

NGN NCLEX 2026 • PULMONARY / RESPIRATORY

Obstructive *Sleep Apnea*

Repeated upper-airway collapse during sleep → intermittent hypoxia, hypercapnia, fragmented sleep, and serious cardiovascular consequences. A high-yield NCLEX topic for prioritization, perioperative safety, and patient education.

SYSTEM: RESPIRATORY

CLUSTER: CARDIOPULM

PRIORITY: AIRWAY • SAFETY

NCJMM: ALL 6 STEPS

Source Note: Obstructive sleep apnea is not covered in Diane's uploaded reference notes. Content compiled from *Saunders Comprehensive Review for the NCLEX-RN 2026*, *ATI Medical-Surgical Nursing*, *Lippincott Illustrated Reviews: Pharmacology*, the *American Academy of Sleep Medicine (AASM) Clinical Practice Guidelines*, and the *American Thoracic Society* recommendations on adult OSA.



DEFINITION • OVERVIEW

What Is Obstructive Sleep Apnea?

- ▶ **OSA** is a sleep-related breathing disorder marked by *recurrent collapse of the upper airway* during sleep, producing complete (apnea) or partial (hypopnea) airflow blockage despite ongoing respiratory effort.
- ▶ Each obstruction lasts ≥ 10 seconds and ends in a brief arousal — sleep is fragmented, oxygen saturation drops, and CO_2 rises.
- ▶ It is the **most common type of sleep apnea** (vs. central, which has no respiratory effort, or mixed). Affects ~25% of adults; majority remain *undiagnosed*.
- ▶ Severity is graded by the **Apnea-Hypopnea Index (AHI)** — average obstructive events per hour of sleep.

Mild

5–15

events / hr

Moderate

15–30

events / hr

Severe

> 30

events / hr

Top Risk Factors

- ▶ **Obesity** (BMI > 30) — #1 modifiable
- ▶ Large neck circumference (> 17" men, > 16" women)
- ▶ Male sex; age > 40
- ▶ Family history; craniofacial anatomy
- ▶ Alcohol, sedatives, smoking
- ▶ Hypothyroidism, acromegaly

Why It Matters for NCLEX

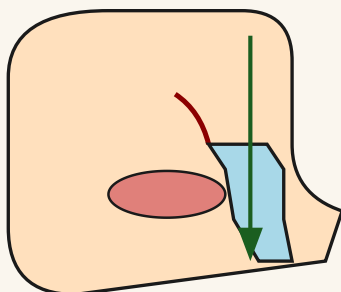
- ▶ Strong link to **HTN, stroke, MI, A-fib, sudden cardiac death**
- ▶ Perioperative airway risk — anesthesia, opioids, sedatives = danger
- ▶ Public safety: MVA risk from excessive daytime sleepiness
- ▶ Reversible with **CPAP adherence** — huge patient-education focus

2

PATHOPHYSIOLOGY • STEP-BY-STEP

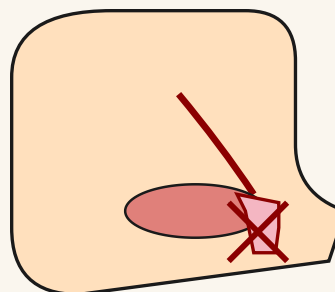
How the Airway Collapses

Awake / Open Airway



FREE AIRFLOW

Asleep / Collapsed Airway



AIRFLOW BLOCKED

UPPER-AIRWAY ANATOMY DURING WAKE VS. OBSTRUCTIVE SLEEP APNEA EVENT

01 Sleep onset → pharyngeal dilator muscles (genioglossus, tensor palatini) relax. Negative inspiratory pressure pulls soft tissue inward.



02 Tongue, soft palate, and uvula collapse against the posterior pharyngeal wall. Excess adipose, large tonsils, or retrognathia worsen the obstruction.



03 Airflow stops or drops despite continued chest/abdominal effort — distinguishes obstructive (effort present) from central (no effort) apnea.



04 SpO₂ falls, PaCO₂ rises. Chemoreceptors fire → sympathetic surge → BP and HR spike.



05 Brief arousal (often unremembered) restores muscle tone → loud snort/gasp → breathing resumes → patient drifts back to sleep.



06

Cycle repeats 5–100+ times per hour. Chronic intermittent hypoxia → endothelial dysfunction, inflammation, insulin resistance, pulmonary HTN, cor pulmonale.

