



Bronchiolitis Management – Revision Sheet

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1. Definition (2–3 lines)

Bronchiolitis is an **acute viral lower respiratory tract infection** affecting infants, characterized by inflammation and obstruction of the small airways (bronchioles). It most commonly affects children **<2 years**, with the highest incidence in those **<12 months**. **Respiratory syncytial virus (RSV)** is the most common cause.

Diagnosis is clinical. Routine investigations are usually unnecessary.

2. Clinical Presentation

Typical History

- Age <2 years (peak 2–6 months)
 - Coryza and low-grade fever for 1–3 days
 - Progressive cough
 - Poor feeding
 - Increasing respiratory distress
 - Apnea (especially neonates and young infants)
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Physical Examination

Mild

- Tachypnea
- Mild chest recession
- Diffuse crackles

- Wheeze
 - Feeding >75% normal
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Moderate

- Moderate chest recession
 - Nasal flaring
 - Feeding 50–75%
 - Tachycardia
 - Oxygen saturation 90–92%
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Severe

- Severe respiratory distress
 - Marked retractions
 - Grunting
 - Apnea
 - Cyanosis
 - Exhaustion
 - Feeding <50%
 - SpO₂ <90%
 - Altered mental status
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3. Diagnostic Approach

Step 1: Is this bronchiolitis?

Typical infant with:

✓ Viral prodrome

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✓ First episode of wheeze/crackles

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✓ Diffuse bilateral findings



Clinical diagnosis

Step 2: Assess Severity

Assess:

- Airway
- Respiratory rate
- Work of breathing
- Oxygen saturation
- Feeding ability
- Hydration
- Mental status

Step 3: Identify High-Risk Infants

Higher risk:

- Age <3 months
- Prematurity (<37 weeks)
- Congenital heart disease
- Chronic lung disease
- Neuromuscular disease
- Immunodeficiency

These children require closer observation.

4. Differential Diagnosis

Condition	Distinguishing Features
Asthma / viral wheeze	Older child, recurrent wheeze, bronchodilator response
Pneumonia	High fever, focal crackles, focal consolidation
Foreign body aspiration	Sudden onset, unilateral findings
Congenital heart failure	Murmur, hepatomegaly, poor weight gain
Sepsis	Toxic appearance, poor perfusion
Pertussis	Paroxysmal cough, inspiratory whoop
Croup	Barking cough, stridor
Pneumothorax	Sudden deterioration, unilateral absent breath sounds

5. Investigations

Usually NOT Required

Bronchiolitis is a **clinical diagnosis**.

Do NOT routinely perform:

- Chest X-ray
 - CBC
 - CRP
 - Blood culture
 - Viral PCR
 - Blood gases
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Investigations Only If

Chest X-ray

If:

- Diagnostic uncertainty
 - Severe disease
 - Suspected pneumothorax
 - Suspected bacterial pneumonia
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Blood Gas

If:

- Severe respiratory distress
 - Impending respiratory failure
 - ICU consideration
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Viral PCR

Useful only for:

- Infection control
- Hospital outbreaks
- Selected hospitalized patients

Does **not** change routine management.

6. Management Algorithm

Suspected bronchiolitis

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Assess ABCDE

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Assess severity

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Mild disease

- Home care
- Nasal saline
- Feeding advice
- Safety-net advice

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Moderate disease

- Oxygen if SpO₂ <90%
- Hydration
- Nasal suction before feeds
- Observe feeding

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Severe disease

- High-flow nasal cannula (HFNC)
- IV/NG fluids
- Consider CPAP
- PICU referral if deterioration

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Respiratory failure

- Intubation and ventilation

Supportive Care (Main Treatment)

Airway

- Gentle nasal suction before feeding
 - Saline nose drops may help
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Oxygen

Give oxygen if:

SpO₂ <90% (AAP)

(Target may differ slightly by local guideline.)

Preferred:

- Nasal cannula
 - Face mask if needed
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Hydration

If unable to feed:

- Nasogastric feeding
- IV fluids

Monitor hydration carefully.

