

Bronchiolitis & RSV in Infants

Lower respiratory infection of the small airways — the leading cause of infant hospitalization. Inflammation, edema and mucus plug the bronchioles, trapping air and causing wheeze, retractions, and tachypnea. Treatment is overwhelmingly **supportive**: suction, oxygen, hydration. Recognize impending failure early — apnea may be the first sign in young infants.

SNAPSHOT • KEY FACTS

PATHOGEN	RSV (50–80%)
PEAK AGE	2–6 months
SEASON	Nov → March
SPREAD	Droplet + Contact
ISOLATION	Contact + Droplet
TX MAINSTAY	Supportive care
SPO ₂ GOAL	≥90%

§ 01 By the Numbers

AT-A-GLANCE • EPIDEMIOLOGY

AGE MOST AT RISK

< 2yr

Peak severity in infants < 6 months; rare > 2 yrs

RSV BURDEN

80%

Of bronchiolitis cases caused by RSV

SEVERE RR THRESHOLD

>70

Breaths/min in infant = severe distress flag

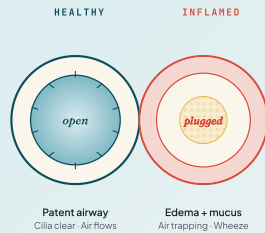
COURSE

7–14d

Symptoms peak day 3–5, resolve in 2 weeks

§ 02 Pathophysiology — Why Babies Suffocate

MECHANISM • VISUAL FLOW



- 1 RSV infects ciliated bronchiole epithelial cells
- 2 INFLAM cells slough; submucosal edema thickens walls
- 3 MUCUS thick secretions + debris plug small airways
- 4 OBSTRUCT partial = wheeze · complete = atelectasis
- 5 TRAP air-trapping → hyperinflation, ↑ work of breathing
- 6 V/Q mismatch → hypoxemia → respiratory failure

§ 03 Clinical Manifestations

RECOGNIZE CUES • PHASE-BASED

Early Phase • Days 1–3 (URI Picture)

- ◆ Rhinorrhea — clear nasal discharge, congestion
- ◆ Mild cough — dry, intermittent
- ◆ Low-grade fever — typically <101.3°F (38.5°C)
- ◆ Decreased appetite — fussy with feeds
- ◆ Sneezing — generally well-appearing

Progressive Phase • Days 3–5 (LRTI Picture)

- ◆ Tachypnea — RR > 60 (often 70–80+)
- ◆ Expiratory wheeze — diffuse, high-pitched
- ◆ Fine crackles — bibasilar on auscultation
- ◆ Retractions — intercostal, subcostal, supraclavicular
- ◆ Nasal flaring + grunting — early failure signs
- ◆ Poor feeding — < 50% normal intake, dehydration
- ◆ Apnea — may be FIRST sign in infants < 2 mo



Retractions

Sub/intercostal & supraclavicular sinking on inspiration



Wheeze

Expiratory, high-pitched, diffuse — hallmark sign



Tachypnea

RR > 60 baseline; > 70 = severe



Nasal flaring

Visible widening of nostrils with each breath



Grunting

Audible expiratory effort to keep alveoli open



Cyanosis

Late sign — perioral, central — impending failure

Red Flags • Escalate Immediately

WHEN TO CALL HCP / RAPID RESPONSE • SEVERE DISEASE INDICATORS

RR > 70

SpO₂ < 90%

Apnea

Sustained tachypnea = severe distress	On room air per AAP threshold	Especially in infants < 2 months → admit
Cyanosis Central perioral or peripheral	Severe retractions + head bobbing, grunting	Lethargy / poor tone Decreased responsiveness
Dehydration < 50% intake · < 6 wet diapers/24h	Age < 3 months Lower threshold for admission	Comorbidity BPD · CHD · prematurity · immune compromise

§ 04 Management — Do / Don't

TAKE ACTION · AAP 2014 (CURRENT 2026)

DO Supportive Care First ✓ Suction first — nasal saline + bulb syringe BEFORE feeds & PRN ✓ Oxygen — humidified, titrate to keep SpO₂ ≥ 90% ✓ Hydration — small, frequent feeds; IV fluids if poor PO ✓ Position upright — elevate HOB 30–45° to ease breathing ✓ Cluster care — minimize stimulation, allow rest ✓ Monitor closely — continuous SpO₂, RR, HR, work of breathing ✓ Contact + Droplet — gown, gloves, mask within 3 ft; cohort RSV+ ✓ Hand hygiene — single most important prevention measure ✓ Antipyretics PRN — acetaminophen / ibuprofen (> 6 mo) ✓ HFNC or CPAP — escalate if work of breathing fails	DON'T Common Wrong Answers ✗ Bronchodilators — albuterol NOT routinely recommended ✗ Corticosteroids — NO benefit, do not give ✗ Antibiotics — viral cause; only if bacterial co-infection ✗ Chest physiotherapy — not recommended (AAP) ✗ Cough suppressants — never in infants/young children ✗ Cool mist tent — outdated, no longer standard ✗ Ribavirin — rarely used, reserved for severe immune-compromised ✗ Routine CXR — not needed for diagnosis (clinical dx) ✗ Routine RSV testing — does not change management ✗ Sedatives — mask respiratory failure signs
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§ 05 NGN Clinical Judgment — Bronchiolitis