3

SIGNS • SYMPTOMS • RED FLAGS

Recognize the Clinical Picture

Nighttime Signs

- ▶ **Loud, chronic snoring** — hallmark; usually reported by bed partner
- ▶ Witnessed apneas — partner sees breathing pauses
- ▶ Gasping or choking arousals
- ▶ Restless sleep, frequent position changes
- ▶ Nocturia (≥ 2 voids/night)
- ▶ Diaphoresis at night
- ▶ Dry mouth on waking

Daytime Signs

- ▶ **Excessive daytime sleepiness (EDS)** — hallmark; falls asleep at meetings, driving, watching TV
- ▶ Morning headache (CO_2 retention)
- ▶ Fatigue, poor concentration, memory issues
- ▶ Irritability, depression, mood changes
- ▶ Decreased libido / erectile dysfunction
- ▶ Hypertension — often resistant

RED FLAG COMPLICATIONS

- ▶ **Cardiovascular:** Resistant HTN, atrial fibrillation, MI, stroke, sudden cardiac death during sleep
- ▶ **Pulmonary:** Pulmonary hypertension → right-sided heart failure (cor pulmonale), polycythemia
- ▶ **Metabolic:** Type 2 diabetes, metabolic syndrome, NAFLD
- ▶ **Safety:** Motor-vehicle accidents — 2–7× higher risk; workplace injuries
- ▶ **Perioperative:** Difficult intubation, post-op respiratory depression, prolonged PACU stay, unplanned ICU admission

Screening Tools

- ▶ **STOP-BANG** questionnaire — ≥ 3 yes = high risk
- ▶ **Epworth Sleepiness Scale** — ≥ 10 indicates excessive sleepiness
- ▶ Berlin Questionnaire

Diagnostic Studies

- ▶ **Polysomnography (PSG)** — overnight in-lab; *gold standard*
- ▶ Home sleep apnea test (HSAT) — for moderate-to-high pretest probability

- ▶ Pulse ox trending, ABG (chronic hypercapnia), TSH, CBC (polycythemia), ECG

4

PRIORITY NURSING INTERVENTIONS • ABC FRAMEWORK

What the Nurse Does

A Airway

- ▶ **CPAP / BiPAP** — first-line therapy; ensure proper mask fit, no leaks
- ▶ Position: **lateral or HOB ≥ 30°** — never supine flat
- ▶ Suction equipment available at bedside
- ▶ Dental device for mild OSA who can't tolerate CPAP
- ▶ Surgical referral if anatomic obstruction (UPPP, hypoglossal stimulator, maxillomandibular advancement)

B Breathing

- ▶ Continuous **SpO₂ monitoring**; goal > 90%
- ▶ Continuous capnography (ETCO₂) post-op or with opioid use
- ▶ Educate on CPAP — wear every sleep period including naps
- ▶ Treat nasal congestion (allergies, deviated septum)
- ▶ Smoking cessation

C Circulation

- ▶ Telemetry — watch for **A-fib, bradyarrhythmias**
- ▶ BP monitoring — OSA drives resistant HTN
- ▶ Weight management — even 10% loss reduces AHI significantly
- ▶ Treat comorbid HF, DM, hypothyroidism

⚠ SAFETY PRIORITIES — DO NOT MISS

- ▶ **Driving safety:** Advise no driving until EDS controlled — required reporting in some jurisdictions
- ▶ **Avoid CNS depressants:** Opioids, benzodiazepines, alcohol, muscle relaxants — all worsen apnea and blunt arousal
- ▶ **Perioperative:** Notify anesthesia of dx; bring CPAP to hospital; PACU monitoring; supplemental O₂ titrated cautiously
- ▶ **Pre-op screening:** Use STOP-BANG on all surgical patients

5

PHARMACOLOGY • ADJUNCTS AND AVOIDANCES

Drugs to Know — and Avoid

Key principle: No medication cures OSA. **Positive airway pressure (CPAP/BiPAP)** is the mainstay. Drugs are limited to treating *residual* daytime sleepiness or comorbidities, and a critical NCLEX focus is which drugs to *avoid*.

