



CROUP





All about...

CROUP



Overview

Croup is a childhood condition that affects the windpipe (trachea), the airways to the lungs (the bronchi) and the voice box (larynx).

Children with croup have a distinctive barking cough and will make a harsh sound, known as stridor, when they breathe in.

They may also have a hoarse voice and find it difficult to breathe because their airway is blocked.

Croup can usually be diagnosed by a GP and treated at home. However, if your child's symptoms are severe and they are finding it difficult to breathe, take them to the nearest hospital's accident and emergency (A&E) department.

Why does croup happen?

Commonly, croup is caused by a virus. Several viruses can cause croup but in most cases it is the parainfluenza virus.

Who is affected by croup?

Croup usually affects young children aged between six months and three years, with most cases occurring in one-year-olds.

However, croup can sometimes develop in babies as young as three months, and older children up to 15 years of age. Adults can also get croup but this is rare.

The condition is more common during the late autumn and early winter months.

It tends to affect more boys than girls.

A child may experience croup more than once during childhood.

Treating croup:

Most cases of croup are mild and can be treated at home. Sitting your child upright and comforting them if they are distressed is important, because crying may make symptoms worse. Your child should also drink plenty of fluids to prevent dehydration.

A single dose of an oral corticosteroid medication called dexamethasone or prednisolone will usually also be prescribed to help reduce the swelling in the throat.

If your child has breathing problems they may need hospital treatment, such as adrenaline and oxygen through a mask.

Complications

Most cases of croup clear up within 48 hours. However, in some cases symptoms can last for up to two weeks.

It is extremely rare for a child to die from croup.

There are a number of conditions that can follow croup, such as pneumonia and middle ear infection.

Preventing croup

Croup is spread in a similar way to the common cold, so it is difficult to prevent.

Good hygiene is the main defence against croup, such as regularly washing hands and cleaning surfaces.

A number of your child's routine vaccinations also protect against some of the infections that can cause croup. These include:

- MMR – protection from measles, mumps and rubella
- DTaP/IPV/Hib – protection from diphtheria, tetanus, whooping cough, polio and Haemophilus influenzae type b

Symptoms

A child can get croup at any time of the year, although it's more likely to occur during late autumn or early winter.

This may be because there are more viruses, such as colds and flu, around at this time of year.

Typical symptoms of croup include:

- a bark-like cough
- a hoarse or croaky voice
- difficulty breathing
- a harsh grating sound when breathing in, called stridor

Stridor is often most noticeable when the child cries or coughs. But in more severe cases of croup it can also occur when the child is resting or sleeping.

Symptoms tend to be worse at night.

Some children have cold-like symptoms for a few days before developing croup symptoms.

These cold-like symptoms can include:

- sore throat
- runny nose
- cough
- high temperature (fever)

Although croup symptoms usually only last for a few days, they can occasionally last up to two weeks.

When to seek medical advice

Croup can usually be diagnosed by a GP and mild cases can be treated at home.

However, seek immediate medical attention if your child has any of the following symptoms:

- severe breathing difficulties
- an increased breathing rate (they're too breathless to feed or talk) or 'silent chest' (you're unable to hear sounds of breathing)
- a worsening cough or rasping sound (stridor)
- distress and agitation
- dark, blue-tinged or pale skin
- the skin around their ribs and chest appears to be pulled in and tight, making the bones of their chest and ribs more visible
- abnormal drowsiness and sleepiness
- a rapid heartbeat or a falling heart rate
- a very high temperature
- an inability to drink fluids

You should take them to your nearest hospital's accident and emergency (A&E) department or dial 999 for an ambulance.

Some of these symptoms may indicate a potentially life-threatening underlying condition called epiglottitis (inflammation and swelling of the epiglottis).

The symptoms could also indicate tracheitis (inflammation of the windpipe), which also requires immediate medical attention.

Difficulty breathing

Always seek medical advice if you or your child has breathing problems.

If you or they have severe breathing difficulties, dial 999 to ask for an ambulance.

Causes

Croup usually develops as the result of a viral infection. The infection causes the larynx (voice box) to become swollen and the trachea (windpipe) to become blocked, and may affect the tubes in the lungs (bronchi). It is sometimes called laryngo-tracheo-bronchitis.

Parainfluenza virus

The parainfluenza virus is the most common cause of croup. Four strains of the virus are responsible for most croup cases. These are:

- parainfluenza I
- parainfluenza II
- parainfluenza III
- parainfluenza IV

Parainfluenza I is responsible for most cases of croup.

The virus can be transmitted through close contact with infected people, as well as contaminated objects and surfaces. As with many airborne viruses, the parainfluenza virus is often spread by breathing in droplets from infected coughs or sneezes.

Other viruses

A number of other viruses can also cause croup. These include:

- influenza A and B (flu viruses)
- the measles virus, in children who have not been immunised against measles
- the rhinovirus (common cold virus)
- enteroviruses
- the respiratory syncytial virus (RSV), which can cause severe breathing problems and pneumonia in babies

Other causes

Less common causes of croup include:

- inhaling a small object such as a peanut or a pen cap (inhaled foreign body)
- epiglottitis – inflammation of the epiglottis, (the flap at the base of the tongue that keeps food from going into the windpipe)
- an allergic reaction to substances such as pollen or dust mites
- inhalation of irritants, such as chemicals
- acid leaking back out of the stomach and into the throat (acid reflux)

Diagnosis

A GP can diagnose croup by studying your child's symptoms, particularly the sound of their cough. They may also check your child's temperature for a fever and ask whether they have recently had a cold or viral infection.