RECOGNIZE → ANALYZE → PRIORITIZE → PLAN → ACT → EVALUATE

The 6-Step Clinical Judgment Model in Action						NGN 2026 FRAMEWORK
01 · RECOGNIZE Cues Tachypnea, retractions, wheeze, ↓SpO ₂ , poor feeding	02 · ANALYZE Cues Severity? Dehydration? Apnea risk < 2 mo?	03 · PRIORITIZE Hypothesis Airway/breathing → oxygenation → hydration	04 · GENERATE Solutions Suction, O ₂ , fluids, isolation, parent teaching	05 · TAKE Action Suction nares, position upright, cluster care	06 · EVALUATE Outcomes ↓WOB · SpO ₂ ≥ 92% · feeding · wet diapers	
BOW-TIE PEARL Highest-priority action for an infant with bronchiolitis + RR 72 + SpO ₂ 88%: suction nares + apply oxygen — restore patency & oxygenation BEFORE feeding, BEFORE labs, BEFORE family teaching.			SATA HINT For "select all signs of worsening bronchiolitis": pick tachypnea, retractions, nasal flaring, grunting, lethargy, decreased PO. Do NOT pick mild cough or rhinorrhea — those are baseline.			

§ 06 High-Yield Differentiators — Don't Confuse

COMPARISON · CLICK-TRAP PROTECTION

FEATURE	BRONCHIOLITIS	ASTHMA	CROUP	PNEUMONIA
Typical age	< 2 yr (peak 2–6 mo)	> 2 yr, school-age	6 mo – 6 yr	Any age
Cause	RSV (viral)	Allergen / trigger	Parainfluenza	Viral or bacterial
Hallmark sound	Expiratory wheeze	Wheeze (recurrent)	Inspiratory STRIDOR	Crackles, ↓ breath sounds
Cough character	Wet, persistent	Dry, nocturnal	"Barky" / seal-like	Productive
Fever	Low-grade	None unless infected	Mild	High, often abrupt
Bronchodilators help?	NO (not routine)	YES (mainstay)	NO	NO
Steroids help?	NO	YES	YES (dexamethasone)	NO
Antibiotics?	NO	NO	NO	YES if bacterial

§ 07 Mnemonic — Remember "WHEEZING"

MEMORY AID · 8-LETTER RECALL

W·H·E·E·Z·I·N·G — The 8 Pillars of Bronchiolitis Care							PEDIATRIC RESPIRATORY · VOL. 10
W Work of breathing — assess q1–2h	H Hydration — small frequent feeds, IV if needed	E Elevate HOB — 30–45° upright	E Expiratory wheeze + crackles = hallmark	Z Zero bronchodilators, steroids, antibiotics routinely	I Isolate — Contact + Droplet for RSV	N Nasal suction BEFORE every feed	



Give oxygen if SpO₂ < 90%

§ 08 Click-Trap Warnings

NCLEX WRONG-ANSWER TRAPS · AVOID THESE

! If the Answer Choice Contains These — It's Probably Wrong

"Administer albuterol via nebulizer"

Bronchodilators are NOT routine for bronchiolitis (AAP). Trial only if clear response. If you see this as a "priority intervention" — it's a trap.

"Give oral prednisone / IV methylprednisolone"

Corticosteroids do not benefit viral bronchiolitis. This is a distractor designed for students confusing it with asthma.

"Start empiric antibiotics"

Wrong — viral etiology. Antibiotics only if bacterial co-infection (e.g., acute otitis media, lobar consolidation).

"Perform chest physiotherapy / postural drainage"

Not recommended per current AAP guideline. Common older-textbook trap.

"Encourage caregiver to use cough suppressant at home"

Cough suppressants are unsafe in infants < 2 yr — always wrong.

"Place infant supine after feeding"

Wrong for active distress — keep upright (30–45°) to maximize diaphragm excursion.

"Wait to suction until infant becomes cyanotic"

Cyanosis is a LATE sign — suction proactively BEFORE feeds and at first signs of nasal congestion.

§ 09 Prevention — Passive Immunization 2026

RSV MONOCLONAL ANTIBODIES + MATERNAL VACCINE



NEWER · 2023+

Nirsevimab (Beyfortus)

Long-acting monoclonal antibody. **Single IM dose** for **ALL infants < 8 months** entering their first RSV season. Up to 2 yr if high-risk in 2nd season.



ESTABLISHED · HIGH-RISK

Palivizumab (Synagis)

Monoclonal antibody. **Monthly IM** during RSV season for high-risk: premature < 29 wk, BPD/CLD, hemodynamically significant CHD.



MATERNAL · 2023+

RSV Vaccine (Abrysvo)

Maternal vaccine at **32–36 weeks gestation** during RSV season. Transplacental antibodies protect newborn for first months of life.

§ 10 Discharge & Parent Teaching

RETURN-DEMONSTRATION · HOME CARE



Teach Caregivers · Return Precautions

→ **Bulb suction** — instill 2–3 saline drops, then suction nares BEFORE feeds & before sleep

→ **Hydration** — count wet diapers; expect ≥ 6 in 24 h

→ **Hand hygiene** — wash before handling infant; limit visitors

→ **Fever management** — acetaminophen weight-based; NO aspirin

→ **Return immediately if:** bluish lips, < 50% feeding, no wet diapers x 8 h, > 60 breaths/min at rest, lethargy

→ **Feeds** — small, frequent (q2–3h); breast milk preferred

→ **Smoke-free home** — even thirdhand smoke worsens outcomes

→ **Sleep position** — flat on back (safe sleep) once distress resolves

→ **Symptoms peak day 3–5** — full recovery up to 2 weeks

→ **Follow-up** — pediatrician 24–48 h after discharge