Drug / Class	Mechanism	Use in OSA	Nursing Considerations
Modafinil (Provigil)	Wakefulness-promoting agent; non-amphetamine CNS stimulant	Residual EDS despite optimal CPAP use	Monitor BP/HR; can ↓ effectiveness of hormonal contraceptives; risk of severe rash (SJS) — stop at first rash
Armodafinil (Nuvigil)	R-enantiomer of modafinil; longer half-life	Residual EDS in treated OSA	Same as modafinil; once-daily AM dosing
Solriamfetol (Sunosi)	Dopamine/norepinephrine reuptake inhibitor	Residual EDS	Monitor BP — can elevate; avoid with MAOIs; not for active CV disease
Intranasal corticosteroids	↓ nasal inflammation/obstruction	Adjunct when nasal congestion limits CPAP tolerance	Educate on proper technique; takes days to peak effect
GLP-1 agonists (semaglutide, tirzepatide)	Weight loss → reduces AHI	Adjunctive — newer evidence supports use in obesity-related OSA	GI side effects (N/V); pancreatitis risk; SQ injection education

⚠️ **AVOID — THESE WORSEN OSA**

- ▶ **Benzodiazepines** (lorazepam, diazepam) — relax pharyngeal muscles, blunt arousal
- ▶ **Opioids** (morphine, hydromorphone, oxycodone) — respiratory depression + ↓ arousal
- ▶ **Alcohol** within 3–4 hrs of bedtime
- ▶ **Muscle relaxants** (cyclobenzaprine, baclofen)
- ▶ **Sedating antihistamines** (diphenhydramine)
- ▶ Avoid **supine sleep aids/positioners**

6

NCLEX TEST TRAPS • WRONG VS. RIGHT

Common Trap Answers

✗ TRAP

Position the post-op OSA client **supine** for comfort.

→

✓ RIGHT

Position **lateral or with HOB ≥ 30°**. Supine worsens posterior tongue collapse.

✗ TRAP

Administer **hydromorphone PRN** for the post-op OSA client without extra monitoring.

→

✓ RIGHT

Use lowest effective dose, multimodal analgesia, **continuous SpO₂/ETCO₂**, CPAP at bedside.

✗ TRAP

Tell client they can **stop CPAP when they feel rested**.

→

✓ RIGHT

CPAP is **lifelong therapy** — every sleep period including naps. Symptoms return within nights of stopping.

✗ TRAP

Give **diphenhydramine or lorazepam** for the OSA client's insomnia complaint.

→

✓ RIGHT

Avoid sedating antihistamines and benzos. Treat the OSA — sleep quality will improve with CPAP.

✗ TRAP

Reassure a snoring client that loud snoring is "**normal and harmless**."

→

✓ RIGHT

Loud chronic snoring + witnessed apneas + EDS = red-flag triad. **Refer for sleep study**.

✗ TRAP

Confuse OSA with **central sleep apnea (CSA)** — both look similar.

→

✓ RIGHT

OSA = obstruction *with* respiratory effort. CSA = *no* effort (brain doesn't signal). CSA seen in HF, opioid use, stroke.

✗ TRAP

Apply **high-flow O₂ alone** to "treat" the OSA client's hypoxia.

→

✓ RIGHT

O₂ alone doesn't fix obstruction and may worsen CO₂ retention. **CPAP/BiPAP** splints airway open.

7

PATIENT • FAMILY EDUCATION

Teaching Points

CPAP Adherence

- ▶ Wear CPAP **every night, every nap** — minimum 4 hrs/night, ideally all sleep time
- ▶ Clean mask daily with mild soap & water; replace cushions per manufacturer
- ▶ Use heated humidifier to prevent dryness
- ▶ Skin breakdown: refit mask, try nasal pillows or full-face
- ▶ Bring CPAP machine to **all hospital admissions**

Lifestyle

- ▶ **Weight loss** — even 10% reduction lowers AHI substantially
- ▶ Sleep **lateral**; tennis-ball-in-shirt technique to avoid supine
- ▶ No alcohol within 3–4 hrs of bedtime
- ▶ Avoid sedatives & opioids
- ▶ Smoking cessation
- ▶ Regular sleep schedule, treat nasal allergies

Safety

- ▶ No driving when drowsy; pull over if needed
- ▶ Inform **all healthcare providers** of OSA — especially before surgery, sedation, opioids
- ▶ Wear medical-alert ID
- ▶ Bed partner: learn rescue position, when to call 911

Follow-Up

- ▶ Repeat sleep study after weight loss or symptom change
- ▶ Annual BP, lipid, A1C, depression screening
- ▶ CPAP adherence data (smart-card or app) reviewed with sleep team
- ▶ Yearly mask refit



