



Cough in Children

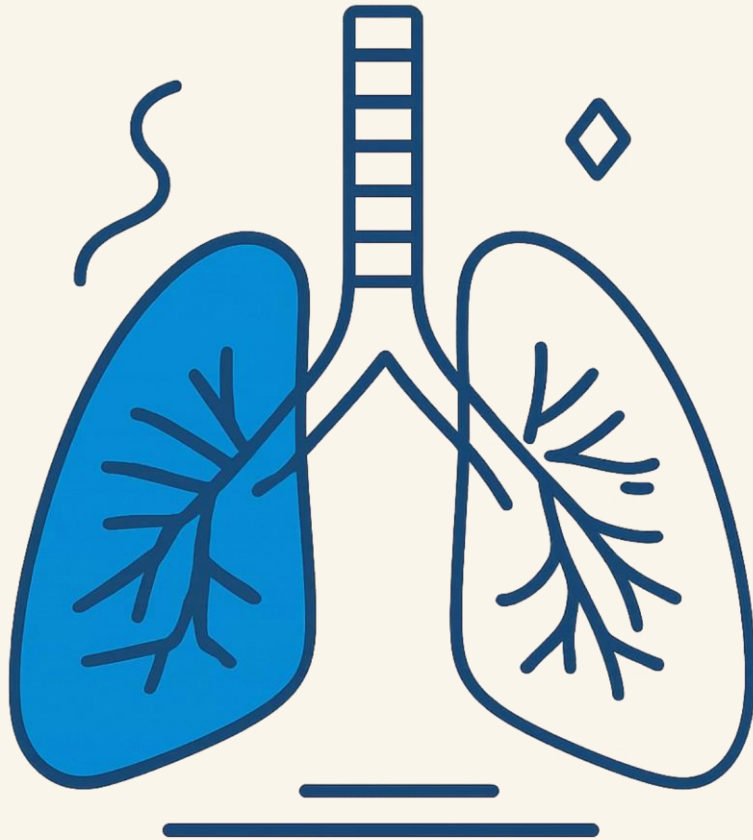
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Cough in Children

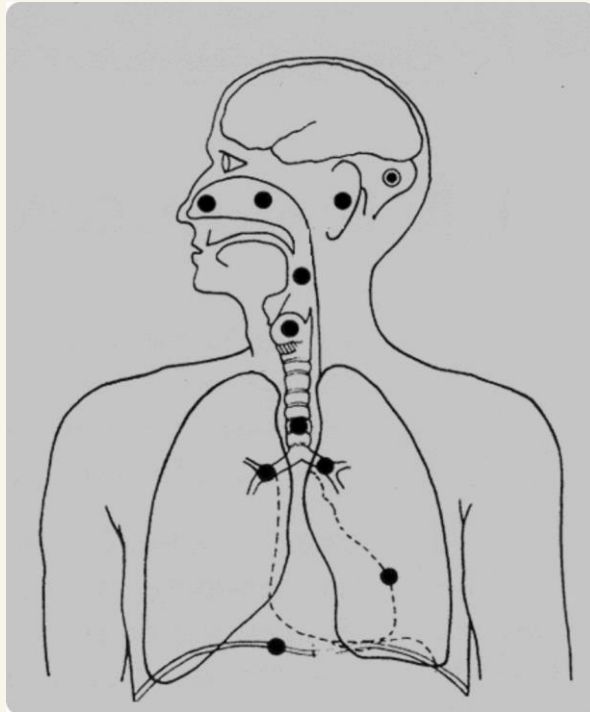
Overview

- Common symptom in pediatric practice
- Most cases caused by self-limited respiratory tract infections
- Not an illness by itself, but a **cardinal indicator** of underlying pathology

Defensive Mechanisms of the Lung

- **Specialized epithelial barriers**
- Immune responses
- Neural reflex responses: **cough reflex**