In some cases, a pulse oximetry test may be carried out. This involves clipping a sensor onto your child's earlobe or finger to find out their oxygen levels.

The test does not hurt and should not distress your child, and determines whether your child is absorbing enough oxygen into their blood.

Your GP will decide whether your child needs to be admitted to hospital or whether their croup is safe to treat at home.

You should not try to check your child's throat yourself, because it could trigger a spasm (sudden narrowing) of the airway. This could cause the airway to swell even more, making breathing even more difficult.

Ruling out other conditions

Croup can usually be diagnosed by studying your child's symptoms, but your GP may want to rule out other conditions that can cause similar symptoms.

Other possible causes for your child's symptoms are:

- an abnormality of the airway, which has been present from birth
- an abscess in the tissues in the back of the throat
- inhaled material (something they have breathed in)
- swelling of the deeper layers of the skin (angio-oedema)
- epiglottitis
- congenital lesion
- an allergic reaction

In very rare cases, epiglottitis (inflammation of the epiglottis) or tracheitis (inflammation of the windpipe) can cause similar symptoms to croup. In these cases, however, your child will usually feel very unwell generally, rather than just having the specific symptoms of croup.

Differentiating these causes from croup may require further tests.

Further investigation

If your child is admitted to hospital with severe croup, or if treatment is unsuccessful, further investigations may be needed to examine their neck and chest area for a possible obstruction.

An X-ray may be recommended if it is thought your child may have inhaled something and it is obstructing their airway.

Treatment

Treatment of croup depends on how severe the symptoms are. Most cases are mild and can be managed at home.

However, if your child has severe croup, they will need to be admitted to hospital urgently.

Treatment at home

If your GP thinks your child has mild croup, they will usually recommend managing it at home.

This will often involve using children's paracetamol to ease any pain associated with the condition and may help lower your child's temperature if they have a fever.

You should also ensure your child is well hydrated by encouraging them to drink plenty of fluids.

Comforting your child is also important because their symptoms may get worse if they are agitated or crying. If your child is distressed, sitting them upright on your lap will help to comfort and reassure them.

Your GP will usually prescribe a single dose of an oral corticosteroid medication called dexamethasone or prednisolone to help reduce swelling (inflammation) in your child's throat. Side effects of these medications can include restlessness, vomiting, upset stomach and headache.

Steam treatment is not advised for the treatment of croup. There is no evidence that allowing your child to breathe in humid air, for example steam from a hot bath or shower in a closed room, will help.

You should seek urgent medical advice if you notice your child's symptoms getting worse.

Painkillers for children

Painkillers, such as paracetamol and ibuprofen, are available in liquid form for children. You can get liquid paracetamol and ibuprofen over the counter from pharmacies and some supermarkets.

Children under 16 years of age should not be given aspirin.

Speak to your pharmacist or GP if you are unsure about what type of painkiller is suitable for your child.

Do not use cough medicines or decongestants as these do not help ease the symptoms of croup. These treatments often have drowsy side effects, which can be dangerous when a child has breathing difficulties.

Hospital treatment

In severe cases of croup, treatment in hospital may be required.

Breathing problems, such as shortness of breath, are a major symptom of severe croup.

You should dial 999 immediately for an ambulance if your child is struggling to breathe.

If your child has severe croup, they may be given adrenaline through a nebuliser. This will help improve symptoms within 10 to 30 minutes and the effects should last for up to two hours. A nebuliser allows your child to breathe the medication as a mist.

If your child is very distressed and finding it difficult to breathe, they will be given oxygen through an oxygen mask.

As with milder cases of croup, oral dexamethasone or prednisolone will usually be given to help reduce any swelling in your child's airways.

In rare cases croup may require hospitalisation, where a child may need intubation. During intubation, a tube is inserted either through a nostril or the mouth and passed down into the windpipe. This will help your child breathe more easily.

Intubation is usually performed under general anaesthetic. This means your child will be completely unconscious throughout the procedure so they do not experience pain or distress.

Complications

Complications that develop as a result of croup are rare.

Airway obstruction

If an obstructed airway is not treated promptly, it can lead to:

- severe breathing difficulty (respiratory distress)
- respiratory arrest (where breathing stops but the heart continues beating)

Always call 999 for an ambulance if your child is struggling to breathe.

Your child may find it difficult to drink fluids as a result of an obstruction in their airway. However, it is important they have plenty of fluids to avoid dehydration.

If your child refuses fluids, try not to force them. This could distress your child and make the condition worse.

Secondary infection

A secondary infection can sometimes develop following the initial viral infection that caused croup. A secondary infection can potentially cause:

- pneumonia, a chest infection which causes swelling of the tissue in one or both lungs
- bacterial tracheitis, which is a serious and potentially life-threatening infection that can occur after a viral respiratory infection

Other complications

Although rare, other possible complications of croup can include middle ear infection and lymphadenitis, an infection of the glands of the immune system (lymph nodes).