NGN NCLEX · 2026 TEST PLAN · RESPIRATORY SYSTEM

Oxygen Therapy

High-Yield Clinical Judgment Review · Nursing Pharmacology & Safety

Respiratory | Priority Safety | COPD Special Pop.

1 · DEFINITION & OVERVIEW

- Supplemental O_2 delivered to **maintain adequate tissue oxygenation** via nasal cannula, mask, or other delivery device
- O_2 is **NOT explosive** — it **supports combustion**; fire safety is non-negotiable
- All administered O_2 must be **humidified** to prevent mucous membrane drying
- Flow rate must be checked **at least once per shift**

2 · PATHOPHYSIOLOGY (SIMPLIFIED)

Low O_2 in tissues → Chemoreceptors detect hypoxia → SNS activation → Restlessness + tachycardia → Cyanosis / organ failure if untreated

- COPD: relies on LOW O_2 as breathing trigger — high O_2 → apnea

3 · SIGNS & SYMPTOMS OF HYPOXIA

- **Early (mild): Restlessness, Tachycardia** — Act immediately
- **Late (severe):** Cyanosis, confusion, altered LOC
- **O_2 Toxicity:** Confusion + headache (excess O_2 exposure)
- Nasal cannula irritation → nares + behind/top of ears
- High flow via nasal cannula → dries mucous membranes

- Restlessness = the #1 EARLIEST sign — do not wait for cyanosis

4 · PRIORITY NURSING INTERVENTIONS

- **Assess** for restlessness & tachycardia first (hypoxia cues)
- **Monitor** O_2 flow rate at least once per shift
- **Inspect** nares AND behind/top of ears every **6–8 hours**
- **Humidify** all O_2 delivery to protect membranes
- **Limit** COPD to max **2.5 L/min** — high flow → apnea
- **Remove** tank/device from room before any smoking (even when O_2 is off)
- **Use mask** when higher O_2 concentration is needed (masks > nasal cannula)

O_2 FLOW RATE QUICK REFERENCE — ADULT

30–60 mL/hr	≤ 2.5 L/min	≤ 6 L/min	> 6 L/min
KVO ("Keep Vein Open")	COPD maximum	Nasal cannula max	High flow via NC
Patent maintenance only	Hypoxic drive protection	Above = switch to mask	Dries mucosa — use mask

5 · PHARMACOLOGY / DELIVERY DEVICES

Nasal Cannula (NC)
Low–moderate FiO_2 | Max 6 L/min | Dries mucosa at high flow | Check nares + ears q6–8h

Simple Face Mask
Higher FiO_2 than nasal cannula | Must humidify O_2

Non-Rebreather Mask (NRB)
Highest O_2 delivery short-term | Avoid in COPD | Emergency/acute hypoxia only

O_2 Toxicity Signs
Confusion | Headache | Reduce FiO_2, notify HCP

6 · NCLEX TEST TRAPS ⚠

! **Trap 1 — COPD High Flow:** Never give COPD patients high-flow O_2. They breathe based on LOW O_2 levels (hypoxic drive). High O_2 removes that stimulus → respiratory arrest. Max = 2.5 L/min.

! **Trap 2 — Smoking Safety:** It is NOT safe to smoke even when O_2 is turned off. The O_2 device/tank must be physically removed from the room first.

! **Trap 3 — Explosion Myth:** O_2 does NOT explode. It supports combustion. The NCLEX will test this distinction directly.

! **Trap 4 — Skin Assessment Site:** Students assess only the nares. The NCLEX also expects you to assess *behind and on top of the ears* every 6–8 hours with nasal cannula use.

! **Trap 5 — Early Hypoxia:** Restlessness is the #1 earliest sign, NOT cyanosis. Cyanosis is a late, severe finding. Prioritize restlessness + tachycardia.

7 · CLINICAL JUDGMENT (NCJMM FRAMEWORK)

RECOGNIZE CUES
Restlessness, tachycardia, low SpO_2, cyanosis, confusion, skin irritation at nares/ears

ANALYZE CUES
Is patient hypoxic? COPD history? Current O_2 device appropriate? Rate correct? Signs of toxicity?

PRIORITY ACTION
Apply appropriate O_2 device; restrict COPD to 2.5 L/min; humidify; notify HCP if worsening

EXPECTED OUTCOME
SpO_2 ≥ 94%, resolution of restlessness and tachycardia, intact skin at cannula sites

8 · MEMORY BOOSTERS

HYPOXIA — FIRST TWO SIGNS
Restlessness + Tachycardia → "RT before ICU"
Think: call the Respiratory Therapist before it becomes a code

COPD RULE
"2.5 keeps COPD alive"
Above 2.5 L/min, the hypoxic drive is lost → apnea → emergency

O_2 SAFETY RULE
"Off ≠ Out"
Turning O_2 off is not enough — tank must physically leave the room

SKIN CHECK PATTERN
N-E-T: Nares · Ears (behind & on top) · every 6–8 hours

MASKS VS NASAL CANNULA
"More O_2? Mask it!"
Masks deliver higher FiO_2 concentrations than nasal cannula

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