

Obstructive Sleep Apnea Hypopnea

DSM-5-TR 327.23 | ICD-10-CM G47.33

Repetitive upper airway collapse in sleep causing apneas, hypopneas, desaturation, and arousals, with daytime sleepiness and cardiometabolic risk.

PREVALENCE

~14% men, ~5% women

TYPICAL ONSET

Middle age; rises with BMI

SEX RATIO

2-3:1 male:female

UNDIAGNOSED

~80% of moderate-severe

CLINICAL PICTURE

- Loud habitual snoring with witnessed apneas and gasping arousals, almost always reported by a bed partner rather than by the patient.
- Nonrestorative sleep with morning headache, dry mouth, and excessive daytime sleepiness reflected in an **Epworth** score above 10.
- Nocturia, reflux, and nocturnal sweating are common and reflect large intrathoracic pressure swings generated against a closed airway.
- Physical markers include central obesity, neck circumference above 17 inches in men, retrognathia, macroglossia, and a crowded oropharynx.
- Presentations in women and older adults skew toward insomnia, fatigue, and mood complaints rather than classic snoring and sleepiness.
- Treatment-resistant hypertension, nocturnal atrial fibrillation, and antidepressant-refractory depression should each prompt an apnea evaluation.

DIAGNOSTIC CRITERIA AT A GLANCE

- Polysomnography or home sleep apnea testing showing at least 5 obstructive apneas or hypopneas per hour plus nocturnal breathing symptoms or daytime sleepiness.
- Alternatively, 15 or more obstructive respiratory events per hour of sleep qualifies regardless of accompanying symptoms.
- Severity is graded by the apnea-hypopnea index: mild 5 to 14, moderate 15 to 29, and severe at 30 or more events per hour.
- Events must be obstructive with continued respiratory effort against a closed airway, which separates this from central sleep apnea.
- The diagnosis is made alongside coexisting psychiatric and sleep disorders rather than being excluded by them.

NEUROBIOLOGY & PHYSIOLOGY

- Airway patency depends on **genioglossus** tone driven by hypoglossal motor output, which falls at sleep onset and drops further during REM sleep.
- Four endotypic traits set the phenotype: anatomic collapsibility, loop gain instability, arousal threshold, and upper airway muscle responsiveness.
- Intermittent hypoxia with reoxygenation generates oxidative stress, sympathetic surge, and endothelial dysfunction that drive daytime hypertension.
- Repetitive cortical arousals fragment sleep and suppress slow-wave and REM stages, impairing memory consolidation and executive function.
- Untreated severe disease raises risk of cardiovascular mortality, stroke, atrial fibrillation, and incident type 2 diabetes substantially.
- Hypoxic burden correlates with hippocampal and white matter injury and with roughly doubled risk of later cognitive impairment.

PSYCHOLOGICAL MECHANISMS

- Sleepiness is chronically underreported because patients recalibrate to years of impairment and deny drowsy driving until crash risk is made explicit.
- Apnea produces a depression phenocopy with anhedonia, fatigue, and concentration failure that antidepressant monotherapy will not resolve.
- Adherence to positive airway pressure is a behavioral problem: claustrophobia, partner reaction, self-image, and the first-week experience predict long-term use.
- Motivational interviewing and structured education raise nightly use meaningfully compared with device troubleshooting alone.
- Bed-partner sleep disruption and separate bedrooms drive relationship strain and are often the actual reason the patient finally presents.

DIFFERENTIAL & COMORBIDITY

- Distinguish from narcolepsy, insufficient sleep syndrome, and circadian rhythm disorders, since sleepiness persisting on effective therapy points elsewhere.
- Central sleep apnea, obesity hypoventilation syndrome, and Cheyne-Stokes breathing in heart failure each require different pressure strategies.
- Comorbid insomnia occurs in roughly 30% to 40% and predicts device failure, so deliver **CBT-I** alongside airway therapy.
- Opioids, benzodiazepines, alcohol, and gabapentinoids worsen event severity and lower arousal threshold, so review these before raising pressure.
- Screen surgical patients preoperatively with **STOP-BANG**, since undiagnosed apnea substantially raises perioperative respiratory risk.

Treatment EVIDENCE-BASED MANAGEMENT

PHARMACOLOGIC

- No drug treats the obstruction itself, so pharmacotherapy targets either residual sleepiness or the underlying obesity driving collapsibility.
- Tirzepatide** is approved for moderate to severe apnea with obesity and reduced the apnea-hypopnea index by roughly 25 to 30 events per hour in trials.
- Soliamfetol 37.5-150 mg** and **modafinil 100-200 mg** treat residual sleepiness, but only after adherent and effective airway therapy is documented.
- Treat nasal congestion with intranasal corticosteroids to improve mask tolerance, and avoid sedative-hypnotics that deepen event severity.
- Review and deprescribe opioids and benzodiazepines while managing comorbid hypertension, atrial fibrillation, and diabetes concurrently.

PSYCHOTHERAPY

- CBT-I** delivered before or alongside airway therapy resolves comorbid insomnia and substantially improves nightly device use.
- Motivational enhancement and brief behavioral interventions improve adherence by roughly one additional hour per night in randomized trials.
- Graded desensitization with daytime mask wear and short practice sessions addresses claustrophobia and interface intolerance.
- Behavioral weight management with structured diet and activity produces apnea-hypopnea index reductions roughly proportional to weight lost.
- Include the bed partner in treatment planning, since partner support is among the strongest predictors of sustained adherence.

ADJUNCT & SUPPORTIVE

- CPAP** is first-line for moderate to severe disease, and auto-titrating devices are acceptable for uncomplicated adult cases.
- Mandibular advancement devices are the preferred alternative for mild to moderate disease or for documented CPAP intolerance.
- Positional therapy helps supine-predominant disease, and hypoglossal nerve stimulation suits selected non-obese patients who fail CPAP.
- Surgical options range from tonsillectomy and uvulopalatopharyngoplasty to maxillomandibular advancement in anatomically selected patients.
- Counsel on drowsy driving and state reporting rules, and verify adherence by download showing at least 4 hours on 70% of nights.

CLINICAL PEARLS

- Sleepiness persisting on adherent CPAP is a second diagnosis, not a CPAP failure.
- In women, apnea looks more like insomnia, fatigue, and depression than snoring.
- Treatment-resistant hypertension earns a sleep study before a fourth drug.

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NOTE

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