2. Cough in children

Cough in children has different causes to cough in adults and symptomatic treatment is rarely needed or effective. The smaller airways are vulnerable to inflammatory disease causing swelling and obstruction by mucous secretions. Coughing assists clearance of mucous, so do not attempt cough suppression.

It is reasonable to categorise childhood cough as:
- Acute cough – lasting less than two weeks
- Persistent cough – lasting two to four weeks
- Chronic cough – lasting over four weeks

Acute cough

Acute cough is usually viral

Most acute cough in children is associated with viral upper respiratory tract infections (URTI). The majority of these (70–80%) will resolve within one week although 5% will persist for more than four weeks.

No over-the-counter or prescription medicines are effective for the symptomatic relief of acute cough in children but there does appear to be a significant placebo effect. Over-the-counter cough and cold medicines are a significant cause of morbidity, especially from accidental overdose.

It follows that we should look for something soothing and safe for children with acute cough. Honey and lemon drinks have stood the test of time and can be made at home at little cost. However, water should not be boiled, firstly because children are not usually used to hot drinks and secondly because there is risk of scalding.

Aspiration may be missed

Characteristics of an acute cough may raise suspicion of specific causes such as the barking cough of croup or the paroxysmal cough of pertussis. When there are no symptoms of a viral infection, careful consideration needs to be given to an aspiration episode, particularly in younger children. Aspiration most often occurs when an older sibling has fed a young child unsuitable food.

Cough soon after birth is cause for concern

Cough that begins at, or within a few weeks of birth always raises concern. Congenital causes include tracheomalacia, tracheo-oesophageal fistula or laryngeal cleft. Cough starting within a few weeks of birth raises the additional possibilities of suppurative lung disease, aspiration, gastro-oesophageal reflux or infection with chlamydia trachomatis. Cough in a neonate often warrants discussion with a paediatrician.
### Chronic cough

**Cough continuing beyond four weeks needs careful evaluation**

Although a non-specific post-viral cough is still the most likely diagnosis, children who continue to cough beyond four weeks need evaluation to exclude more specific causes. Evaluation of a significant ongoing cough includes history and physical examination with consideration of the need for chest x-ray and, if the child is old enough, spirometry.

Passive or active smoking is a common cause of cough in children. Fifty percent of children over the age of two years, with at least two family members who smoke, have cough.

Some specific causes suggested by the history and examination are described in Table 2:

<table>
<thead>
<tr>
<th><strong>Chronic cough</strong></th>
<th><strong>Specific cause of cough</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accompanying wheeze</td>
<td>Asthma or aspiration</td>
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<tr>
<td>Stridor</td>
<td>Tracheomalacia, foreign body</td>
</tr>
<tr>
<td>Moist cough, clubbing or Failure to Thrive</td>
<td>Suppurative lung disease, cyanotic heart disease, cystic fibrosis, immune or ciliary disorders</td>
</tr>
<tr>
<td>Aspiration episodes or swallowing difficulties</td>
<td>Foreign body or aspiration</td>
</tr>
<tr>
<td>Paroxysmal cough or family members with persistent cough</td>
<td>Pertussis</td>
</tr>
<tr>
<td>Honking cough absent during sleep</td>
<td>Psychogenic or habit cough</td>
</tr>
<tr>
<td>Staccato cough with or without conjunctivitis</td>
<td>Chlamydia</td>
</tr>
</tbody>
</table>
Cough from post-nasal drip, gastro-oesophageal reflux and ‘cough variant asthma’ are unusual in children

Studies show that post-nasal drip is unlikely to cause cough in children and the cough is more likely to be related to coexistent lower airway pathology. The use of medications to ‘dry up’ nasal secretions is therefore unlikely to help the cough.

Gastro-oesophageal reflux has been suggested as a common cause of cough in adults but there is no convincing evidence that it is a common cause of cough in children.

Some children with isolated persistent cough without wheeze receive a diagnosis of ‘cough variant asthma’. However there is no evidence that this is really a form of asthma. Few children with isolated chronic cough have eosinophilic inflammation, atopy or airway hyperresponsiveness and they do not respond to bronchodilators or corticosteroids.

Cough may be the predominant feature of asthma but is usually accompanied by wheeze. Isolated chronic cough with no apparent underlying cause is more likely to be related to a hypersensitive cough reflex.

Treatment of chronic cough targets the cause not the symptoms

Symptomatic treatment of chronic cough is usually not effective or appropriate. It is the underlying cause, which should be the target of therapy.

- Antihistamines are proven to have no benefit in chronic cough and are associated with high levels of side effects
- Cough suppressants such as dextromethorphan, pholcodine and codeine are contraindicated in children
- Menthol inhalations are not effective and are associated with risk of scalding injuries from boiling water
- There is no evidence for effectiveness of herbal remedies
- Emetics, such as guaifenesin, ammonium chloride, ipecacuanha and squill, are used in low doses as expectorants but are not effective

Nevertheless, the significant placebo effect of cough medicines may convince parents that one is needed. A simple soothing demulcent, with ingredients such as honey and lemon, syrup or glycerol, may help reduce coughing and irritation. It is best to avoid those with high sugar content. Lozenges are associated with risk of choking for children, especially those under the age of three years.

All children with cough will benefit from a smokefree environment.