What Makes a Child Cough



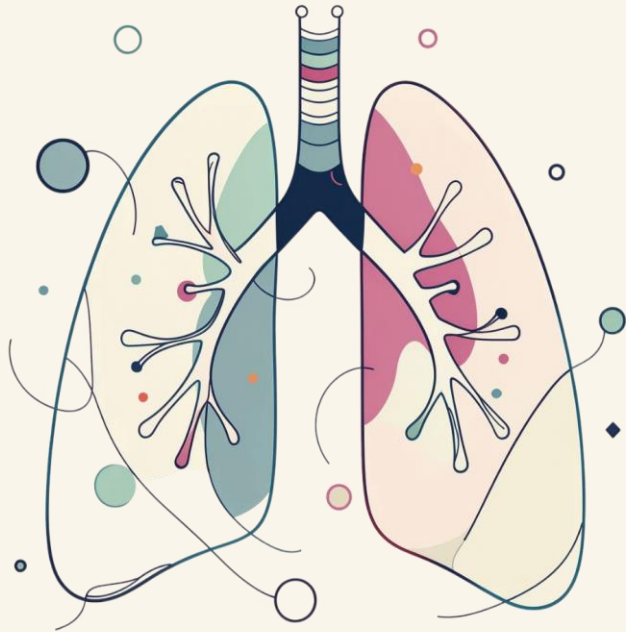
Stimuli

- **Mechanical:** Touch, pressure, deformation
- **Chemical:** Smoke, inflammatory mediators

Cough Pathway

- **Afferent fibers:** Vagal, Trigeminal, Glossopharyngeal
- **Cough center:** Upper brainstem, Pons
- **Cough receptors:** Pharynx, larynx, trachea, main bronchus, nose, paranasal sinus, external ear, pericardium, pleura, diaphragm
- **Efferent fibers:** Vagal, Phrenic, Spinal motor nerves
- **Muscles:** Laryngeal, diaphragmatic, thoracic, abdominal

Phases of Cough



1

Inspiratory

Deep breath (1/5–2 tidal volume)

2

Compressive

Glottic closure, contraction of respiratory muscles

3

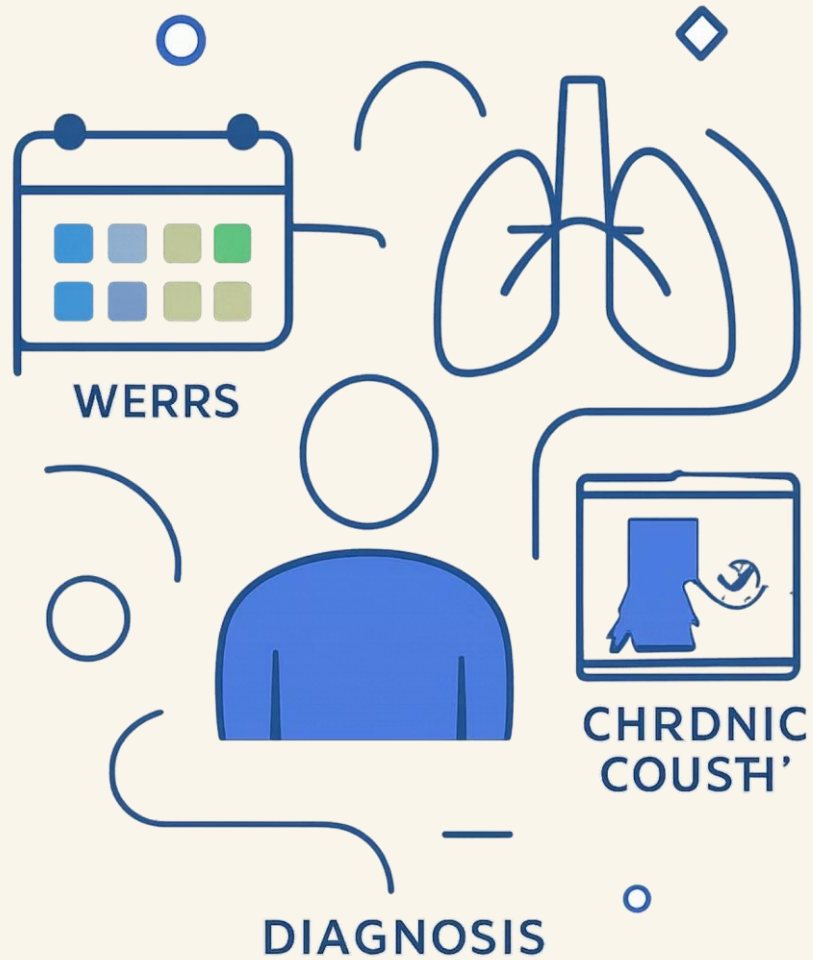
Expressive

Glottic opening, explosive exhalation

4

Relaxation

Relaxation of all involved muscles



Definition of Chronic Cough

- ❏ **Chronic cough is defined as cough lasting for more than 4 weeks.**

Acute URTI-Related Cough

- Typically resolves within **1 to 3 weeks**
- **10%** of cases persist beyond 25 days

Clinical Significance

When cough extends beyond the expected resolution window of an acute upper respiratory tract infection, further evaluation for an underlying cause is warranted.

