.

Croup, also called laryngotracheobronchitis, most commonly affects children between the ages of six months and three years, usually during the late fall, winter and early spring. Croup is spread as an airborne pathogen. Symptoms, which often include a runny nose and a brassy cough, develop about 2-6 days after developing an upper respiratory infection or being exposed to someone with symptoms of such an infection.

One of the distinctive characteristics of croup is the abrupt or sudden onset of symptoms. For example, children will be well when they go to bed, and will then wake up in the middle of the night with a croupy cough and trouble breathing. The cough that pediatric patients suffering from croup have is also distinctive. Unlike other viral respiratory illnesses, which can cause a dry, wet, or deep cough, croup causes a cough that sounds like a **barking seal**. Another common sound or symptom of croup is inspiratory stridor, which is a loud, high-pitched, harsh noise that children with croup often have when they are breathing in. Stridor is often confused with wheezing, but unlike wheezing, which is usually caused by inflammation in the lungs, **stridor is caused by inflammation in the larger – upper airways. airways.**

Symptoms, often improve during the day, but then worsen again at night, although decrease in intensity as the virus resolves. Symptoms can be exacerbated if the child becomes anxious or agitated. Again, sometimes less is more

The symptoms of croup are caused by inflammation, swelling and the buildup of mucus in the upper airway- larynx and upper trachea . Since younger infants and children have smaller airways, it makes sense that they

are the ones most affected by croup. In contrast, older children will often just develop cold symptoms when they are infected by the same virus.

Children with croup will usually also have a hoarse voice, decreased appetite and a fever, which is usually low grade, but may rise up to 104 degrees F.

Croup Assessment

Because of the characteristic signs and symptoms of croup, this diagnosis is usually fairly easy to make. You can often tell a child has croup when first encountering the patient. Hospital personnel can usually tell if a patient has croup while still in the waiting room or before they enter the exam room, therefore, testing is usually not necessary.

When assessing a child with croup, it is important to determine if he is having trouble breathing. Fortunately, most children have mild croup and have no trouble breathing, or they may only have **stridor** when they are crying or agitated. Children with moderate or severe croup will have rapid breathing and retractions, which is a sign of **increased work of breathing**. They may also have **stridor** when they are resting.

Croup Treatment

Treatments and family FYI

Although, like most viral infections, there is **no cure** for croup, there are many treatments that can help improve the symptoms and make the pediatric patient feel better. Mild croup symptoms can usually be safely treated at home. Families may be counseled on common treatments include using humidified air, which can be delivered by a cool mist humidifier. Using a hot steam vaporizer is usually discouraged because of the risk of the child getting burned if he touches it. Instead, warm steam can be delivered by turning on all of the hot water in the bathroom, including from the shower and sink, close the bathroom door and holding the child as he **breathes in the steamy, humidified air**.

On cool nights, exposure to the cool nighttime air may also help symptoms, and this phenomenon is responsible for another characteristic finding of

croup, the fact that children often get better on the way to the emergency room.

To take advantage of this, it may help to bundle the child up and walk around outside for several minutes. It is probably not a good idea to keep his window open though, as you don't want him to get too cold.

Since symptoms worsen if the child is crying and agitated, trying to keep the child calm may also improve his symptoms. Do your best here to not add to the anxiety.

A mist or oxygen tent has long been used to treat children who are hospitalized, but their use has been decreased because it makes it harder for the hospital staff to observe the child and notice if he is getting worse. Instead, **blow by oxygen** or cool mist may be used.

Croup Q&A

Can a child get croup more than once?

Yes. There are many viruses that can cause croup, including parainfluenza, adenovirus, respiratory syncytial virus (**RSV**), and **influenza** (the flu virus), and there are multiple subtypes of each virus, so a child can get croup multiple times as he gets infected with each of these viruses.

Is there a cure for croup?

No. Like most viral respiratory tract infections in children, there is no cure.

Will antibiotics help children with croup?

No. Unless the child has a secondary bacterial infection, such as an ear infection, antibiotics will not be effective against the viruses that cause croup.

How long does croup last?

The main symptoms of croup typically last only 2-5 days, but more rarely, they can last several weeks.

What else can cause stridor?

Remember that stridor is a sign of partial upper airway obstruction. Other important causes include foreign body airway obstruction (toy, bead, etc..) and epiglottitis (infection and swelling of the epiglottis that covers the trachea during swallowing).

FIRST RESPONDER TREATMENT

ABC'S

Oxygen therapy including using blow-by delivery.

Vital signs including SPO2

As detailed as a secondary exam as you can obtain without causing further anxiety to the child. Assess and document lung sounds.

Humidified air/cool moist air will help with the symptoms as well.

Control body temp as needed.

Prep for transport.

EMT –P Consider Racemic epi aerosol if permitted to give