

Diagnosis and assessment of chronic cough in children – a brief guide and clinical algorithm for primary care

In children a chronic cough is defined as a daily cough for more than four weeks. Proficient management of chronic cough is important as chronic cough is often a sign of underlying pathology, characterised by the “red flags” in history (see Table A).

The most common aetiologies when **examination and chest x-ray are normal** are:



Chronic wet cough

- **Protracted Bacterial Bronchitis (PBB):** a wet/productive cough for more than four weeks and no “red flag” systemic symptoms or signs.

These children have a chronic endobronchial infection and initial treatment is therefore two weeks (+/- further two weeks) of appropriate antibiotics, typically amoxicillin-clavulanate if no history of penicillin allergy. If more than three episodes of PBB in 12 month period or treatment fails, referral to a specialist is recommended.



Chronic dry cough

- **Asthma:** Typically a dry cough and other symptoms or signs such as wheeze and shortness of breath are present. A treatment trial of two to four weeks should reduce symptoms.
- **Post-infectious cough (including pertussis):** A dry cough after a viral infection will typically undergo spontaneous resolution. A watch, wait and counsel approach can be used, with periodic review. The presence of any “red flag” pointers or persistence of the dry cough for six months, mandate referral to a specialist.

Important notes

- Tobacco smoke and other environmental exposures often exacerbate cough but are rarely the cause.
- Thorough history-taking by enquiring about cough onset, duration (when did the child last have days without any cough?), and character (e.g., wet or dry cough) is vital in assessing childhood chronic cough. Clinical examination for abnormal signs and a chest x-ray and spirometry (when able) are important initial steps in all children with chronic cough.



Aboriginal and Torres Strait Islander children are at increased risk of chronic cough. The provision of culturally secure health information facilitates accurate history taking and facilitates the detection and management of chronic cough.

Note: If working with an Aboriginal and Torres Strait Islander family, consider the benefit of having an Aboriginal and/or Torres Strait Islander Health Worker as part of the consultation.

IN ALL CHILDREN with chronic cough (>4 weeks):

1. Do Chest x-ray and spirometry when able
2. Address parental stress and concerns
3. Address exacerbating factors, i.e. cigarette exposure
4. Minimise use of medications
5. Consideration of conditions not to be missed during history and examination. [See Table B.](#)