Classification of Chronic Cough

Normal or Expected Cough

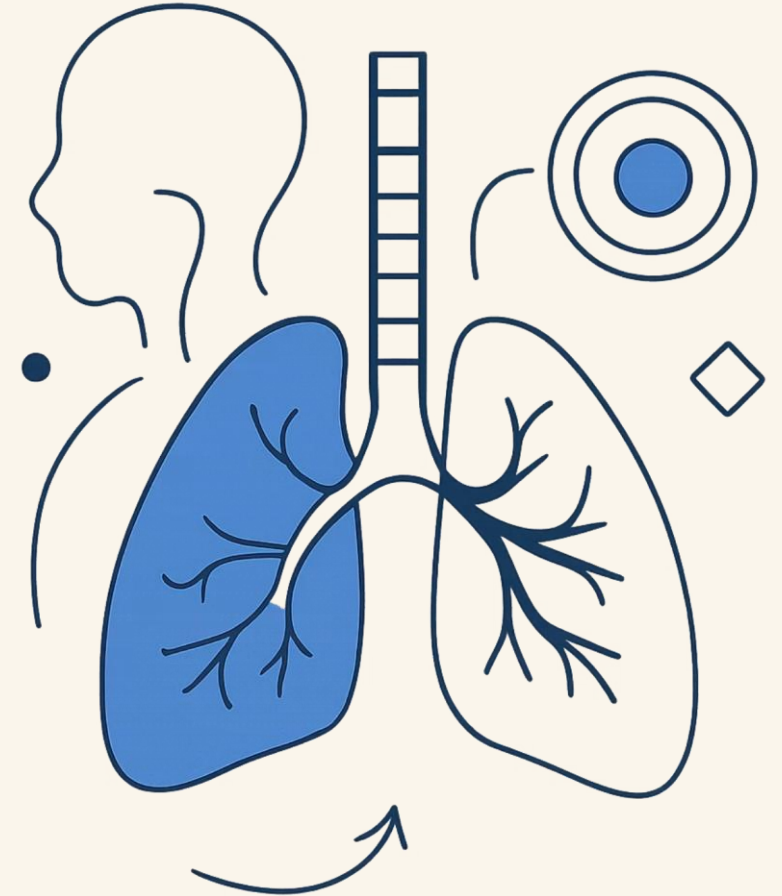
Frequent URTIs in otherwise healthy children with normal growth and development

Non-Specific Cough

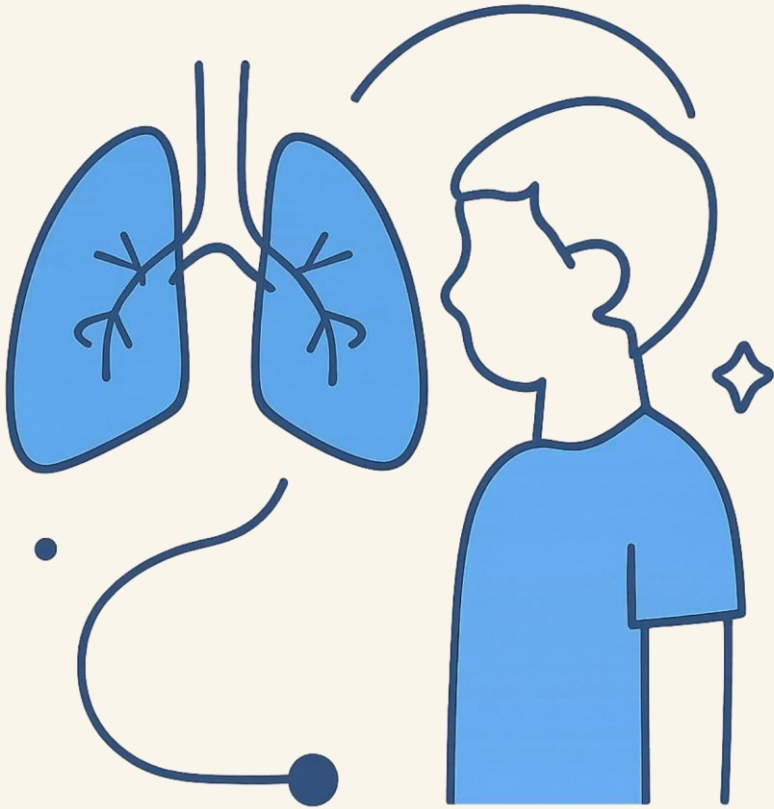
No identifiable underlying respiratory disease; most commonly post-viral in origin

Specific Cough

Presence of specific pointers suggesting an underlying respiratory or systemic disease



Normal or Expected Cough



The "Normal but Unlucky" Child

- **6–10 upper respiratory tract infections per year:** common and expected
- Growth and development: **normal**
- Chest X-ray and physical exam between episodes: **normal**
- No family history of severe or recurrent infections
- No serious extrapulmonary infections

Management

Rubin BK. Evaluation of the child with recurrent chest infections. Pediatr Infect Dis 1985

Reassurance

Parental reassurance is the primary and most important intervention — no further workup required in typical cases.

