

# CT Children's CLASP Guideline

## Chronic Cough

### INTRODUCTION

Coughing is an important defensive reflex that protects from aspiration of foreign materials, and enhances clearance of secretions and particulates from the airways.

Chronic cough is defined as daily cough lasting for more than four weeks.

The differential diagnosis of chronic cough in children includes:

- Asthma
- Chronic aspiration
- Sinusitis
- Foreign body aspiration
- Sub-acute and chronic infections
- Gastro-esophageal reflux
- Post-nasal drip syndrome

In many patients, a combination of these causes is present. In some patients, genetic diseases like cystic fibrosis and primary ciliary dyskinesia can result in chronic coughing.

### INITIAL EVALUATION AND MANAGEMENT

#### INITIAL EVALUATION:

- Targeted History:
  - History should concentrate on the quality of the cough (e.g. dry, wet, barky)
  - Assess timing of the cough
    - Irritative cough from post-nasal drip, sinusitis, or GERD are often worse immediately upon lying down
    - Nocturnal cough is a major feature of asthma and often in the middle of the night or early morning
- Targeted Physical Exam:
  - Assess for wheezing or prolonged exhalation
    - Have patient take large breath in and exhale slowly and then forcefully to appreciate mild wheezing
  - Assess for presence of post-nasal drip or cobble stoning in the hypopharynx may suggest sinusitis
  - Assess for presence of digital clubbing or nasal polyps raises concern for CF
  - Of note, physical exam will often be negative and further evaluation will be indicated

#### INITIAL MANAGEMENT:

- Provide reassurance that all infants and children may experience prolonged coughs with common colds in their first year at school (or when there are other siblings attending school at home). They can experience as many as 2 URIs per month. This can sometimes feel as if it is a continuous cough, even though the cough may decrease and increase periodically.
- Treat any underlying conditions that are assessed for above. Potential interventions to implement prior to specialist referral:
  - A trial of anti-histamine and nasal steroids, if post nasal drip (rhinitis) is suspected
  - A trial of anti-acid medications, if GERD is suspected (may take up to 2 weeks)
  - A course of amoxicillin-clavulanate (for 2 weeks), if protracted bacterial bronchitis is suspected
  - A trial of albuterol and/or inhaled corticosteroids, if suspicion for asthma
  - Referral for sweat test, if suspicion for cystic fibrosis (associated with FTT and repeated lung infections)
- Additional etiologies and management recommendations by age:
  - Infants <1 year
    - Consider congenital causes, such as impaired swallow mechanism or laryngeal cleft
  - Toddler Age
    - As many as 60% can have "reactive airway disease"

	<ul style="list-style-type: none"> <li>▪ Recommend a trial of albuterol and if positive, inhaled corticosteroids are warranted</li> <li>○ School age children <ul style="list-style-type: none"> <li>▪ Consider Exercise induced cough</li> <li>▪ Trial of albuterol MDI 2-4 puffs at least 20 minutes prior to exercise as a diagnostic tool</li> </ul> </li> <li>▪ Chest x-ray is NOT routinely indicated as part of initial work up and management. CXR may be indicated after a cough has been present for 4 weeks without improvement with initial interventions (i.e. trial of albuterol, or antibiotic course). <ul style="list-style-type: none"> <li>○ The purpose of the CXR is to rule out other causes for cough, such as congenital anomaly, atelectasis, infiltrate, TB nodule, or a mass. Peribronchial thickening in some cases may suggest the presence of asthma.</li> <li>○ Preference is to have CXR completed at CT Children's, but if not feasible, patient may obtain a digital copy from outside facility and bring to their appointment.</li> </ul> </li> <li>▪ Consider pulmonary function testing (PFT) if concern for asthma/reactive airway disease AND the patient is &gt; 6 years old. <ul style="list-style-type: none"> <li>○ Referrals can be made directly to the CT Children's PFT lab with or without a pulmonary consult</li> </ul> </li> </ul>
<b>WHEN TO REFER</b>	<p><b>ROUTINE REFERRAL to Pulmonology:</b></p> <ul style="list-style-type: none"> <li>▪ If you have identified an underlying cause (e.g. sinusitis, postnasal drip, asthma), treat &amp; reassess for response in 3-4 weeks. If symptoms continue for more than 6-8 weeks, place a routine pulmonology referral.</li> <li>▪ To help diagnose cause and management of chronic cough: <ul style="list-style-type: none"> <li>○ After initial visit if underlying cause is not known</li> <li>○ After initial treatment if cough not improved after 6-8 weeks.</li> </ul> </li> <li>▪ History of chronic lung disease, prematurity, previous hospital admission for respiratory cause</li> <li>▪ Known diagnosis of asthma and sxs uncontrolled on medication</li> <li>▪ Failure to thrive/prematurity</li> </ul> <p><b>URGENT REFERRAL ENT/ Emergency Department:</b>  <b>If any presence of history of respiratory distress or difficulty, refer directly to ED. Otherwise contact ENT on-call provider.</b></p> <ul style="list-style-type: none"> <li>• Any history of foreign body aspiration</li> <li>• Respiratory Distress</li> </ul>
<b>HOW TO REFER</b>	<p><b>Referral to Pulmonary via CT Children's One Call Access Center</b>  <b>Phone: 833.733.7669 Fax: 833.226.2329</b>  For more information on how to place referrals to Connecticut Children's, click <a href="#">here</a>.</p> <p><b><i>Information to be included with the referral:</i></b></p> <ul style="list-style-type: none"> <li>▪ Any pertinent clinic notes, including growth chart</li> <li>▪ Any pertinent lab results</li> <li>▪ Any chest radiographs and other chest imaging if applicable</li> </ul>

## WHAT TO EXPECT

### What to expect from CT Children's Visit:

- Spirometry for > 6 years old
- In children with suspicion of chronic aspiration, will consider a video fluoroscopic feeding study (swallow study)
- In children with allergic asthma, skin allergy testing or RAST test may be performed
- If applicable:
  - Blood tests to check for immune function, allergies, genetic testing for primary ciliary dyskinesia, or interstitial lung disease
  - Sweat test
  - CT scan of the chest and/or Flexible bronchoscopy