

— RESPIRATORY · NGN NCLEX 2026 VISUAL REVIEW

Asthma.

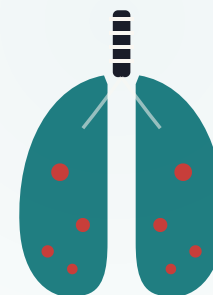
Reversible airway obstruction driven by inflammation, bronchospasm, and mucus plugging — a clinical-judgment priority you will see on the exam.

HIGH-YIELD

PRIORITY · ABCS

NCJMM APPLIED

PHARM-HEAVY



01 Definition & Overview

THE BIG PICTURE

01

Chronic Inflammatory Disease

Long-term inflammation of the airways with **reversible** obstruction — the reversibility is what separates asthma from COPD.

02

Hyperresponsive Airways

Airways overreact to triggers: allergens, cold air, exercise, smoke, stress, respiratory infections, NSAIDs/aspirin.

03

Classic Triad

Bronchoconstriction + inflammation/edema + mucus hypersecretion → dyspnea, wheezing, chest tightness, cough.

02 Pathophysiology

STEP · BY · STEP

Understand the mechanism and the interventions write themselves — every drug we give reverses one of these three problems.

STEP 01

Trigger Exposure

Allergen, irritant, exercise, or infection activates the immune response.



STEP 02

IgE & Mast Cell Release

Mast cells degranulate → histamine, leukotrienes, prostaglandins flood airways.



BRONCHOSPASM

Smooth muscle constricts around bronchioles.

INFLAMMATION

Airway lining swells, further narrowing the lumen.

MUCUS PLUGGING

Thick secretions occlude small airways.

RESULT → Airway narrowing · air trapping (hyperinflation) · impaired gas exchange · **hypoxemia** · if untreated → respiratory failure.

03 Signs & Symptoms

EARLY VS. LATE

EARLY · MILD TO MODERATE

Compensating

- Expiratory wheezing
- Cough (often dry, worse at night)
- Chest tightness / dyspnea on exertion
- Prolonged expiratory phase

LATE · SEVERE / STATUS ASTHMATICUS

Decompensating

- Silent chest — NO wheezing 🚨
- Cannot speak in full sentences 🚨
- Tripod position, accessory muscle use
- Pulsus paradoxus

- Tachypnea & tachycardia
- Mild accessory muscle use
- $\text{SpO}_2 \geq 90\%$ on room air
- Speaks in full sentences
- PEFR 50–80% of personal best

- Cyanosis (circumoral, nail beds) 🚨
- $\text{SpO}_2 < 90\%$ despite oxygen
- Confusion, lethargy, ↓ LOC 🚨
- Fatigue — impending respiratory failure
- PEFR $< 50\%$ of personal best

THE SILENT CHEST

! Absence of wheezing in a known asthmatic is *not* improvement — it means airflow is too minimal to produce sound. This is a **CODE-BLUE-IN-WAITING**. Prepare for intubation.

04 Priority Nursing Interventions

ABC FRAMEWORK

A

AIRWAY

- Position **High Fowler's** or tripod
- Assess breath sounds bilaterally
- Prepare for intubation if silent chest
- Suction as needed — do *not* force

B

BREATHING

- O_2 via mask to keep $\text{SpO}_2 \geq 92\%$
- Administer **SABA (albuterol) FIRST**
- Then IV/PO corticosteroid
- Add ipratropium for severe attack
- Monitor PEFR before & after treatment

C

CIRCULATION + FLUIDS

- Continuous pulse ox & cardiac monitor
- IV access — isotonic fluids to thin mucus
- Monitor for tachycardia / tremor (β -agonist)
- Watch for hypokalemia with repeated SABA
- Calm, quiet environment — anxiety worsens attack

ABG Trajectory

EARLY / MILD

Respiratory **alkalosis** — ↓ CO₂ from hyperventilation, ↑ pH.
Expected early.

