

## WHEEZING

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Noisy breathing in infants is a common presenting complaint. The first step toward formulating a differential diagnosis is to characterize the type of sound heard. Stridor, a harsh, high-pitched respiratory sound typically heard on inspiration, often indicates laryngeal obstruction. Wheezing, a musical sound heard on expiration, is caused by partial obstruction of the lower airway. In young children, sometimes expiratory noises cannot be easily distinguished from inspiratory ones, and at times both may be present. Among these causes of noisy breathing, wheezing is the most common of clinical significance.

### What was the age at onset of wheezing?

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- Onset at birth or during early infancy suggests congenital structural abnormalities. Congenital diaphragmatic hernias are usually detected on prenatal ultrasound. Vascular rings and aberrant vessels can cause wheezing or other respiratory symptoms early in life. Infants <2 years of age are more susceptible to lower respiratory infection, such as bronchiolitis, whereas adolescents are more likely to have asthma or infection caused by atypical bacteria, such as *Mycoplasma pneumoniae*.

### Is the wheezing a new onset or recurrent?

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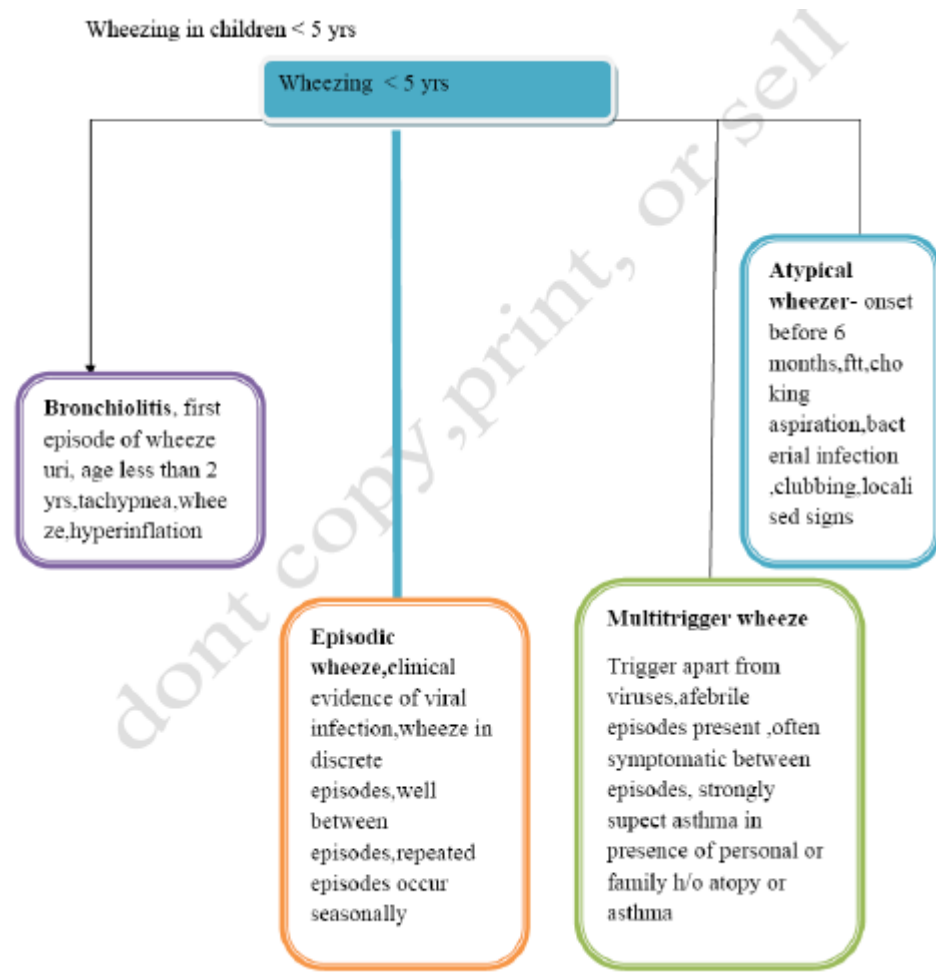
- The initial episode of wheezing in a previously healthy infant in conjunction with symptoms of upper respiratory tract infection usually indicates bronchiolitis. Recurrent episodes of wheezing may suggest gastroesophageal reflux. However, if precipitated by upper respiratory infections, recurrent wheezing may suggest reactive airways disease. Recurrent wheezing or "difficult to control asthma" should lead to a consideration of cystic fibrosis, immotile cilia syndrome, recurrent aspiration, immune deficiency, or anatomic abnormalities.