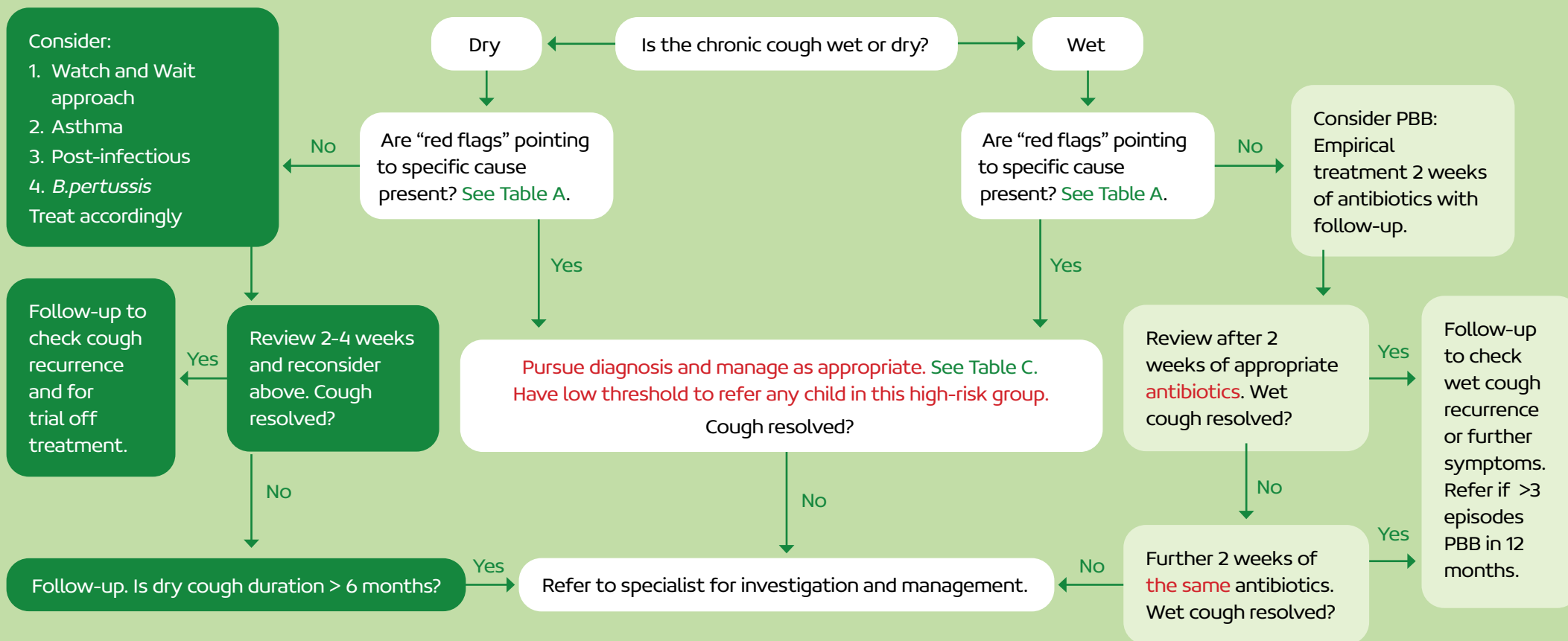


Table A: ‘Red Flags’ and ‘cough pointers’ (indicators of serious pathology)

- Dyspnoea (at rest or exertional)
- Recurrent episodes of chronic or wet or productive cough
- Recurrent pneumonia
- Chest pain
- Haemoptysis
- Systemic symptoms: fever, weight loss, growth failure
- Neurodevelopmental abnormality
- Feeding difficulties (including choking/vomiting)
- Stridor and other respiratory noises
- Abnormal clinical respiratory examination (e.g. crackles, digital clubbing)
- Abnormal chest radiograph
- Abnormal lung function
- Co-existing chronic diseases (e.g. immunodeficiency, syndromes)

Table B: Significant conditions not to be missed

Condition		Examples of typical symptoms
Congenital airway abnormalities		Symptoms commencing in infancy/early childhood.
Recurrent aspiration		Cough or choking with feeds.
Foreign body inhalation		Symptoms commenced after choking episode.
Chronic infection. Examples are:	Tuberculosis	Focal signs, weight loss, lymphadenopathy, contact history.
	Lung abscess	Fever and local signs.
	Pertussis	Dry cough, contact history. Paroxysms in unvaccinated children.
Bronchiectasis/chronic suppurative lung disease		Wet cough not responding to 4 weeks of antibiotics or recurring.
Chronic atelectasis		Focal signs on auscultation.
Interstitial lung disease		Diffuse inspiratory crepitations, growth failure +/- hypoxia.

Table C: The treatment recommendation refers to the efficacy of treatment on cough occurring in association with the conditions

Recommendations for CHILDREN	Level of Evidence*	Strength of Recommendation†
Cessation of parental smoking to reduce cough.	Good	Strong
COUGH WITH ALLERGIC RHINITIS Treatment according to current rhinitis management guidelines involving topical nasal corticosteroid, antihistamines, and allergen management.	Poor	Weak
COUGH WITH OBSTRUCTIVE SLEEP APNEA Tonsillectomy and adenoidectomy in children.	Poor	Weak
COUGH WITH ASTHMA Treatment according to current asthma management guidelines and involving education and self-management, inhaled bronchodilators and inhaled corticosteroids. If empirical treatment is used, review in 2-4 weeks.	Good	Strong
COUGH WITH PROTRACTED BACTERIAL BRONCHITIS The use of medium-term (2 to 4 weeks) antibiotics for protracted bacterial bronchitis.	Excellent	Strong
COUGH WITH GORD Treatment(s) for GORD should not be used when there are no gastro-intestinal clinical features of GORD and pediatric GORD guidelines should be used to guide treatment and investigations. In children the use of laparoscopic fundoplication for the treatment of chronic cough.	Good Poor	Weak Strong against
Nonspecific or Refractory Dry Cough in CHILDREN	Level of Evidence*	Strength of Recommendation†
Address patient/parental stress and concerns.	Poor	Strong
Address exacerbating factors e.g. tobacco smoke exposure.	Good	Strong
Minimise use of medications other than demulcents such as honey (if no contraindications to its use exist).	Good	Strong
Adopt counsel, watch, wait and review approach.	Excellent	Strong
Empiric trial of inhaled corticosteroid therapy.	Poor	No recommendation
Empiric trial of proton pump inhibitors.	Good	Strong against
Speech pathology techniques designed to relieve glottal constriction during inspiration and to recognise and alter response to precipitants.	Poor	No recommendation
Anti-tussive therapy with narcotic.	Good	Strong against

*NHMRC additional levels of evidence and grades for recommendations for developers of guidelines.

†The GRADE (Grading of Recommendations Assessment, Development and Evaluation) system was used to grade the strength of recommendations.