High-Flow Nasal Cannula (HFNC)

Consider when:

- Persistent hypoxemia
 - Moderate–severe work of breathing
 - Failure of standard oxygen
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CPAP

If:

- Significant respiratory distress
 - HFNC failure
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Mechanical Ventilation

If:

- Respiratory failure
 - Recurrent apnea
 - Severe hypercapnia
 - Exhaustion
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Therapies NOT Routinely Recommended

- ✗ Salbutamol
 - ✗ Adrenaline (epinephrine)
 - ✗ Corticosteroids
 - ✗ Antibiotics (unless bacterial infection suspected)
 - ✗ Hypertonic saline in ED
 - ✗ Chest physiotherapy
 - ✗ Routine nebulizers
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7. Drug Summary Table

Drug	Role	Dose	Recommendation
Oxygen	Hypoxemia	Titrate to keep SpO ₂ ≥90%	✓ First-line
Normal saline nose drops	Nasal obstruction	Few drops before suction	✓ Useful
IV fluids	Dehydration	Maintenance fluids	✓ If unable to feed
NG feeds	Poor oral intake	Continuous/intermittent	✓ Preferred if gut functional
Salbutamol	Bronchodilator	—	✗ Not routine
Epinephrine	Bronchodilator	—	✗ Not routine
Corticosteroids	Anti-inflammatory	—	✗ Not recommended
Antibiotics	Bacterial infection only	According to indication	✗ Not routine

8. Admission Criteria

Admit if any of the following:

- SpO₂ <90%
- Moderate/severe respiratory distress
- Apnea
- Cyanosis
- Feeding <50%
- Dehydration
- Age <3 months with significant illness
- High-risk comorbidities
- Social concerns preventing safe home care

PICU Admission

Refer urgently if:

- Respiratory failure
- Recurrent apnea
- Rising CO₂
- Severe hypoxemia
- Exhaustion

- Need for HFNC/CPAP beyond ward capability
 - Mechanical ventilation anticipated
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9. Referral Criteria

Refer to pediatric specialist/PICU when:

- Severe bronchiolitis
 - Diagnostic uncertainty
 - Congenital heart disease
 - Chronic lung disease
 - Prematurity with severe illness
 - Immunodeficiency
 - Neuromuscular disease
 - Recurrent apnea
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10. Follow-up

Most children improve within:

7–14 days

Cough may persist for:

2–3 weeks

Parents should seek medical review if:

- Breathing worsens
- Poor feeding
- Persistent fever
- Cyanosis
- Apnea
- Lethargy

No routine outpatient follow-up is required for uncomplicated bronchiolitis.

11. Clinical Pearls

- ✓ Bronchiolitis is a **clinical diagnosis**.
 - ✓ **Supportive care is the cornerstone of treatment.**
 - ✓ Oxygen and hydration are the main interventions.
 - ✓ Do **not** prescribe routine bronchodilators.
 - ✓ Wheeze alone does not indicate asthma.
 - ✓ Young infants may present with apnea before respiratory distress.
 - ✓ Pulse oximetry should complement—not replace—clinical assessment.
 - ✓ Chest X-ray often leads to overdiagnosis of pneumonia and unnecessary antibiotic use.
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12. Common Mistakes in Exams and Practice

- ✗ Ordering routine chest X-rays
 - ✗ Giving antibiotics for viral bronchiolitis
 - ✗ Prescribing salbutamol routinely
 - ✗ Using corticosteroids routinely
 - ✗ Performing unnecessary viral testing
 - ✗ Ignoring feeding assessment
 - ✗ Missing apnea in young infants
 - ✗ Delaying escalation in worsening respiratory distress
 - ✗ Over-treating isolated wheeze without considering age and first-episode history
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13. Key Take-Home Messages

1. Bronchiolitis is the **most common lower respiratory tract infection in infants**.
2. Diagnosis is **clinical**; routine investigations are usually unnecessary.
3. Assess severity using **work of breathing, oxygenation, feeding, hydration, and mental status**.
4. **Supportive care** (oxygen, nasal suction, hydration) is the mainstay of treatment.
5. **Routine bronchodilators, corticosteroids, antibiotics, and chest physiotherapy are not recommended**.
6. Admit infants with **hypoxemia, apnea, dehydration, severe respiratory distress, or significant comorbidities**.
7. Consider **HFNC** for persistent hypoxemia or moderate–severe respiratory distress despite standard oxygen therapy.
8. Young infants (<3 months), premature infants, and those with congenital heart disease or chronic lung disease are at higher risk of severe disease.
9. Most children recover completely within **1–2 weeks**, although cough may persist for several weeks.
10. Always provide parents with **clear safety-net advice** regarding worsening breathing, poor feeding, apnea, cyanosis, or lethargy.

High-Yield Examination Tips (One-Minute Review)

Remember	Key Point
Most common cause	RSV
Diagnosis	Clinical
Best treatment	Supportive care
Oxygen threshold (AAP)	SpO₂ <90%
First-line interventions	Oxygen, nasal suction, hydration
Routine bronchodilators	No
Routine corticosteroids	No
Routine antibiotics	No (unless bacterial coinfection is suspected)
Chest X-ray	Only if atypical presentation or complications are suspected
Most important admission factors	Hypoxemia, respiratory distress, apnea, poor feeding, dehydration