

## **Recurrent Wheezers Below Five Years of Age**

### **A Clinical Guide for Primary Care**

#### **1. Introduction**

Recurrent wheezing is a common pediatric concern, especially in children under five years of age. It is characterized by repeated episodes of high-pitched whistling sounds during breathing due to narrowed airways. While many children outgrow this, some may progress to persistent asthma. Early identification, differentiation, and management are crucial to prevent morbidity and improve quality of life.

#### **2. Pathophysiology of Wheezing in Young Children**

Infants and young children have narrower airways; even minor inflammation can lead to significant obstruction.

Viral infections (especially RSV, rhinovirus) are common triggers.

Hyper-reactive airways, atopic predisposition, and environmental pollutants contribute.

Airway smooth muscle tone, mucosal edema, and mucus plugging play roles.

#### **3. Classification of Wheezing Phenotypes**

1. Episodic (Viral) Wheeze: Triggered by viral URTIs; symptom-free between episodes.

2. Multiple Trigger Wheeze: Triggered by infections, allergens, exercise, laughing, crying.

3. Phenotypic Types:

Transient early wheeze

Persistent wheeze

Late-onset wheeze

## 4. Differential Diagnosis

Important to rule out other causes of recurrent respiratory symptoms:

Condition	Key Clues
Asthma	Family history, atopy, triggers
Bronchiolitis	Viral prodrome, first episode
Foreign body aspiration	Sudden onset, localized wheeze
GERD	Vomiting, poor weight gain
Tracheomalacia	Expiratory stridor
Congenital anomalies	Persistent symptoms from infancy
Cystic fibrosis	Failure to thrive, recurrent infections
Primary Ciliary Dyskinesia	Chronic cough, sinusitis, situs inversus

## 5. Clinical Evaluation

History

Frequency and duration of wheezing episodes

Triggers: viral illness, cold air, activity

Birth history, feeding, growth milestones

Family history of atopy, asthma

Examination

Respiratory rate, use of accessory muscles

Auscultation: wheeze, crackles

Signs of chronic illness: clubbing, failure to thrive

## 6. Investigations

While most cases are clinical diagnoses, some investigations are used in atypical or severe cases:

Test	Introduction
Chest X-ray	Rule out structural anomalies
CBC, eosinophil count, IgE	Atopy assessment
Sweat chloride test	Suspected cystic fibrosis
Flexible bronchoscopy / CT	Complex cases
Allergy testing	If allergic triggers suspected

## 7. Management

Acute Episode

Inhaled bronchodilators (salbutamol) via spacer

Systemic steroids (oral prednisolone) for moderate-to-severe cases

Oxygen therapy if hypoxic

Maintenance Therapy

Inhaled corticosteroids (ICS): First-line for persistent symptoms

Montelukast: For viral-induced wheeze or intermittent symptoms

Avoid routine use of oral steroids or antibiotics

Non-Pharmacologic Support

Nebulization with saline for comfort

Hydration and rest

Avoidance of known triggers

## 8. Preventive Strategies

No exposure to tobacco smoke (indoor or outdoor)

Vaccination: Influenza, pertussis, and pneumococcal vaccines are essential

Avoidance of allergens and pollutants

Breastfeeding: Protective effect against respiratory infections

Adequate nutrition and vitamin D

## 9. When to Refer

Recurrent wheeze not responding to usual treatment

Poor growth, developmental delay

Clubbing or persistent hypoxia

Suspicion of structural anomaly or genetic disorder

Parental anxiety or poor response to reassurance

## 11. Parent Education and Counseling

Empowering parents is key to effective management and reduced anxiety.

Key Messages for Parents:

Not all wheezers have asthma. Many children grow out of wheezing by 5–7 years.

Use medications correctly, especially inhalers and spacers.

Know how to recognize danger signs: fast breathing, chest retractions, poor feeding, bluish lips.

Avoid smoke, incense, strong perfumes, and indoor dampness/mold.

Keep regular follow-ups, especially during seasonal changes.

Emergency plan: Know when to seek immediate care (e.g., unresponsive child, worsening breathing).

Provide them with a printed Wheeze Action Plan for home use.

## **11. Summary and Take-Home Points**

Recurrent wheeze in under-fives is common but needs structured evaluation.

Most cases are benign and outgrown, but some may progress to asthma.

Proper classification and early treatment improve outcomes.

Environmental control and parent education are as important as medication.

A collaborative approach—pediatrician, family, and sometimes Ayurveda—can ensure holistic care.

## **12. References**

GINA Guidelines 2024

Indian Academy of Pediatrics (IAP) Respiratory Care Guidelines

Nelson Textbook of Pediatrics

Various peer-reviewed journal articles (you may add citations as per your preference)