LATE / OMINOUS 🚨

Respiratory **acidosis** — normal or rising CO₂ means the patient is tiring. This is *not* improvement — it is impending failure.

Clinical Judgment in Action NCJMM · APPLIED SCENARIO

A 32-year-old admitted with an asthma exacerbation. On assessment: RR 32, SpO₂ 88% on 2L NC, audible wheezing, speaks in 3-word sentences, tripod position, PEFr 45% of personal best.

RECOGNIZE

SpO₂ < 90%, PEFr < 50%, accessory muscle use, tripod, 3-word sentences = severe exacerbation.

ANALYZE

Hypoxemia + airflow obstruction + fatigue pattern → risk of imminent respiratory failure.

PRIORITIZE

Airway/breathing first: upright, O₂ to SpO₂ ≥ 92%, nebulized albuterol + ipratropium, IV steroid, notify HCP.

EVALUATE

Recheck SpO₂, RR, PEFr, speech, LOC. **Silent chest or rising CO₂ = escalate** immediately.

05 Pharmacology

RESCUE VS. CONTROLLER

QUICK-RELIEF

Rescue Inhalers

Work within minutes. For acute attacks only. Goal: **open the airway now**.

LONG-TERM CONTROL

Controllers

Daily use to prevent attacks. **Not** for acute symptoms. Goal: reduce baseline inflammation.

DRUG / CLASS	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Albuterol SABA	RESCUE β ₂ -agonist → bronchodilation in 5 min.	Tachycardia, tremors, nervousness, hypokalemia.	Give FIRST in any attack. Teach to use before exercise. Overuse > 2×/week = poor control.

DRUG / CLASS	MECHANISM	KEY SIDE EFFECTS	NURSING CONSIDERATIONS
Ipratropium ATROVENT · ANTICHOLINERGIC	RESCUE Blocks vagal bronchoconstriction.	Dry mouth, urinary retention, blurred vision.	Often combined with albuterol (DuoNeb). Caution in glaucoma & BPH.
Methylprednisolone / Prednisone SYSTEMIC CORTICOSTEROID	RESCUE Reduces inflammation over hours.	Hyperglycemia, ↑ infection, mood changes, osteoporosis (long-term).	Give after SABA. Taper — never stop abruptly. Monitor glucose, especially in diabetics.
Fluticasone / Budesonide INHALED CORTICOSTEROID (ICS)	CONTROLLER Daily anti-inflammatory. First-line preventer.	Oral candidiasis (thrush), hoarseness.	Rinse mouth after every dose. Use <i>after</i> SABA when both ordered. Takes weeks for full effect.
Salmeterol LABA	CONTROLLER Long-acting β_2 -agonist (12 hr).	Tachycardia, tremors.	BLACK BOX NEVER use alone. Always combined with ICS (e.g., Advair). NEVER a rescue drug.
Montelukast SINGULAIR · LEUKOTRIENE MODIFIER	CONTROLLER Blocks leukotrienes → ↓ inflammation & bronchospasm.	Headache, GI upset, mood changes / suicidal ideation (FDA warning).	Give at bedtime. Report depression, agitation, or SI. Also used in exercise-induced asthma.
Cromolyn MAST CELL STABILIZER	CONTROLLER Prevents mast cell degranulation.	Minimal — throat irritation.	Prevention only — NOT for acute attacks. Good for exercise- or allergen-triggered asthma.
Omalizumab XOLAIR · ANTI-IGE BIOLOGIC	CONTROLLER Binds IgE → prevents mast cell activation.	Anaphylaxis risk , injection-site reaction.	SubQ every 2–4 weeks. Observe 2 hours post-dose. For severe allergic asthma unresponsive to ICS.
Theophylline METHYLXANTHINE	CONTROLLER Bronchodilator — narrow therapeutic range.	N/V, tachycardia, tremors, seizures at toxicity.	Therapeutic level 10–20 mcg/mL . Toxic > 20. Avoid caffeine. Rarely first-line today.

