

Croup

Hilliard Pediatrics, Inc. - Dr. Tim Teller, MD

Introduction

Croup is a viral illness, usually caused by parainfluenza virus. Croup is characterized by a **distinctive cough** that sounds tight, metallic, and like a barking seal. It occurs year-round, but it is much more common during the **fall and winter** seasons. The virus infects and inflames the upper respiratory tract, especially the voice box. Severe croup is associated with a problem called **stridor**, which is a harsh, raspy, vibrating sound made when the child breathes in.

Expected Course

Croup begins a few days to a week after exposure to the virus. Croup is quite contagious, much like other upper respiratory viral illnesses. Mild symptoms of a cold, sore throat, or **laryngitis** (hoarseness and losing your voice) without the barking cough of croup occur in many persons with the parainfluenza virus. Therefore, many children with croup were not exposed to someone else with the same symptoms. Most cases of croup occur in children less than 5 years of age, with the peak ages for infection being 6 months to 3 years of age.

Croup symptoms can **begin suddenly**. Some children have no symptoms of illness prior to awakening with the cough of croup in the middle of the night. Other children have mild cold symptoms and perhaps a hoarse voice prior to the cough appearing. The cough of croup is **worse at night and with more activity**. Croup typically lasts about **3-5 days**. A mild case may last a night or two and some cases linger on for well over a week. It is not unusual for the cough of croup to **come and go** throughout the illness. Cough spasms can occur where the cough is nearly non-stop for some time. During the day, many children will have long stretches without coughing.

Other symptoms associated with croup include fever, fussiness, and a decreased appetite. A few children will have vomiting, usually around the time of the coughing spasms. Some children with croup, as with other respiratory illnesses, will develop a bacterial ear infection.

Although some children have croup once, it is not unusual to have croup more than once. Some otherwise healthy children seem particularly prone to croup and will have it frequently. These children typically require the same treatment as other children with croup.

Prevention

Because croup is spread so easily through casual contact with the virus, it is difficult to prevent. The virus can be spread from being close-by when someone with it sneezes or coughs. It can also be picked-up from toys, cups, door-handles, and other objects recently in contact with someone with the virus. Older children should be strongly encouraged to cover their mouth and nose during

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coughing and sneezing (some suggest teaching children to cough into the crease of their elbow, as your hands are more likely to spread the germs). Frequent hand washing is important.

Children should be kept home from school or daycare on those days in which they have a fever or frequent cough. Check with your child's daycare or school for their specific policy on returning there with symptoms of croup, as these may vary.

Treatment

Croup will run its course without special treatment. Because it is caused by viruses, *antibiotics will not help with croup*. However, certain treatments can be helpful.

- Dry air makes the cough of croup worse and increased moisture in the air helps decrease the swelling and inflammation around the voice box. Therefore, the most effective treatment for croup is humidified air. Run a **cool mist vaporizer** (recommended over the warm mist vaporizers because some children burn themselves on the warm mist and studies show that either cool mist or steam vaporizers help equally) or a **humidifier** in the child's room. If the child is having their sleep disrupted by the cough and the vaporizer is not helping, run a **hot shower** in the bathroom with the door and windows closed. Sit on the floor with your child (toys or books can keep young children occupied). After 10-15 minutes, many children have their cough settle down and they can return to sleep. If they continue to cough and it is cool or cold outside, try bundling them up and taking them outside. The **cool night air** often helps the cough if the steamy shower did not. This also usually takes 10-15 minutes to work.
- **Tylenol**® or **Motrin**® (acetaminophen or ibuprofen) can be given for fever or pain (sore throat).
- Although the cough of croup does not usually respond well to cough medicines (the medications will not change the cough of croup significantly), it is okay to try an over-the-counter cold and cough medicine for children 4 years old and above. If it does help, it is fine to continue the medicine throughout the illness. However, if it does not help after a dose or two, stop.
- Coughing spasms can be due to the sticky mucous of croup. Drinking **clear fluids** (water, apple juice, lemonade, etc.) can help relax the vocal cords and loosen the mucous.
- The laryngitis (losing your voice and sounding hoarse) gets better over a few days with resting your voice. Little kids do not rest their voice on request, even with encouragement. Their laryngitis will gradually get better without special treatment.

IF THE CHILD HAS STRIDOR OR OTHER SEVERE BREATHING DIFFICULTY:

- Some children with croup will develop the harsh, raspy, vibrating sound of stridor when they breathe in. This is caused by a narrowing of the airway in your voice box. Stridor gets worse with crying, coughing, and other activity. **It needs treatment right away.** Stridor often

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frightens both children and parents. Do your best to remain calm. Stridor is often worse in the night.

- If you hear stridor, the breathing becomes more difficult, or the breathing becomes tighter:
 - Sit in the bathroom with your child with the door and windows closed. Run a **steamy shower**. It may take 10-20 minutes to help. If better, put back in bed with the vaporizer running in their room. This steamy shower treatment can be repeated as often as needed.
 - If that has not helped, bundle up your child and take them **outside into the cold/cool night air** (it is not as effective, but standing right in front of the open freezer door also can help) for 10-20 minutes. If that helps, put back in bed with the vaporizer running in their room. This cool night air treatment can be repeated as often as needed.
 - If not better and after office hours, your child needs to be seen right away at Nationwide Children's Hospital Emergency Department or Urgent Care. If during walk-in hours at 8 a.m., we want to see your child at that time. During routine office hours, call for an appointment.

CALL 911 (THE RESCUE SQUAD) IF YOUR CHILD TURNS BLUE OR DUSKY, PASSES OUT, OR STOPS BREATHING.

Medications

A few notes on "steroids":

Some children seen in the office with more severe croup will need to be treated with steroids. These help the naturally occurring steroids in our body **fight the inflammation** in the respiratory tract caused by the croup virus. It has been shown that these steroids decrease the chances that the croup will worsen. They also seem to help decrease the worst of the symptoms of croup. They are given as either a shot (injection) of Decadron® (dexamethasone) or a few day course of a liquid called Orapred®, Prelone®, or Pediapred® (prednisolone). Most cases of croup seen in our office do not need these steroids. But, for those children that do, it is important to remember a few things:

- Either the shot or the liquid take a few hours to begin working in your child's system.
- The shot keeps working for few days after just the one dose.
- Continue having your child take the liquid medicine as instructed, even if they seem much better before they are done.
- Let your doctor know if your child has never had chicken pox but has been directly exposed to it in the last month (this is because the steroids could cause a worse case of chicken pox).
- Although there are no longer-term side effects from the steroids given for croup, some children get headaches, grouchiness, moodiness, an increase in appetite, or stomachaches while they are taking them or for a few days after the shot.

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- If the liquid forms of the medicine do not taste good to your child, the liquid can be mixed with something to drink (such as a small amount of juice or chocolate milk) to make it taste better. Many pharmacists recommend flavoring this medication.

Cough and Cold Medicines:

If you choose to try a cough and cold medicine, here are some you may find helpful. All of these have a cough suppressant (dextromethorphan, usually called "DM"). Note: 'tsp.' = teaspoon, which is 5 ml (or 5 cc). Other cough medications are discussed on the Coughs, Colds, Allergies, and Sinus Infections [protocol](#).

- Dimetapp® Long Acting Cough Plus Cold 6-11 years: 10 ml; 12 years and above: 20 ml. Every **6 hours**.
- Delsym® Children's 12 Hour Cough Liquid 4-5 yrs.: ½ tsp.; 6-11 yrs.: 1 tsp.; 12 years and above: 2 tsp. Every **12 hours**.