

# Children with Croup

## GP Summary

### How do I know it's croup?

- ✓ A child is likely to have croup if they present with abrupt onset of barking cough, inspiratory stridor and hoarseness.
- ✓ The following clinical features should alert you to **look for conditions other than croup** in a child with croup-like symptoms:
  - Age less than 3 months
  - Expiratory wheeze or loss of voice
  - Toxic appearance or high-grade fever
  - Drooling, difficulty swallowing, anxiety
  - Prolonged, or recurrent stridor
  - Poor response to treatment
- ✓ Consider other diagnoses in children with recurrent croup.
- ✓ Radiography should not be used to diagnose croup or differentiate it from epiglottitis. X-rays may occasionally be warranted in patients with stridor where the diagnosis is uncertain.

### How do I assess severity?

<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>	<u>Life Threatening</u>
<ul style="list-style-type: none"> <li>• Normal mental state</li> <li>• No stridor or only when distressed</li> <li>• No or subtle accessory muscle use, tracheal tug or chest wall retraction</li> <li>• Normal heart rate</li> <li>• Able to talk and/or feed</li> </ul>	<ul style="list-style-type: none"> <li>• Anxious, tired</li> <li>• Stridor at rest</li> <li>• Minor accessory muscle use, tracheal tug or chest wall retraction</li> <li>• Increased heart rate</li> <li>• Some limitation of ability to talk and/or feed</li> </ul>	<ul style="list-style-type: none"> <li>• Agitated, exhausted</li> <li>• Marked accessory muscle use, tracheal tug or chest wall retraction</li> <li>• Markedly increased heart rate</li> <li>• Increased respiratory rate</li> <li>• Too breathless to talk and/or feed</li> <li>• Extreme pallor</li> <li>• Low muscle tone</li> </ul>	<ul style="list-style-type: none"> <li>• Confused, drowsy</li> <li>• Maximal accessory muscle use, tracheal tug or chest wall retraction or exhaustion</li> <li>• Poor respiratory effort</li> <li>• Silent chest</li> <li>• Cyanosis</li> </ul>

- ✗ Loudness of stridor is **NOT** a good indicator of the severity of croup
- ✗ Nasopharyngeal aspiration should **NOT** be undertaken in children with suspected croup.
- ✓ Distressing procedures should be kept to a minimum as agitation may worsen airway obstruction.

### How do I manage it?

- ✓ Any child with croup who also has a pre-existing upper airway abnormality, or a significant relevant comorbidity or chronic illness should be sent by ambulance to an emergency department.
- ✓ Steroid use should be considered in mild croup and given in moderate–severe croup. Steroids should preferably be given orally, or intramuscularly if the child is vomiting.
- ✓ Use either: 0.60mg/kg dexamethasone or 1mg/kg oral prednisolone
- ? Unlike asthma, there is insufficient evidence to determine whether multiple doses of corticosteroids are more effective than single doses

#### Mild croup

- ✓ Consider steroids
- ✓ Send home for observation if you are confident the parent/carer can adequately manage the child's illness

#### Moderate croup

- ✓ Give steroids
- ✓ Children with moderate croup should be given corticosteroids and observed over a 2-4 hour period. These children can be managed in the surgery if facilities are available, otherwise the child should be sent to hospital

#### Severe or life-threatening croup

- ✓ **Call an ambulance**
- ✓ Give oxygen
- ✓ Give adrenaline:
  - Nebulise four 1ml vials (a total of 4mls) of 1:1000 adrenaline solution
  - Do **NOT** dilute as this will decrease the effectiveness
  - Drive nebulisation with oxygen where possible
- ✓ Give steroids




## How do I advise parents of children with croup?

- ✗ Use of mist or humidified air is **NOT** an effective treatment for croup.
- ✗ Cold air has **NOT** been established as an effective treatment for croup.
- ✓ Children with croup should be allowed to adopt the position they find most comfortable.
- ✓ If at any time there is concern about a child's ability to breathe, an ambulance should be called to take the child to hospital.

Parent information is available at [www.healthforkids.net.au](http://www.healthforkids.net.au)

Croup Cases		
Mild Croup	Moderate Croup	Severe Croup
<p>Your receptionist slots in three-year-old Suzy at 9.30am.</p> <p>Suzy has previously been well. Mum says she had symptoms of a cold for the last 48 hours and then last night at 2 am woke with a barking cough and a hoarse voice. From time to time through the night when she was running around she had funny noisy breathing but it settled by this morning. Mum thinks she might have croup as Suzy's older brother had it when he was her age.</p> <p>On examination Suzy is happy, alert and playing with the toys in your consulting room. She has a "seal" like cough from time to time, there is no temperature, no accessory muscle use, no inspiratory stridor and her chest is clear. Heart rate is normal and she is able to talk, albeit with a hoarse voice.</p> <p>A provisional diagnosis of mild croup is made. You explain the diagnosis to mum and provide her with information on the condition asking her to call or to return if symptoms worsen.</p>	<p>Your receptionist calls you to see four-year-old Mei Ling who she has placed in the treatment room as she looks unwell.</p> <p>As you walk in the door you notice that the child looks anxious and is sitting quietly on her father's knee. She has inspiratory stridor at rest and when you examine her chest you note that there is some tracheal tug and chest wall retraction. Her pulse rate is 130. Dad says she was not able to eat or drink that morning.</p> <p>You diagnose moderate croup and administer 17mg of prednisolone (her weight is 17kg).</p> <p>You explain the diagnosis to dad, provide him with information on the condition and then ring the local emergency department. You explain to the father that the child will require observation in hospital to ensure she improves.</p>	<p>You hear a frantic knock on your door.... "Please come quickly, this child looks very sick".</p> <p>An anxious looking mother is clutching a three-year-old boy who appears very pale, agitated and exhausted. He has marked chest wall retraction and tracheal tug and is too breathless to respond to your questions. Mum says he developed noisy breathing through the night and has deteriorated rapidly this morning.</p> <p>On examination he has an increased pulse and respiratory rate and poor air entry. You diagnose severe croup and administer oxygen while asking your receptionist to call an ambulance.</p> <p>You nebulise 4 x 1 ml vials of 1:1000 adrenaline using the oxygen tank to drive it. Because the boy is unable to tolerate any oral intake, you draw up and administer dexamethasone IM at a rate of 0.60mg/kg.</p> <p>By the time you do all that the ambulance has arrived and transports the child to hospital.</p>

Myths dispelled:	We don't know:	Facts confirmed:
<ul style="list-style-type: none"> <li>✗ The use of mist or humidified air is <b>NOT</b> effective in the treatment of croup</li> <li>✗ Loudness of stridor is <b>NOT</b> a good indicator of the severity of croup</li> </ul> 	<ul style="list-style-type: none"> <li>? whether a second dose of steroid after 24 hours is helpful when a child has continuing symptoms</li> </ul>	<ul style="list-style-type: none"> <li>✓ Steroid use has markedly decreased the number of children needing hospital admission with croup</li> <li>✓ Either prednisolone or dexamethasone can be used to treat croup</li> </ul> 