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## **What is croup?**

Croup (laryngotracheitis) is a respiratory illness common in young children. The vocal cords, the larynx and the windpipe (trachea) become inflamed and swollen, reducing the flow of air in and out of the lungs.

## **Causes**

Croup is usually caused by a viral infection. The most common is the parainfluenza virus but other viruses, such as measles or the influenza virus, may also cause croup. The viruses are spread through airborne droplets, which are produced by coughing and sneezing, but they can also be passed by touch. Croup most commonly occurs in children between one and three years old. It is more common during the winter months and usually occurs in epidemics.

Children who are born prematurely are more prone to developing croup.

## **Symptoms**

Croup starts like a cold with a stuffy or runny nose and mild fever symptoms. A characteristic 'barking' or hacking cough usually develops within a day or two, which is caused by inflammation of the vocal cords. Hoarseness can also occur. Croup causes the trachea to become inflamed and swollen and thick mucus may be produced. This causes narrowing of the air passages, making breathing difficult. Inhaling is often more difficult than exhaling, and there may be a harsh, rasping or 'crowing' sound when the child breathes in. This is known as stridor and may occur when the child is coughing or crying. Stridor is caused by a reduction in the size of the opening between the vocal cords. In severe croup, stridor occurs when the child is sleeping or resting. Croup symptoms usually get worse at night.

## **Duration**

Croup usually lasts for five to six days. Symptoms are usually most severe during the first three days, and can vary in severity during this time from mild to severe and back again. A mild cough can last for a further week. Most children with croup recover quickly.

## **Diagnosis**

Croup is usually diagnosed by the characteristic cough. Your doctor will ask you about your child's symptoms and examine their chest and throat.

If symptoms are severe and do not respond to treatment, an x-ray of the neck may be taken to rule out other causes such as a foreign object stuck in the throat, or epiglottitis (an infection of the flap of skin covering the windpipe). You should not try to examine your child's throat yourself because, if they have epiglottitis, you may trigger a spasm of the airways.

## **Treatment**

- **Close observation**

Croup can be a serious disease. While your child has croup, sleep in the same room with him. Most children with mild croup recover after a few days and can be treated at home. Make your child comfortable and make sure he gets plenty of rest. Young children may find croup distressing and it is important to calm them down and sit them upright to help them to breathe more easily.

- **Warm fluids for coughing spasms**

Coughing spasms are often due to sticky mucus caught on the vocal cords. Warm fluids may help to relax the vocal cords and loosen up the mucus. Use clear fluids. Give warm fluids only to children over four months old.

- **Cough medicines are generally not recommended.**

- **Mist treatment**

Warm, moist air can help breathing and relax the vocal cords. You can give your child a mist treatment at home by doing the following:

1. Have your child breathe through a warm, wet facecloth placed loosely over the nose and mouth.
2. The foggy bathroom: run hot water in the shower with the bathroom door closed. Once the room has become steamy or fogged up, sit with your child in the room for about 10 minutes. Reassure your child by cuddling or reading a story.
3. If you have a humidifier, fill it with warm water and have your child breathe deeply from the stream of humidity. Dry air usually makes a cough worse.

- If the child has fever symptoms, you can give liquid paracetamol to lower temperature. However, you should not give cough medicines that cause drowsiness. This will not help a child who may need extra effort to breathe.

- **Avoid smoky environments.**

Most children settle down with treatment and then sleep peacefully through the night. In severe croup, however, the upper airway may become so swollen that it becomes difficult for the child to breathe. Watch your child closely and call your doctor if:

- Your child starts drooling, spitting, or has difficulty swallowing.
- Your child's lips and skin are bluish.
- Your child is distressed or agitated.
- Your child's breathing becomes more difficult or very fast.
- The child's ribs can be seen to retract or suck in when the child breathes in.
- The warm mist fails to clear up the stridor in 20 minutes.
- Your child looks very sick.
- You are worried.

Children with severe croup may need hospital admission for humidified oxygen, IV fluids and, in some cases, steroid treatment. Occasionally a tube is put into the trachea through the nose or mouth to help with breathing (intubation).

### **Complications**

- Very rarely, severe croup may lead to life-threatening airway obstruction requiring intubation. This is where a tube is passed through the larynx into the trachea to provide oxygen while the child is under sedation.
- Children who are born prematurely or who have a history of lung disease, such as asthma, may develop severe breathing difficulties if they get croup.
- Rarely, some children develop secondary infections such as an ear infection or pneumonia.

### **Prevention**

- Make sure children wash their hands regularly to avoid spreading infection.
- Avoiding contact with people with respiratory infections can also reduce the spread of viruses that cause croup.