MEMORY BOOSTERS • MNEMONICS

Lock It In

STOP-BANG — Screening Tool

- S** noring loud
- T** ired daytime
- O** bserved apneas
- P** ressure (HTN)
- B** MI > 35
- A** ge > 50
- N** eck > 16"
- G** ender = male

Score ≥ 3 yes = high risk for OSA

"SLEEPY" — Classic OSA Triad+

- S** noring (loud, chronic)
- L** arge neck
- E** xcessive daytime sleepiness
- E** pisodes of apnea (witnessed)
- P** ressure (HTN, often resistant)
- Y** awning all day

"CPAP" — Why It Works

- C** ontinuous
- P** ositive
- A** irway
- P** ressure

→ *pneumatic **splint** that holds the upper airway open all night*

Drugs to AVOID — "BOA SM"

- B** enzodiazepines
- O** pioids
- A** lcohol
- S** edating antihistamines
- M** uscle relaxants

The "BOA SM" squeezes the airway shut.

OSA vs. CSA — Quick Differentiator

OSA = **O**bstruction with effort (chest still moves)

CSA = **C**NS / no effort (chest doesn't move)

Patient with HF, opioid use, or stroke → think CSA.



NCJMM 6-STEP CLINICAL JUDGMENT SCENARIO

Putting It Together

Client Scenario: A 52-year-old male presents to the primary care clinic with chronic fatigue. He is 5'10", 265 lb (BMI 38), neck circumference 18". His wife reports he "snores like a freight train" and she's watched him stop breathing in his sleep. He fell asleep at a red light yesterday and was rear-ended at low speed. BP 156/94, HR 88, SpO₂ 94% on room air. PMH: type 2 DM, resistant HTN on three agents.

STEP 1 • RECOGNIZE CUES

What stands out?

- ▶ **Relevant:** Obesity (BMI 38), large neck (18"), loud snoring, witnessed apneas, EDS with near-MVA, resistant HTN, T2DM
- ▶ **Irrelevant:** Low-speed MVA injury without trauma signs (focus is the cause — sleepiness)

STEP 2 • ANALYZE CUES

What do they mean?

- ▶ Triad of **snoring + witnessed apneas + EDS** with obesity & large neck = textbook OSA presentation
- ▶ Resistant HTN and T2DM are known OSA comorbidities and consequences of chronic intermittent hypoxia
- ▶ Near-MVA = **public safety red flag** — drowsy driving risk

STEP 3 • PRIORITIZE HYPOTHESES

What's most likely?

- ▶ **#1: Moderate-to-severe obstructive sleep apnea** (highest probability and highest acuity)
- ▶ **#2: Uncontrolled HTN** — likely OSA-driven
- ▶ Rule out: thyroid disorder, depression, narcolepsy, cardiac cause of fatigue

STEP 4 • GENERATE SOLUTIONS

What are the options?

- ▶ Administer STOP-BANG and Epworth scale today
- ▶ Refer for **polysomnography** (or HSAT given high pretest probability)
- ▶ Immediate driving precautions — no driving until cleared

- ▶ Initiate weight-management plan; consider GLP-1 agonist
- ▶ Order labs: TSH, A1C, CBC, lipid panel
- ▶ Counsel: avoid alcohol/sedatives; sleep lateral

STEP 5 • TAKE ACTION

What is done first?

- ▶ **Priority 1 (safety):** Educate on drowsy-driving risk; arrange alternate transport home today
- ▶ Schedule sleep study within 1–2 weeks; provide written referral
- ▶ Initiate STOP-BANG documentation (score will likely be ≥ 5)
- ▶ Teach: side-lying sleep, no alcohol within 3–4 hrs of bed, no sedating antihistamines
- ▶ If CPAP prescribed after PSG → teach mask fit, daily cleaning, continuous use

STEP 6 • EVALUATE OUTCOMES

Did it work?

- ▶ **Expected:** AHI < 5 on CPAP; Epworth score normalizes; no further drowsy episodes; BP improves on existing meds
- ▶ Weight reduction of 5–10% over 6 months → reassess AHI
- ▶ CPAP download shows ≥ 4 hr/night use on $\geq 70\%$ of nights
- ▶ **Reassess if:** persistent EDS (consider modafinil), mask intolerance (refit), or rising AHI (consider BiPAP)