Specific vs. Non-Specific Cough



Specific Cough

Presence of specific pointers — symptoms and signs indicating an underlying respiratory or systemic disease requiring targeted investigation and management.

- Abnormal chest X-ray
- Digital clubbing
- Failure to thrive
- Hemoptysis
- Recurrent pneumonia

Non-Specific Cough

Absence of identifiable respiratory disease — the majority of cases have no serious aetiology.

- Most common diagnosis: **post-viral cough**
- Usually self-resolving over weeks
- Watchful waiting is appropriate in most cases
- Reassess if cough persists or new symptoms emerge

Evaluation of Patients

History Taking

- **Personal history:** Neonatal problems, feeding history, allergy history, previous infection or illness, vaccination, growth, development, appetite, activity
- **Family history:** Atopy, cystic fibrosis, immunodeficiency
- **Environmental factors:** Smoke exposure, pets
- **Previous therapy**

Cough Characterization

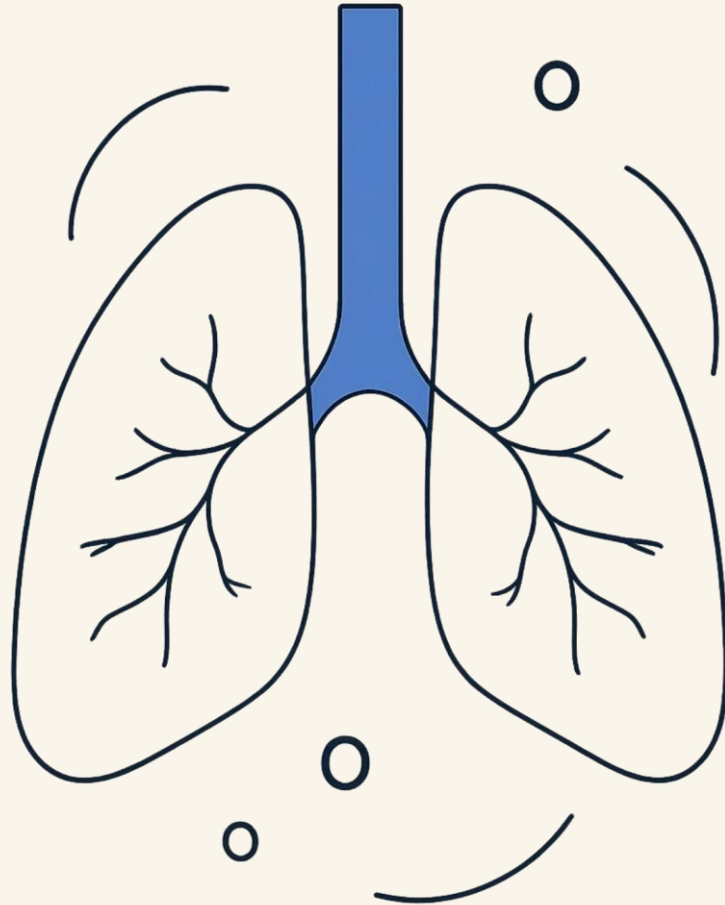
- **Quality:** Nonproductive (dry) or productive (wet)
- **Timing:** Supine position, nocturnal, upon awakening
- **Trigger factors:** Exercise, temperature changes, seasonal variation

Physical Examination

Thorough physical examination to identify specific pointers of underlying disease.



Key Takeaways



1 Cough is a Symptom, Not a Disease

It serves as a cardinal indicator of underlying pathology and a vital lung defense mechanism.

2 Chronic = More Than 4 Weeks

Cough persisting beyond 4 weeks warrants systematic evaluation to identify or exclude specific causes.

3 Classify Before You Treat

Distinguish between normal/expected, non-specific, and specific cough to guide appropriate management and avoid unnecessary investigations.

4 History is the Cornerstone

A thorough personal, family, and environmental history combined with careful cough characterization directs the diagnostic pathway.