06 NCLEX Test Traps

WHERE STUDENTS LOSE POINTS

"Suddenly quieter lungs" is NOT improvement

A **silent chest** in a wheezing patient = critically low airflow. Escalate — prepare for intubation. Do not document as "resolved."

03 Normal or ↑ CO₂ mid-attack = emergency

In a severe attack you *expect* low CO₂ from hyperventilation. A **"normal"** CO₂ means the patient is tiring — respiratory failure is next.

05 Cromolyn is prevention — never rescue

If the test shows acute wheezing and lists cromolyn, it is the wrong answer. Reach for albuterol.

07 Don't confuse asthma with COPD

Asthma = **reversible**, episodic, allergen-driven. COPD = progressive, fixed obstruction. The treatments overlap but the teaching does not.

02 SABA before ICS — always

If both inhalers are ordered, give **albuterol first**. It opens the airway so the corticosteroid reaches the lower airways. Wait 1 min between puffs / 5 min between different inhalers.

04 LABA alone = Black Box

Salmeterol alone increases asthma-related death. Must always be paired with an ICS. And **never** use for acute symptoms.

06 Rinse the mouth after ICS

Failure to rinse → oral **candidiasis (thrush)** & hoarseness. Use a spacer whenever possible to reduce oropharyngeal deposition.

08 Albuterol overuse is a red flag

Needing SABA **more than 2×/week** (outside exercise prevention) = poorly controlled asthma. Patient needs a controller — not more rescue.

07 Patient Education

SELF-MANAGEMENT

Core Teaching Points

- 1 Identify and **avoid triggers**: allergens, cold air, smoke, strong odors, NSAIDs/aspirin, stress, URIs.
- 2 Use controller meds **daily** — even when feeling well. Controllers do not work on demand.
- 3 Carry the rescue inhaler (SABA) **at all times**. Replace before it expires.

Peak Flow Zones

% of personal best · the stoplight system

GO

Green · 80–100%

Well controlled. Continue daily controller meds.

CAUTION

Yellow · 50–79%

Warning — use rescue inhaler. Follow action plan. Call HCP if not improving.

- 4 Proper inhaler technique: shake · exhale · seal · slow deep inhale · hold 10 sec · exhale. **Use a spacer** whenever possible.
- 5 Rinse mouth with water after every ICS dose to prevent oral thrush.
- 6 For exercise-induced asthma: take SABA **15–30 minutes before** activity.
- 7 Keep and follow a written **Asthma Action Plan** (green/yellow/red zones).
- 8 Get annual flu vaccine & pneumococcal vaccine — respiratory infections are major triggers.
- 9 Seek emergency care if rescue inhaler is not working, lips are blue, cannot speak in sentences, or PEFr drops into red zone.



Red · < 50%

Medical alert — use rescue inhaler & get emergency care immediately.

o8 Memory Boosters

STICK-IN-YOUR-HEAD

ASTHMA

ACUTE ATTACK MANAGEMENT MNEMONIC

- A** **Adrenergics** — Albuterol FIRST
- S** **Steroids** — systemic & inhaled
- T** **Theophylline** — rarely used, narrow range
- H** **Hydration** — IV fluids to thin secretions
- M** **Mask** — O₂ to keep SpO₂ ≥ 92%
- A** **Anticholinergics** — Ipratropium add-on

Quick Associations

PATTERN · RECOGNITION

"Silent is Sinister"

No wheezing ≠ better. It means air isn't moving.

SABA = "Saves Breathing Attacks"

Short-Acting = rescue. Albuterol.

LABA = "Long-term, Add to ICS"

Long-Acting β-agonist. NEVER alone. NEVER rescue.

ICS → Rinse & Spit

Inhaled Corticosteroid + unrinsed mouth = thrush.

Peak Flow = Traffic Light

Green go · Yellow caution · Red stop.

NGN NCLEX 2026 · Visual Review Series

Respiratory · Asthma · High-Yield · Clinical Judgment Measurement Model Applied