### Is the wheezing episodic or persistent?

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- Persistent wheezing suggests mechanical obstruction from a variety of causes, such as airway foreign body, congenital airway narrowing, or external compression by a mediastinal mass or vascular anomaly.

## What are d/d in under five wheezing?



## how to dx asthma?

**Step 1 symptoms recurrent airway obstruction** recurrent wheeze, recurrent isolated cough, recurrent breathlessness, nocturnal cough, tightness of chest, exercise stress activity induced symptoms (3 or more attacks, lasting for more than 24 hours, which responded to bronchodilators is likely to be bronchial asthma in an older child. In a young child recurrent wheeze/cough/breathlessness could be due to other illness, but a parental/sibling history of asthma, personal history of atopic dermatitis, allergic rhinitis, multiple triggers increases the possibility bronchial asthma)

**Step 2**—signs of generalized airway obstruction (generalized wheeze, prolonged expiration, chest hyperinflation)

**Step 3- Assess clinically to qualify symptoms**

**Step 4a**—quantify symptoms over a period of time as intermittent persistent

**4b-** assess level of control

### TYPICAL OF ASTHMA

Recurrent episodes of air flow obstruction- onset above 5 yrs,afebrile episodes,personal atopy,asthma in parent or sibling,exercise induced symptoms,trigger induced symptoms,seasonal exacerbations,relief

- Was the episode of wheezing preceded by choking or gagging?

Aspiration of a foreign body is sometimes associated with the sudden onset of symptoms after gagging or choking. Foreign body aspiration is most common in children between the ages of 1 and 4 years. Symptoms depend on the size and location of the foreign body. The wheezing may be unilateral and secondary bacterial infection may occur.

- Was the wheezing preceded by upper respiratory tract infection?

Antecedent upper respiratory tract infection is suggestive of an underlying inflammatory or infectious etiology. Typically bronchiolitis follows a URI.

- What is the child's weight and height?

**Asthma is the most common chronic illness in children**

Features suggestive of cystic fibrosis include failure to thrive, steatorrhea, or recurrent infections.

- Is there a history of recurrent bacterial infection?

Children with cystic fibrosis often have recurrent respiratory tract infections. Ciliary dyskinesia is associated with frequent cough, sinusitis, and otitis media.,immune deficiency is another cause

- Is there a history of preterm birth or did the child require mechanical ventilation or prolonged supplemental oxygen after birth?

Bronchopulmonary dysplasia chronic lung disease of prematurity should be considered.

**Are there allergic shiners, Dennie lines, nasal crease, or atopic dermatitis?**

The presence of atopy increases the likelihood of asthma.

## WHAT ARE THE FEATURES DIFFERENT CAUSES?

Diagnosis	In favour
Asthma	<ul style="list-style-type: none"><li>• History of recurrent wheeze, some unrelated to coughs and colds</li><li>• Family or personal history of asthma/eczema/hay fever</li><li>• Hyperinflation of the chest</li><li>• Prolonged expiration</li><li>• Reduced air entry (if very severe airway obstruction)</li><li>• Good response to bronchodilators</li></ul>
Bronchiolitis	<ul style="list-style-type: none"><li>• First episode of wheeze in a child aged &lt;2 years</li><li>• Wheeze episode at time of seasonal bronchiolitis</li><li>• Hyperinflation of the chest</li><li>• Prolonged expiration</li><li>• Reduced air entry (if very severe, airway obstruction)</li><li>• Poor / no response to bronchodilators</li></ul>
Wheeze associated with lower respiratory cough or cold	<ul style="list-style-type: none"><li>• Wheeze always related to coughs and colds</li><li>• No family or personal history of asthma/eczema/hay fever</li><li>• Prolonged expiration</li><li>• Good response to bronchodilators</li></ul>
Foreign body	<ul style="list-style-type: none"><li>• History of sudden onset of choking or wheezing</li><li>• Wheeze may be unilateral</li><li>• Air trapping with hyper-resonance and mediastinal shift</li><li>• Signs of lung collapse: reduced air entry and impaired percussion note</li><li>• No response to bronchodilators</li></ul>
Pneumonia	<ul style="list-style-type: none"><li>• Fever</li><li>• Cough with fast breathing</li><li>• Lower chest wall indrawing</li><li>• Crackles/crepitations on auscultation</li></ul>

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